

Marx's Capital
Translated
for the 21st Century



Volume Two
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Capital Volume II

The Process of Circulation of Capital

Introduction

Volume II of Marx's *Capital* is probably the least read of the three volumes. It is less “sexy” than *Volume I* or *Volume III*.

Volume I contains all of the basic ideas that form the building blocks of Marx's theory, outlining the categories of value, use value, exchange value, money, commodity and capital, and the concepts of constant and variable capital, of surplus value and exploitation, in the form of absolute and relative surplus value. It establishes the bare bones of the important analytical relationships of rate of surplus value, and rate of profit, and determination of the normal working-day. Finally, it contains all of that descriptive analysis of capitalism and its effects, much of it taken from Engels' own detailed studies, contained in *The Condition of the Working Class in England*.

Volume III contains the general overview of capitalism as a system, its history and trajectory. It provides an analysis of the dynamics of the system as a whole, and thereby describes the way in which *capital* itself originates as a monopolistic ownership of the means of production; in other words, capital as private property, much as slaves were the private property of slave owners, and land was the private property of landowners, in former modes of production, but by the very process of its own development grows beyond the limits of such private ownership. Where *Volume I* provides an analysis of capital at the level of “*many capitals*”, *i.e.* at the level of individual firms, *Volume III*, provides an analysis at the level of “*capital in general*”, *i.e.* at the level of the system as a whole, and the myriad of interrelationships between all of these many capitals. It deals with the questions of social reproduction, and how this capital is divided into productive-capital, commercial-capital, and interest-bearing capital, along with capitalist landed property, and the way these provide different forms of revenue, and the contradictory relations between them.

Indeed, one of the reasons that *Volume III*, is most often cited is precisely because it contains a description of all these various contradictions within the system, and the potential for crises that arise from them. In other words, where *Volume I*, provides a great deal of ammunition for those who want to provide a moralistic critique of the evils of capitalism, *Volume III* contains a great deal of ammunition for all those who wish to point to the negative aspects of capitalism in terms of its tendency to such periodic crises. Rather than picking out the positive elements of capitalism, described by Marx, therefore, to develop the productive forces, as the precondition for socialism, of its natural tendency to develop “*socialised capital*”, as a consequence of the process of concentration and centralisation, and the development of credit, the focus has tended to be placed on a catastrophist scenario in which capitalism is overthrown because of the evils it produces, and the crises it experiences.

Set against these other volumes, *Volume II*, offers much fewer rich pickings, in that regard. Moreover, because it deals with capital in process, far more than is the case with either *Volume I* or *III*, it is couched far more in dialectical terms. That is the case quite clearly in the lengthy analysis of different instances of the metamorphosis of capital, from one form to

another, for example, from money-capital to productive-capital, from productive-capital to commodity-capital, and from commodity-capital to money-capital.

In this analysis, Marx explains that, in the process of these metamorphoses, what is exchanged is not capital, but the commodities that comprise the capital in these different forms, whilst the capital value itself remains. When the capitalist sells their output, which comprises their commodity-capital, for example, they do not sell/exchange the commodity-capital, but only the commodities that comprise the elements of that commodity-capital. The commodity-capital may have a value of say £1,000, and this is the value of the commodities that comprise it, which now also embodies the surplus value, but the capitalist does not sell capital to the value of £1,000, but only commodities with a value of £1,000. In the process, the actual capital, as opposed to the commodities, is metamorphosed, just as with a caterpillar becoming a butterfly. The commodity-capital, of £1,000 is metamorphosed into money-capital of £1,000.

Understanding, this metamorphosis of capital as process, rather than capital as a thing, is central to understanding Marx's later analysis of the process of social reproduction. In fact, without understanding this concept of capital as process it is impossible to properly understand any of the later concepts that Marx describes, whether it is the various causes of crises, the rate of profit, the rate of turnover and so on.

Volume II is the engine room of Marx's *Capital*. Not only does it provide a bridge between *Volume I* and *Volume III*, in that it starts from an analysis of the circulation of capital at the level of "many capitals", and arrives at an analysis of the circulation of the total social capital, via the exchange between *Department I* and *II*, but in doing so, it also sets out the dynamic mechanism by which the production of capital at an individual level is transformed into a production and realisation of profit at a systemic level, along with all of the contradictions, and potential breakdowns that such a process necessitates.

Because it deals with this nitty-gritty of the process it is more difficult than the other two volumes, which is undoubtedly another reason why it receives less attention. It has been grossly under studied, other than for the final chapters on *Simple* and *Expanded Reproduction*. That is probably one reason that so many other errors and misconceptions have arisen in the understanding of Marx's work in total.

The page numbers referred to throughout correspond to those in the 1974 Lawrence & Wishart Edition of *Volume II*, of *Capital*.

Marx dedicated *Volume II* and *III* of *Capital* to his wife. I am happy to follow his example, and to dedicate *Volume II* of my modern translation of his work to my wife, Judy. For more than forty years, she has been at my side, and provided me with the support I needed to be able to undertake my studies and political activity.

Preface To The First Edition (1885)

Marx died in 1883, having only published *Volume I* of his great work, in 1867. Contrary to many accusations made against him, at the time, he had, however, worked out his ideas for the rest of *Capital*, by the time the first volume of *Capital* was published. Engels, in describing the various notebooks and manuscripts with which he had to work, in editing *Volumes II* and *III*, notes,

“The manuscript chronologically following next is that of Book III. It was written, at least the greater part of it, in 1864 and 1865. Only after this manuscript had been completed in its essential parts did Marx undertake the elaboration of Book I which was published in 1867. I am now getting this manuscript of Book III in shape for press.” (p 3)

Engels had to come back to this issue, in his *Preface to Volume III*, in order to address the claim that Marx had only written *Volume I*, and had had no intention of ever dealing with the questions that arose from it, of how it was that prices diverged from values.

What Engels was presented with, then, was a great mass of these notebooks and manuscripts, which covered material that ultimately appeared as *Volume II* and *III* of *Capital*, and also the three volumes of *Theories of Surplus Value* that Engels intended to publish as *Volume IV* of *Capital*. But, anyone who has written a book can understand the problems that Engels faced in this work. The author, in preparing the material does not work on it in the same linear manner in which it appears; certain parts may be more fully developed than others; the notebooks will contain references as aide memoir, whose meaning and relevance may even leave the author puzzled when they come back to them later. In addition, the same material may appear in different versions of a manuscript, as it is worked and reworked. An editor must be able to discover which version is the one to be used, where the author is not available to present a finally completed document.

As Engels says,

“This is the material for Book II, out of which I was supposed “to make something,” as Marx remarked to his daughter Eleanor shortly before his death. I have construed this task in its narrowest meaning. So far as this was at all possible, I have confined my work to the mere selection of a text from the available variants. I always based my work on the last available edited manuscript, comparing this with the preceding ones.” (p 5)

Engels describes the various notebooks and manuscripts, and when they were written, which gives some further background to the way Marx was proceeding with his study. He also describes where the contents of these documents were to be located in the overall work, and the extent to which what was in them was more or less usable.

“Manuscript IV is an elaboration, ready for press, of Part I and the first chapters of Part II of Book II, and has been used where suitable. Although it was found that this manuscript had been written earlier than Manuscript II, yet, being far more finished in form, it could be used with advantage for the corresponding part of this book. All that was needed was a few addenda from Manuscript II. The latter is the only somewhat complete elaboration of Book II and dates from the year 1870. The notes for the final editing, which I shall mention immediately, say explicitly: “The second elaboration must be used as the basis.”” (p 3)

Engels also deals with a claim, by the German economist Johann Karl Rodbertus, that Marx had stolen his ideas.

*“As far as I know this charge was made for the first time in R. Meyer’s **Emancipationskampf des vierten Standes**, p. 43:” (p 6)*

Rodbertus himself, in 1879, writes to J. Zeller,

““You will find that this” (the line of thought developed in it) “has been very nicely used ... by Marx, without, however, giving me credit for it.”” (p 6)

Rodbertus' most emphatic claim was made in 1881, writing in the *“Briefe und Sozialpolitische Aufsätze von Dr. Rodbertus-Jagetzow”*.

*““To-day I find I have been **robbed** by Schäffle and Marx without having my name mentioned.” (Letter No. 60, p..134.)” (p 6)*

And, elsewhere, Rodbertus writes,

*““In my third social letter I have shown **virtually in the same way** as Marx, only more briefly and clearly, what the **source** of the **surplus-value** of the capitalist is.” (Letter No. 48, p. 111.)” (p 6)*

Marx was unaware of the charges of plagiarism, but was aware of this *Letter No. 48*.

“Dr. Meyer had been so kind as to present the original to the youngest daughter of Marx. When some of the mysterious whispering about the secret source of his criticism having to be sought in Rodbertus reached the ear of Marx, he showed me that letter with the remark that here he had at last authentic information as to what Rodbertus himself claimed; if that was all Rodbertus asserted he, Marx, had no objection, and he could well afford to let Rodbertus enjoy the pleasure of considering his own version the briefer and clearer one. In fact, Marx considered the matter settled by this letter of Rodbertus.” (p 7)

In fact, as Engels sets out, Marx had begun his economic studies in Paris in 1843. He had already developed the outline of his ideas, on the basis of a study of the work of the English and French economists, before giving any attention to German economists, who Marx considered to be lagging behind due to the later development of German capitalism.

Engels points out that long before Marx had even heard of Rodbertus, let alone heard of him as an economist, he had set down his own analysis of surplus value, in *“The Poverty of Philosophy” (1847)*, and in his lectures the same year, in Brussels, on *“Wage Labour and Capital”*. Only in 1859, via Lassalle, did Marx become aware of Rodbertus as an economist. In *“Theories of Surplus Value”*, Marx treats of Rodbertus' ideas, along with those of other economists, and it becomes clear there the extent to which Marx's concept of surplus value differs from that of Rodbertus. It is also clear the extent to which Marx views Rodbertus' ideas as lagging behind those of the English and French economists, even from an earlier period, reflecting, as Marx says, Rodbertus' position as a landowner rather than capitalist farmer.

As Engels puts it,

*“It is our good fortune to be able to state what impression was produced on Marx by this stupendous discovery of Rodbertus. In the manuscript **Zur Kritik**, notebook X, pp. 445 et seqq. we find a “Digression. Herr Rodbertus. A New Ground-Rent Theory.” This is the only point of view from which Marx there looks upon the third social letter. The Rodbertian*

*theory of surplus-value in general is dismissed with the ironical remark: "Mr. Rodbertus first analyses the state of affairs in a country where property in land and property in capital are not separated and then arrives at the **important** conclusion that rent (by which he means the entire surplus-value) is only equal to the unpaid labour or to the quantity of products in which this labour is expressed."* (p 8)

Engels gives a quick resume of the history of theories of surplus value. Surplus value had been produced for several centuries, and the first explanations of it understandably flowed from its most obvious manifestation as commercial profit. It appeared that surplus value was merely a charge placed upon the value of commodities when they were sold. That indeed was what the merchant did, buying at one price, and selling at a higher price.

This formed the basis of the *Mercantilist* explanation of surplus value. But, James Steuart recognised that this "*profit on alienation*" could explain the profit of individual capitals, but could not explain the existence of profit itself overall. What one capital gained by adding an amount to the cost price of commodities it sold, it would lose when it bought other commodities whose prices had been similarly inflated by other sellers.

"Nevertheless, this view persisted for a long time afterwards, especially among the Socialists. But it was thrust out of classical science by Adam Smith." (p 9)

The idea has been resurrected by Stalinists and Third Worldists in developing theories of unequal exchange and super exploitation, as part of analyses of imperialism described as systems of dependency, or centre-periphery. Such theories are generally founded upon a moralistic critique of "*imperialist*" states, rather than sound Marxist economic theory. Faced with the continued strong growth of the advanced capitalist economies, Stalinist economists tried to explain it, when they had been insisting that capitalism had reached its limits, by claiming that the growth came from a "*super-exploitation*" of poor countries, and a transfer of surplus value from this periphery into the metropolitan centres.

Engels does not draw out the point here that Marx does, in *Theories of Surplus Value*, that the first to properly understand the source of surplus value, as arising in production, were the *Physiocrats*. They did so, because they were studying capitalist production in agriculture. On this basis, it was obvious to them that the process of social reproduction commences with the final production, i.e. the harvest of the previous year. That harvest provides all of the seed to be used, in the current year (*constant capital*), and it provides the stocks of food that can be used to feed the workers, as they produce in the current year (*variable-capital*).

Out of this year's production, therefore, the seed consumed to grow this year's crops must be physically replaced, on a like for like basis. Similarly, the food consumed by the workers must also be physically replaced. Whatever is produced in excess of this is then a surplus product, constituting a surplus value.

The limitation of the *Physiocrats* theory was that they viewed value as use value, i.e. it was the surplus product, which they viewed as the surplus value. Moreover, they assumed that the source of this surplus product was the fertility of the soil, and this view was strengthened by the fact that a greater surplus product arises wherever the soil is most fertile. On the basis of this, they concluded that, as it was the land that produced this surplus, the owner of the land was the rightful owner of the surplus, extracted as rent.

Adam Smith used the insight provided by the *Physiocrats'* understanding that surplus value is created in production. But, Smith understood that value is labour. He was able, therefore, to see that a certain amount of labour-time is required to produce the use values required

to reproduce the worker, but that any labour-time undertaken by the labourer beyond that, therefore, constitutes a surplus value.

*“He says in the **Wealth of Nations**, Vol. I, Ch. VI:*

*“As soon as stock has accumulated in the hands of particular persons, some of them will naturally employ it in setting to work industrious people, whom they will supply with materials and subsistence, in order to make a **profit** by the sale of their work, or by **what their labour adds to the value of the materials**.... The value which the workmen **add to the materials**, therefore, resolves itself in this case into **two parts**, of which the one pays **their wages**, the other the **profits of their employer** upon the whole stock of materials and wages which he advanced.”* (p 9)

Engels quotes Marx from what became *Theories of Surplus Value*.

*“Thus Adam Smith conceives **surplus-value** — that is, surplus-labour, the excess of labour performed and realised in the commodity over and above the paid labour, the labour which has received its equivalent in the wages — as the **general category**, of which profit in the strict sense and rent of land are merely branches.”* (p 9)

Smith recognised that not only does land become monopolised in the hands of landlords, but increasingly the means of production and consumption become concentrated in the hands of a class of rich peasants, who become capitalist farmers. This is the process of differentiation of the peasantry that Lenin describes, in detail, in *“The Development of Capitalism In Russia”*.

On this basis, the small peasant can only work as a day labourer for the capitalist farmer, who provides them with the means of production, and who pays them wages from their stock of means of consumption. But, in consequence, the day labourer then has to provide an amount of unpaid labour to the capitalist farmer. It is this which constitutes the surplus value, out of which the farmer takes their profit, after paying rent to the landlord.

As Marx describes in *Theories of Surplus Value*, there are problems with Smith's theory of value and surplus value, but the point is that Smith had a theory of surplus value that Marx analysed, long before Rodbertus had any such theory.

One problem of Smith's theory of surplus value is that he does not actually recognise it as a theory of surplus value, as such, as opposed to being a theory of profit or rent. For Marx, the understanding of surplus value is primary, and the division of this surplus value into profit of enterprise, rent and interest is a secondary matter, which occurs according to a number of other laws, which determine the relation of these various revenues, and the classes that derive from them.

This same problem exists with Ricardo, who develops Smith's theory more thoroughly. Ricardo does not even enquire into the source of surplus value, but simply takes as read its existence in the form of an average rate of profit. On that basis, and on the basis of the existence of surplus profits, in excess of this average, he develops his theory of *Differential Rent*.

““Nevertheless,” Marx continues, “he [Adam Smith] does not distinguish surplus-value as such as a category on its own, distinct from the specific forms it assumes in profit and rent. This is the source of much error and inadequacy in his inquiry, and of even more in the work of Ricardo.” (p 10)

And, Rodbertus is guilty of all these errors. Firstly, his theory of surplus value is nothing more than the sum of profit and rent. Like Ricardo, he does not enquire into the source of profit, but merely assumes its existence. Finally, as will be seen later, in *Theories of Surplus Value, Part II*, Rodbertus' theory of rent is completely wrong. As Marx points out, it derives from the perspective of pre-capitalist agricultural production. Rodbertus argues that because manufacturers buy raw materials from agricultural producers, this cost enters their cost of production, and affects their rate of profit. But, he says, agricultural producers replace their raw materials directly from their own output, so that this does not represent a cost of production. As a result, he says, the latter make higher profits, and a higher rate of profit, and its from this that the rent is paid.

But, this is completely wrong. Firstly, although its true that the agricultural producer replaces their raw material – seed, livestock etc. - directly from their own production, this does not mean that it does not represent a cost of production. Had the farmer sold this output, they would have received an equivalent value from it. Capitalist farmers frequently do buy their seed from a seed merchant, quality livestock for breeding and so on.

Adam Smith was wrong to think that all of this resolved into revenue. It doesn't. That part of constant capital, which is reproduced out of current production forms a revenue for no one. But, it is a cost of production. It is bought out of capital not revenue, and it represents a cost of production precisely because it must be reproduced out of current production.

But, as Marx points out, Rodbertus is wrong on a further count. A machine maker also reproduces a part of their constant capital out of their own production. The same applies to other producers of means of production. Using Rodbertus' argument, the machine maker would have no cost for the machine they make for their own use. And the farmer would then have a higher cost than the machine maker, in relation to the steam engine, the plough and so on they buy from the machine maker.

Ricardo takes over a concept of value from Smith, and develops it, but there is also a flaw in Ricardo's theory. His theory is an embodied labour theory of value. That is, like Smith, he determines the value of commodities on the basis of the labour embodied in them, i.e. used for their production. As Marx points out, there is a problem with such embodied labour theories of value. Firstly, Ricardo does not enquire into the nature of this labour. What Marx demonstrates is that it is not the concrete labour, i.e. the labour of a spinner, weaver and so on embodied in a commodity, or use value, which determines its value, but the amount of abstract labour. Secondly, in determining the value of commodities, as opposed to the value of merely products for direct consumption, it is the amount of socially necessary labour that is determinant, not the labour embodied in the production of any particular commodity, and this amount of socially necessary labour is constantly changing, because social productivity is constantly changing.

So, for example, if I am a peasant producer, producing products for my own consumption, I might spend two hours per day in cultivation of crops, two hours in spinning, two hours weaving, and two hours maintaining equipment. In total, I would have embodied eight hours of labour into my production. For my own purposes, like with Robinson Crusoe, described by Marx in *Capital I*, the only comparison here is my own evaluation of whether I place a higher or lower value on an hour spent say in cultivation compared to say an hour spinning. Does an hour of my agricultural labour represent more abstract labour-time than an hour of my time spinning, or weaving or in maintenance.

Similarly, if I am producing a commodity, say yarn, I can calculate the amount of labour-time I embody in say ten kilos. On this basis, I can determine the individual value of this ten kilos of yarn. But, the value of this yarn is not at all equal to this individual value, or to the

labour embodied within it. This ten kilos of yarn is just one small part of the total amount of yarn thrown on to the market, and it is the socially necessary labour-time required for its production that determines this social value of yarn, not the labour embodied in any particular component of that total social product.

Furthermore, even if we take this total social production, of say 10,000 kilos of yarn, 1,000 hours of social labour may have been embodied in its production, i.e. actually used for its production, but not even this determines its value. The value of a kilo of yarn, and so of this 10,000 kilos is determined not by the labour that was embodied within it during its production, its historic cost, but by the current cost of its reproduction.

So, if a good cotton harvest means that less labour is currently required to reproduce the 10,000 kilos of cotton consumed in the production of the yarn, the value of the yarn, now in the market will fall. If a new spinning machine is introduced, which means that less labour is required to spin cotton into yarn, to reproduce the yarn currently in the market, then the value of that yarn currently in the market, and being sold, will also fall, irrespective of the labour that was actually embodied in its production.

Ricardo failed to make this distinction between concrete and abstract labour, and between embodied labour and socially necessary labour, between the historic cost of production and the current reproduction cost.

However, even on this basis, Ricardo was able to go beyond Smith.

*“This theory of value became the starting-point of all subsequent economic science. From the determination of the value of commodities by the quantity of labour embodied in them he derives the distribution, between the labourers and capitalists, of the quantity of value added by labour to the raw materials, and the division of this value into wages and profit (i.e., here surplus-value). He shows that the value of the commodities remains the same no matter what may be the proportion of these two parts, a law which he holds has but few exceptions. He even establishes a few fundamental laws, although couched in too general terms, on the mutual relations of wages and surplus-value (taken in the form of profit) (Marx, **Das Kapital**, Buch I, Kap. XV, A), and shows that ground-rent is a surplus over and above profit, which under certain circumstances does not accrue.” (p 11)*

All of these ideas that Marx had reviewed, in his own study of political economy, are in advance of Rodbertus.

*“He either remained wholly unfamiliar with the internal contradictions of the Ricardian theory which caused the downfall of that school, or they only misled him into raising utopian demands (his **Zur Erkenntnis**, etc., p. 130) instead of inducing him to find economic solutions.” (p 11)*

As Engels points out, long before Rodbertus, the ideas of Ricardo were being utilised for socialist purposes. Marx had quoted a number of socialist writers, such as Edmonds, Thompson, Hodgskin and many more, in his *“Poverty of Philosophy”* published in 1847, in response to Proudhon. In *Capital I*, Marx also refers to a pamphlet, *“The Source and Remedy of the National Difficulties. A Letter to Lord John Russell”*, London, 1821, which sets out the basic idea of surplus value. Marx comments in relation to it.

*““This little known pamphlet — published at a time when the ‘incredible cobbler’ MacCulloch began to be talked about — represents an essential advance over Ricardo. It directly designates surplus-value, or ‘profit’ in the language of Ricardo (often also **surplus-produce**), or **interest**, as the author of this pamphlet calls it, as **surplus-labour**, the labour which the labourer performs gratuitously, which he performs in excess of that quantity of*

*labour by which the value of his labour-power is replaced, i.e., an equivalent of his wages is produced. It was no more important to reduce value to labour than to reduce **surplus-value**, represented by a surplus-produce, to surplus-labour. This has already been stated by Adam Smith and forms a main factor in Ricardo's analysis. But they did not say so nor fix it anywhere in absolute form.” (p 12-13)*

His criticism of the pamphlet is that, like Smith and Ricardo, instead of talking about the production of surplus value, the author talks only about one form of that surplus value, i.e. interest on capital, just as Smith and Ricardo talk only about profit and rent.

Engels notes that this applies also to Rodbertus who takes the economic categories handed down to him, and rather than discussing surplus value, discusses it only as rent.

“The result of these two mistakes is that he relapses into economic slang, that he does not follow up his advance over Ricardo critically, and that instead he is misled into using his unfinished theory, even before it got rid of its egg-shell, as the basis for a utopia with which, as always, he comes too late.” (p 13)

The economic arguments of Robert Owen were also founded upon the ideas developed by Ricardo. In fact, the basis of social democracy sits ideologically upon Ricardian socialism. Marx describes it in *“Wage Labour and Capital”*, but also develops it in his critique of Ricardo in *Theories of Surplus Value, Part II*. The basic contradiction that Marx describes there is this. The best condition for the advance of labour is when capital is accumulating rapidly. At that point, the demand for labour-power is high, which causes wages to rise. The best condition for capital to be accumulating rapidly is when profits are high. That provides the incentive to accumulate more quickly, and the means to do so. What creates the conditions for profits to be high? It is that wages are low!

And so, Engels says, the claim by Rodbertus that Marx plagiarised his theory of surplus value from him is ridiculous on several grounds. Firstly, a theory of surplus value dates back to Smith and Ricardo, and was being employed by English socialists in the 1820's, predating Rodbertus by more than twenty years. Marx discussed these earlier theories of surplus value, and developed his own theory out of them, again prior to Rodbertus. But, furthermore, Rodbertus own theory of surplus value is actually a theory of rent, and a theory predicated on false assumptions at that.

*“I must admit that I do not write these lines without a certain mortification. I will not make so much of the fact that the anti-capitalist literature of England of the twenties and thirties is so totally unknown in Germany, in spite of Marx's direct references to it even in his **Poverty of Philosophy**, and his repeated quotations from it, as for instance the pamphlet of 1821, Ravenstone, Hodgskin, etc., in Volume I of **Capital**. But it is proof of the grave deterioration of official Political Economy that not only the **Literatus vulgaris**, who clings desperately to the coattails of Rodbertus and “really has not learned anything,” but also the officially and ceremoniously installed professor, who “boasts of his erudition,” has forgotten his classical Political Economy to such an extent that he seriously charges Marx with having purloined things from Rodbertus which may be found even in Adam Smith and Ricardo.” (p 14-15)*

Engels compares Marx's theory of surplus value, and its dramatic effect, to the discovery of oxygen. It was Joseph Priestley who first discovered oxygen, but without realising what he had discovered. Priestley still ascribed to the phlogistic theory of combustion, which argued that there was a substance known as phlogiston, which was an absolute combustible, and which separated from the burning material.

Priestley managed to produce oxygen, which he called “*de-phlogisticated air*” because he believed it was completely free of phlogiston. Later, Scheele also produced oxygen, which he called “*fire-air*”, because he noted that it seemed to disappear whenever anything was burned in it.

*“Priestley and Scheele had produced oxygen without knowing what they had laid their hands on. They “remained prisoners of the” phlogistic “categories as they came down to them.” The element which was destined to upset all phlogistic views and to revolutionise chemistry remained barren in their hands. But Priestley had immediately communicated his discovery to Lavoisier in Paris, and Lavoisier, by means of this discovery, now analysed the entire phlogistic chemistry and came to the conclusion that this new kind of air was a new chemical element, and that combustion was not a case of the mysterious phlogiston **departing** from the burning body, but of this new element **combining** with that body. Thus he was the first to place all chemistry, which in its phlogistic form had stood on its head, squarely on its feet. And although he did not produce oxygen simultaneously and independently of the other two, as he claimed later on, he nevertheless is the real **discoverer** of oxygen vis-à-vis the others who had only **produced** it without knowing **what** they had produced.” (p 15-16)*

Marx here stands in the same relation to his predecessors as did Lavoisier to Priestley and Scheele. Smith and Ricardo, and the *Physiocrats*, all discovered surplus value, and its source in production, but none of them actually realised what they had discovered. Each of them could only understand it within the terms of the categories handed down to them, of profit and rent.

“Others — the Socialists — found that this division was unjust and looked for utopian means of abolishing this injustice. They all remained prisoners of the economic categories as they had come down to them.” (p 16)

But, Marx starts from an understanding of what surplus value is, and how it divides up into other revenues of profit, rent and interest, as well as how it relates to capital and labour. Rather than analysing these relations in the moralistic terms of the earlier socialists, like Sismondi, Marx analyses it in purely objective, scientific terms, including the understanding of how it also makes possible the accumulation of capital, and the transformation of the means of production, as the basis for Socialism.

He sets that out in *Theories of Surplus Value, Part II*, where he describes the similar scientific method of Ricardo.

*“Ricardo, rightly for his time, regards the capitalist mode of production as the most advantageous for production in general, as the most advantageous for the creation of wealth. He wants **production for the sake of production** and this with **good reason**. To assert, as sentimental opponents of Ricardo’s did, that production as such is not the object, is to forget that production for its own sake means nothing but the development of human productive forces, in other words the **development of the richness of human nature as an end in itself**. To oppose the welfare of the individual to this end, as Sismondi does, is to assert that the development of the species must be **arrested** in order to safeguard the welfare of the individual, so that, for instance, no war may be waged in which at all events some individuals perish. Sismondi is only right as against the economists who **conceal** or deny this contradiction.) Apart from the barrenness of such edifying reflections, they reveal a failure to understand the fact that, although at first the development of the capacities of the **human** species takes place at the cost of the majority of human individuals and even classes, in the end it breaks through this contradiction and coincides with the development of the individual; the higher development of individuality is thus only achieved by a*

*historical process during which individuals are sacrificed for the interests of the species in the human kingdom, as in the animal and plant kingdoms, always assert themselves at the cost of the interests of individuals, because these interests of the species coincide only with the **interests of certain individuals**, and it is this coincidence which constitutes the strength of these privileged individuals.” (Chapter 9)*

In order to arrive at this understanding of what surplus value is, he first had to come to a new understanding of what value itself is. He had to begin with a critique of the existing Ricardian embodied labour theory of value, based upon the historic cost of production, as opposed to the current reproduction cost, based upon socially necessary labour.

*“He had to criticise above all the Ricardian theory of value. Hence he analysed labour’s value-producing property and was the first to ascertain **what** labour it was that produced value, and why and how it did so.” (p 16)*

Marx’s analysis of value moves from the determination of the individual value of the product, through the process by which the product becomes a commodity, as primitive communities begin to trade these products with other communities. As a result of this historical process, not only do products become transformed into commodities, but the value of these products takes the form of exchange values, as the ratio in which each commodity exchanges for others.

He goes on to describe how, as this process continues, one specific commodity becomes separated from all the others, as the commodity against which all the others can be exchanged, a money-commodity, which thereby also becomes the measure of the value of all other commodities.

Having identified what value, exchange-value, and money are, he was then able to identify how money can be transformed into capital. Money hoards can be used to buy labour-power. By identifying labour-power, the ability to perform labour, as distinct from labour itself, the actual act of labour and creation of new value, Marx, at a stroke, resolved the contradiction that confronted Smith and Ricardo, in explaining surplus value.

Labour-power is a use value. It is itself the product of labour and so has a value. Its value is the labour-time required to reproduce the labourer. If this value is less than the new value produced by the labourer, then a surplus value arises.

*“It is not labour which is bought and sold as a commodity, but labour-**power**.” (p 19)*

This surplus value takes different forms in different societies. In primitive communes, it takes the form of a social surplus product, shared by the members of the commune. In slave societies, it takes the form of a surplus product controlled by the slave owner. Under feudalism, it takes the form of feudal rent, as *Labour Rent*, *Rent in Kind*, and *Money Rent*. But, also, any surplus produced by the peasant producer, or artisan, not paid as rent exists as a profit for the producer, which can be accumulated as capital.

Under capitalism, it takes the form of surplus value directly, because what the worker produces is not just a product, but a quantity of new value, exclusively as exchange-value, and what the worker is paid for their labour-power is also an amount of exchange value, i.e. money wages. What is produced is not just a surplus product, but a surplus of exchange value, being the difference between the new value created, and the value of the labour-power which created it.

And, by this means, as Marx uncovers, the way money hoards can thereby employ labour-power, which then undertakes labour which produces a greater quantity of new value, Marx

explains how the capitalist appropriates this surplus value, which, when it is accumulated, becomes capital, and thereby sets in motion a process of social reproduction on an expanding scale. This process of social reproduction thereby not only reproduces capital and labour, but it also reproduces the social relations between them.

But, Marx was able to take this analysis much further than Smith or Ricardo, because where they remained confined within the concepts of fixed and circulating capital, Marx makes the distinction between constant and variable capital, identifying that it is only the variable capital that is responsible for the surplus value. The importance of that is also that Ricardo, in failing to make this distinction, is then led into error in relation to the rate of profit, and the divergence of values from prices.

“He analysed surplus-value further and found its two forms, absolute and relative surplus-value. And he showed that they had played a different, and each time a decisive role, in the historical development of capitalist production. On the basis of this surplus-value he developed the first rational theory of wages we have, and for the first time drew up an outline of the history of capitalist accumulation and an exposition of its historical tendency.”
(p 17)

Engels goes on to criticise the other elements of Rodbertus' work, much of which criticism was already contained in Marx's critique of Proudhon, in *The Poverty of Philosophy*. Rodbertus' explanation of commercial crises, as arising from under-consumption are not as subtle of those of Sismondi, who formed his analysis in terms of the world market. But, these questions, along with others, such as the nature of wages, are resolved by Marx in *Capital*.

The Ricardian School foundered on these two contradictions described earlier. Firstly, by not distinguishing between labour and labour-power, the Ricardians are unable to explain surplus value. If what the worker sells, to the capitalist, is labour rather than labour-power, then the value of the labour that the worker sells must be equal to the value of the labour performed, so that no surplus value can exist – or more correctly, its impossible for the capitalist to appropriate that surplus value.

A peasant producer, may require to work only eight hours, to reproduce their labour-power. If they work for ten hours, they produce two hours of surplus value, but it does not form surplus value for a capitalist, because the peasant does not sell their labour-power to capital. This is always the underlying basis of surplus value, that the “*cost of production*”, in terms of the labour required to produce a product, is greater than the cost of production of the labour-power that produces it. In terms of capitalist production, commodities are sold at their value, and this value is equal to their cost of production, in terms of the labour required for that production. The point is that the cost of production of those commodities *to the capitalist* is less than that, because they only pay for the value of the labour-power, not for the total labour performed.

Secondly, by not distinguishing constant and variable capital, Ricardo is unable to make the distinction that it is only variable capital that produces the surplus value/profit, whereas the rate of profit is calculated on the sum of the constant and variable capital. If the organic composition of capital is high, the amount of profit produced will be low compared to the total capital employed, i.e. the rate of profit will be lower.

Ricardo recognised that capital tends towards the production of a general rate of profit, because it will move away from low profit areas, and into high profit areas. He has no theory to explain why profit amounts to some specific level, but simply assumes a given general rate of profit. Having done so, he places himself in another contradiction, because

he then cannot explain how it is possible for each sphere to obtain this average rate of profit, whilst its commodities exchange at their value.

The solution to this *Transformation Problem*, Engels says, will be provided in *Capital III*, and he taunts Rodbertus' supporters, and others of Marx's critics, therefore, to come forward and provide their solutions to this problem ahead of the publication of *Volume III*.

"In the meantime they had better make haste. The brilliant investigations of the present Book II and their entirely new results in fields hitherto almost untrod are merely introductory to the contents of Book III, which develops the final conclusions of Marx's analysis of the process of social reproduction on a capitalist basis. When this Book III appears, little mention will be made of the economist called Rodbertus.

*The second and third books of **Capital** were to be dedicated as Marx had stated repeatedly, to his wife."* (p 19-20)

Preface To The Second Edition (1893)

In his *1893 Preface* to the second German Edition of *Volume II*, Engels notes the correction of some typographical errors, stylistic improvements and removal of short duplications of material.

He also notes his continued work on getting *Volume III* ready for publication, despite his own declining health.

Chart 1 – The Circuit of Capital and Money

CIRCUITS OF CAPITAL AND MONEY

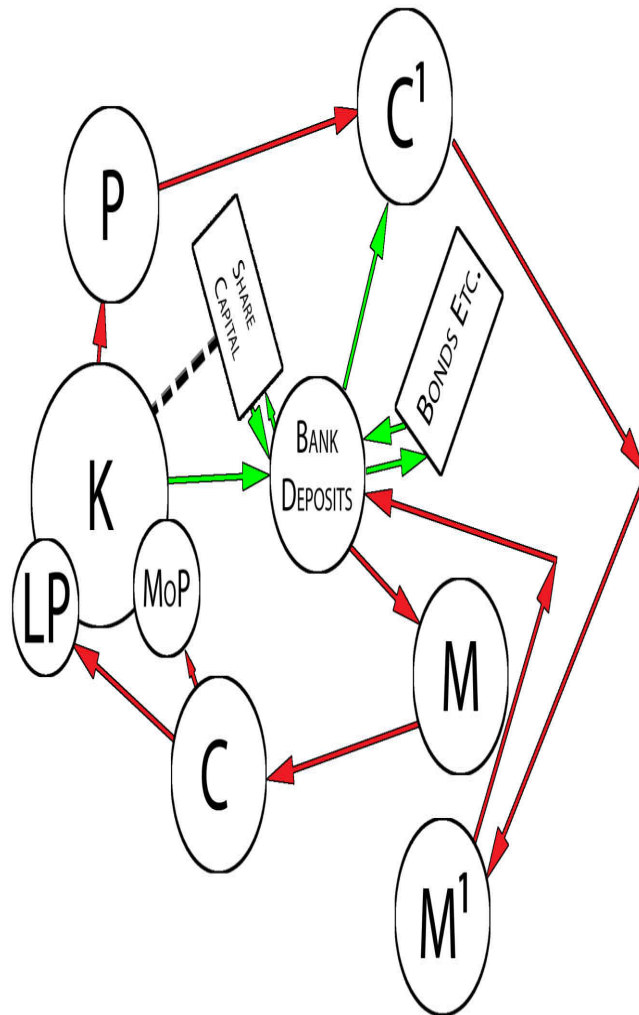


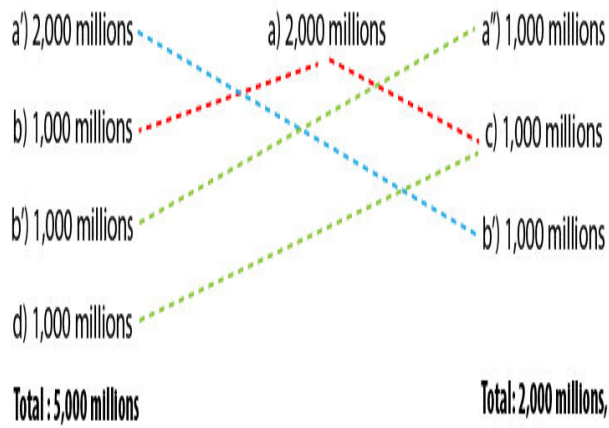
Chart 2 – Quesnay's Tableau Economique

Quesnay's Tableau Economique

In original and annual
advances, the farmers
lay out

In rents, the landlords
receive

The sterile class dis-
poses of a fund of



Part 1

The Metamorphoses of Capital and Their Circuits

Chapter 1 - The Circuit of Money-Capital

1) First Stage. $M - C$.

Marx returns to the circuit of capital arrived at in *Vol. I*, i.e. $M - C \dots P \dots C' - M'$. Here, money-capital [M] is laid out to buy commodities [C], in the form of means of production and labour-power (constant capital and variable capital), which are then consumed in the production process [P]. The labour involved in this process creates surplus value, so that the commodities produced in this process now have a greater value than those which entered it – represented by C' . These commodities are then sold, realising the monetary equivalent of that value M' . This capital is ready to begin its next circuit on an expanded scale. (*Chart 1*).

In *Volume I*, Marx was concerned with analysis of the part of this process in the middle, i.e. the production process, because it is this part of the circuit that explains how capital itself is produced via the accumulation of surplus value. Now he turns his attention to the aspects of circulation of capital, i.e. the forms that capital takes outside the production process. This breaks down into capital as money-capital, and as commodity-capital.

Once again, in order to analyse this, in its purest form, Marx assumes that commodities exchange at their exchange values, and that no change in these values occurs within the circuit (other than that resulting from the production of surplus value).

Looking at this in more detail, we can break down C into L and MP, where [L] = labour power, and [MP] = means of production. So, the first part of the circuit is now $M - C [L + MP]$. But, we also know that, because of the technical composition of capital, L and MP are both quantitatively and qualitatively related.

The capitalist only buys these commodities for the purposes of creating surplus value. If they lay out £1,000 of capital, this has to be divided between L and MP in specific proportions determined by the technical composition of capital, in order for the capitalist to maximise surplus value. Suppose there is a 100% rate of surplus value. So, for every £1 of wages received, the worker produces £1 of surplus value. If the worker works for 2 hours, 1 hour goes to cover their wages, the other to produce surplus value.

If it takes 10 hours to process 100 k. of cotton into yarn, then with a 10 hour working day, one worker will process 100 k. per day. If a day's wage is £10, then a capitalist with £1000 could employ 100 workers, but this would leave no capital left to buy cotton. The capitalist must divide the £1,000 between cotton and workers to maximise surplus value. Suppose cotton costs £10 per 100 k. With £1,000 the capitalist could buy 10,000 k. But then they would have no capital to buy labour power.

If, however, the capitalist buys 5,000 k. of cotton, costing £500, this will require 50 workers to process it = £500 wages. On that basis, all of the available capital is just consumed. No more means of production are bought than can be processed by the 50 workers, and by the same token these workers are kept fully employed throughout the day so that the maximum amount of surplus value is extracted from them.

If less cotton was bought, the workers would not be kept fully employed, so some potential surplus value would be lost. If too much cotton was bought some of it could not be processed, meaning capital was standing idle, and was therefore unproductive.

Once capital has ceased being in its money form, (money-capital) and has taken the form of these commodities (means of production and labour-power) in the above proportions, it has now become productive capital. In other words, it has become capital in another form,

where its potential to reproduce the means of production and labour-power plus an amount of surplus value already exists.

The value of P (productive-capital) is equal to L and MP, which is equal to M. But, once the production process takes place, that potential to expand its value, that was inherent in P is released. The result of the production process – the end commodity (here yarn) – has a higher value than P. The additional value is equal to the surplus value created by the workers. We can now calculate this amount.

We know that the worker was paid £10 for a 10 hour day. But, we also know that the rate of surplus value is 100%. In other words, this £10 actually represents 5 hours labour, the amount required to produce the workers labour-power. So, for every £1 the worker is paid wages, they produce £1 of surplus value. Here £500 was paid in wages, and because the workers were fully employed they produced £500 of surplus value. We now have:

M 1000 – C (L 500 + MP 500) ... P ... C' 1500.

If we take a step back here, we can see that a number of processes of metamorphosis have occurred. Money has been metamorphosed into various commodities – cotton and labour-power. These in turn have metamorphosed into yarn, as a consequence of the production process. But, money-capital has also metamorphosed into productive-capital.

If we look at the initial stage of this process we can see that it is the money form which is the necessary form for capital to begin this circuit, because it is in this form that it is able to purchase means of production and labour-power. It acts here as money in its capacity as means of payment. Labour-power is first bought, but only paid its wages at the end of the day/week/month. Cotton is bought, but only paid for on invoice, i.e. via commercial credit. In other words,

“This capacity is not due to the fact that money-capital is capital but that it is money.” (p 28)

Marx makes an important point here. He writes,

“On the other hand capital-value in the form of money cannot perform any other functions but those of money. What turns the money-functions into functions of capital is the definite role they play in the movement of capital, and therefore also the interrelation of the stage in which these functions are performed with the other stages of the circuit of capital. Take, for instance, the case with which we are here dealing. Money is here converted into commodities the combination of which represents the bodily form of productive capital, and this form already contains latently, potentially, the result of the process of capitalist production.” (p 28)

In other words, money becomes capital by purchasing means of production and labour-power, which *“represents the bodily form of productive capital, and this form already contains latently, potentially, the result of the process of capitalist production.”* But, the value of those same commodities in money form is not capital, it *“cannot perform any other functions but those of money.”*

This is important because it means, for Marx, there can be no question of moving from M - M', without there being some process of production in between, which creates the additional value. Or, more specifically, any such instance can be based only upon unequal exchange. As was seen in *Volume I*, the totality of such unequal exchanges cancel each other out. Moreover, although it is money which buys these commodities, the context in which it does so, as capital, is itself conditioned by the social relations in which this exchange occurs. In order to buy these means of production and labour power, as

commodities, a given set of social conditions must themselves exist. Marx described this, in *Capital I, Chapter 16*, where he discussed the situation of the natives who could live all week for just six hours work harvesting the sago tree. The fact they could do so, and leave the rest of the week free, as leisure time, or else surplus labour, does not, of itself, determine which of these options will be adopted. It is only the development of social relations that ultimately determines that this surplus labour-time will be appropriated by capital.

But, just as the various metamorphoses of money into commodities was described above, so an opposite movement occurs. So, whilst money metamorphosed into labour-power, so labour-power likewise metamorphosed into money. That is the worker sells their labour-power and obtains money, in the form of wages. For the worker, the process is $C - M - C$. They sell their commodity, labour-power, obtain money as wages, which they, in turn, exchange for commodities required to reproduce their labour-power.

At the same time, in order to act as money capital, and buy this labour-power, the money capital itself has to abandon its role as capital, and simply assume the role of money. The wages paid to the worker are in the form merely of money not capital. That conforms with the observation in *Chapter 3, of Volume I*, that in each of these acts of exchange, the commodity exits the circuit, as it is consumed, whereas the money is continually thrown back into circulation.

It is $M - L$ rather than $M - MP$, which is the “*characteristic moment*” in the transformation of money capital into productive capital, because it is only the labour which creates the surplus value. It is the relation between paid and unpaid labour that is again decisive here. Suppose $£1 = 1$ hour of labour-time. If the value of labour-power is $£5 = 5$ hours, then with a 100% rate of surplus value, we have a 10 hour day, with $£5$ of surplus value.

In this 10 hour day, 100 k. of cotton is processed. However, suppose the rate of surplus value rises to 200%, but we still have $£5$ laid out as wages = 5 hours. But, now surplus value rises to $£10 = 10$ hours = 15 hours worked. This could be because of a longer working day, or because the same wage bill now buys more workers. Either way, if 100 k. of cotton is processed in 10 hours then 150 k. will be processed in 15 hours. Consequently the means of production that need to be bought will move up and down in line with the ratio of unpaid to paid labour.

It is the labour-power purchased with the money capital that produces the surplus value, whereas the means of production purchased is determined by the amount of labour power to be exploited.

But, $M - L$ is characteristic of a capitalist relation for another reason. That is because it signifies the payment of money wages, i.e. it signifies the existence of wage labour. This form is, of course, irrational as analysed in *Volume I*. Labour is the value creating substance, and measure of value, and for that reason has no value itself. Nor therefore can any quantity of labour have any value expressed in money. Yet wages appear as precisely that, as a money price for a certain amount of labour. But, in fact, this money price of labour – wages – as was discovered in *Volume I*, is in reality just a disguised form of the value of labour-power, not labour.

“The value produced by this labour-power in, say, six hours of labour is thus expressed as the value of twelve hours’ functioning or operation of the labour-power.” (p 30)

Money from early on appears as a means of payment for all sorts of commodities, i.e. all sorts of use values that possess value. That includes the purchase of services. Yet none of

this signifies a capitalist relation, or the transformation of money into capital. It is only because the worker appears in the market as the owner of the commodity labour-power that signifies that $M - L$ is a capitalist relation, because labour-power does appear as a commodity!

“Once labour-power has come into the market as the commodity of its owner and its sale takes the form of payment for labour, assumes the shape of wages, its purchase and sale is no more startling than the purchase and sale of any other commodity. The characteristic thing is not that the commodity labour-power is purchasable but that labour-power appears as a commodity.” (p 30)

Before the capitalist lays out money for labour-power, however, they must buy means of production, in the form of buildings, machines and raw materials, because these must be present before the worker can begin work.

From the perspective of the worker, his labour-power is unable to produce commodities, for sale, until it is sold to the capitalist and brought into contact with the means of production. Nor is it capable of furnishing the worker directly with the use values he requires to live, because he no longer owns the means of production required to do so.

“But from the moment that as a result of its sale it is brought into connection with means of production, it forms part of the productive capital of its purchaser, the same as the means of production.” (p 31)

Although capitalist and worker confront each other as commodity owners and the purchase of labour-power appears as merely a money relation, in reality it is much more than that. On the one hand, the capitalist confronts the worker as owner of means of production, without which the labour-power cannot be put to work. On the other hand, the worker confronts the capitalist as owner of labour-power, without which the means of production have no value, and cannot be processed.

“The class relation between capitalist and wage-labourer therefore exists, is presupposed from the moment the two face each other in the act $M - L$ ($L - M$ on the part of the labourer). It is a purchase and sale, a money-relation, but a purchase and sale in which the buyer is assumed to be a capitalist and the seller a wage-labourer. And this relation arises out of the fact that the conditions required for the realisation of labour-power, viz., means of subsistence and means of production, are separated from the owner of labour-power, being the property of another.” (p 31)

It is not that the money-capital here buys the commodity labour-power, in its role as means of payment, which marks it out as a capitalist relation. It is only because the worker has been separated from their own means of production that they are led to appear in the market as a seller of labour-power – rather than the products of that labour-power, as say a peasant or artisan would do – and that the capitalist now, as owner of the means of production, can appear as its purchaser. The sale of labour-power, to the capitalist, is the only method the worker now has of reuniting their labour-power with the means of production.

“The capital-relation during the process of production arises only because it is inherent in the act of circulation, in the different fundamental economic conditions in which buyer and seller confront each other, in their class relation. It is not money which by its nature creates this relation; it is rather the existence of this relation which permits of the transformation of a mere money-function into a capital-function.” (p 32)

This can lead to two errors. One assigns to capital what is, in reality, only a function of money. At the same time, what is, in reality, a function of capital, can be mistakenly identified as a function of money. Money, on its own, can only act as a means of payment in all these transactions. Its actual role is determined by the social relations in which this function is performed.

“The purchase and sale of slaves is formally also a purchase and sale of commodities. But money cannot perform this function without the existence of slavery. If slavery exists, then money can be invested in the purchase of slaves. On the other hand the mere possession of money cannot make slavery possible.

In order that the sale of one’s own labour-power (in the form of the sale of one’s own labour or in the form of wages) may constitute not an isolated phenomenon but a socially decisive premise for the production of commodities, in order that money-capital may therefore perform, on a social scale, the above-discussed function $M — C < L_{MP}$, historical processes are assumed by which the original connection of the means of production with labour-power was dissolved — processes in consequence of which the mass of the people, the labourers, have, as non-owners, come face to face with non-labourers as the owners of these means of production. It makes no difference in this case whether the connection before its dissolution was such in form that the labourer, being himself a means of production, belonged to the other means of production or whether he was their owner.” (p 32-3)

Behind this relation lies the distribution of economic resources. The means of production are monopolised in the hands of capitalists, whereas the workers have only their labour-power to sell.

“The means of production, the material part of productive capital, must therefore face the labourer as such, as capital, before the act $M — L$ can become a universal, social one.” (p 33)

As detailed in *Volume I*, this relation is not simply reproduced by capital. The very operation of capitalist production leads to its expansion, reproduces it on an expanded scale, such that more independent producers are deprived of their means of production, then more and more small capitalists join them in the ranks of the workers, and as capital is increasingly centralised and concentrated in the hands of fewer capitalists, and the minimum efficient size of capital increases, so these workers are more and more removed from the possibility of individually owning the means of production.

But, for capital to be able to expand, trade itself must develop to a certain level. There is no point in the capitalist investing in large scale production, which is fundamental for capitalism, and the means by which manufacture and handicraft is undermined, unless there is a sufficient market for those commodities. At the same time, the production of commodities only becomes dominant when capitalism is its basis.

Marx sets out a practical application of this analysis.

“The Russian landowners, who as a result of the so-called emancipation of the peasants are now compelled to carry on agriculture with the help of wage-labourers instead of the forced labour of serfs, complain about two things: First, about the lack of money-capital. They say for instance that comparatively large sums must be paid to wage-labourers before the crops are sold, and just then there is a dearth of ready cash, the prime condition. Capital in the form of money must always be available, particularly for the payment of wages, before production can be carried on capitalistically. But the landowners

may take hope. Everything comes to those who wait, and in due time the industrial capitalist will have at his disposal not alone his own money but also that of others.

The second complaint is more characteristic. It is to the effect that even if one has money, not enough labourers are to be had at any time. The reason is that the Russian farm-labourer, owing to the common ownership of land in the village community, has not yet been fully separated from his means of production and hence is not yet a “free wage-labourer” in the full sense of the word. But the existence of the latter on a social scale is a sine qua non for $M — C$, the conversion of money into commodities, to be able to represent the transformation of money-capital into productive capital.

It is therefore quite clear that the formula for the circuit of money-capital, $M — C \dots C' — M'$, is the matter-of-course form of the circuit of capital only on the basis of already developed capitalist production, because it presupposes the existence of a class of wage-labourers on a social scale.” (p 33-4)

2. Second Stage. Function of Productive Capital

In *Volume I*, I made the comparison of Marx's analysis of value with that of energy and matter, contained in physics. We know that energy and matter are interchangeable. In the beginning, after the Big Bang, there was only energy. Energy runs through everything, it passes from one piece of matter to another, for example, by conduction, convection and radiation. Heat moves from a piece of matter that is hot to one that is cooler and so on. In Marx's analysis, value is very much like energy. It is something which exists in its own right, and which can move from one thing to another, as well as taking a material form, in the same way that, for example, light can be either an energy wave, or a particle, a photon.

In the circulation process, discussed here, this can be seen again.

“By the transformation of money-capital into productive capital the capital-value has acquired a bodily form in which it cannot continue to circulate but must enter into consumption, viz., into productive consumption.” (p 34)

So long as it is circulating, value is like energy, but, in the production process, the circulation of that energy is interrupted. It takes on the material, bodily form of means of production and labour-power, in order to do work. In a way, it is like a flow of electric current. In order to do useful work, the flow has to be interrupted. It is passed through an element to generate heat, or through a motor to generate motion. The result of both, of course, is energy once more – heat energy and kinetic energy.

In the same way, the interruption in the circulation of value, represented by productive-capital, results, via the work it does – production – once again in value, and because of the role of labour in this process, it results in more value emerging from the process than went into it. That, of course, is something which the second law of thermodynamics says cannot, however, happen in respect of energy.

But, just as electric used to do work, for example, requires that the flow of electrons, although interrupted, does continue, so the flow of value, whilst interrupted, by the production process, must also continue. The capitalist is only able to buy means of production because they possess value in its material form – money.

That can only be the case if the money they spend at one end of the process is returned to them at the other end of that process, and for the production process itself to expand, they must get back more money at the end than they spent at the beginning.

“But money can return to him only through the sale of commodities.” (p 35)

The worker, to perform their tasks, needs to eat, and meet all their other requirements on a daily basis, and that requires two things. Firstly, the capitalist must have a ready supply of money to pay them on a frequent basis, so that they have wages to buy these necessities every day. Although today most workers are paid monthly, and into a bank account, that would never have been possible, in the beginning of capitalist production. Workers needed money in hard cash, on a daily basis, or at least weekly, to buy their necessities or they would have starved, been evicted and so on.

Secondly, it requires a well developed supply of the commodities they require for their subsistence. It is no use the worker having wages to spend if there are no shops from which to buy food, clothes etc., and no use having shops if there is no frequent and regular supply of food, clothes etc. to them.

Its rather like today with electric cars. For them to take off two things are needed. Firstly, they must be available in sufficient quantity, but secondly there would need to be sufficient places where they could be recharged etc. Even petrol engine cars would be pretty useless, today, without there being a sufficiently developed network of petrol stations, to refuel them, as and when required.

“When production by means of wage-labour becomes universal, commodity production is bound to be the general form of production. This mode of production, once it is assumed to be general, carries in its wake an ever increasing division of social labour, that is to say an ever growing differentiation of the articles which are produced in the form of commodities by a definite capitalist, ever greater division of complementary processes of production into independent processes. M — MP therefore develops to the same extent as M — L does, that is to say the production of means of production is divorced to that extent from the production of commodities whose means of production they are. And the latter then stand opposed to every producer of commodities which he does not produce but buys for his particular process of production. They come from branches of production which, operated independently, are entirely divorced from his own, enter into his own branch as commodities, and must therefore be bought. The material conditions of commodity production face him more and more as products of other commodity producers, as commodities. And to the same extent the capitalist must assume the role of money-capitalist, in other words there is an increase in the scale on which his capital must assume the functions of money-capital.” (p 35-6)

What Marx is describing here is a very real historical process. It is not an accident that he talks about “**every producer of commodities**” rather than capitalist. He is describing a process of capitalist evolution, in which not every commodity producer is a capitalist, and even the capitalist producers of commodities were frequently themselves still involved in the production process.

But now, for example, even the self-employed hand-loom weaver would buy their wool, yarn etc. rather than take it from their own sheep, grazing on the common land. A potter, like Wedgwood, would find more and more that rather than working as a potter themselves, their function would be as a provider of money-capital, not only to buy the increased quantity of labour-power required for an ever expanding production, but also to buy all these other elements that now were required as means of production, such as steam engines. Before long, that extended on an even greater scale, even outside the factory, as with Wedgwood's joining together with other North Staffordshire industrialists to commission Brindley to construct the Trent and Mersey Canal.

Increasingly, the role of capitalist was to provide money-capital, whereas even the role of entrepreneur, manager etc. became the function of specialist employees. At the same time, the conditions which give rise to capitalist production also act to dissolve the previous modes of production.

They were designed to meet the needs of the producers, and only to sell what happened to be surplus to those needs. Capitalist production is based on selling everything it produces, and produces as much as it can sell! As it proceeds on this basis, it undermines and then overwhelms all previous modes of production.

“Whatever the social form of production, labourers and means of production always remain factors of it. But in a state of separation from each other either of these factors can be such only potentially. For production to go on at all they must unite. The specific manner in which this union is accomplished distinguishes the different economic epochs of the structure of society from one another.” (p 36-7)

As demonstrated in *Volume I*, in examining the labour process, the actual nature of this process is itself determined by capital.

“Every enterprise engaged in commodity production becomes at the same time an enterprise exploiting labour-power. But only the capitalist production of commodities has become an epoch-making mode of exploitation, which, in the course of its historical development, revolutionises, through the organisation of the labour-process and the enormous improvement of technique, the entire structure of society in a manner eclipsing all former epochs.” (p 37)

Means of production and labour-power are the forms of existence of the advanced capital, which is itself materialised value, i.e. capital-value. As capital, they are constant and variable capital. Consequently, when they participate in the process of production, and creation of new value, it is into these components that the new value once more returns, as their material form is reproduced, and it is in these same physical proportions that any surplus value is divided.

On the one hand, however, outside the production process, the means of production continue to be the property of the capitalist, but the worker does not. The means of production are his property to dispose of as he sees fit, but he has only bought the worker's labour power for a certain period of time, and to undertake a certain function.

“The means of production do not become the material forms of productive capital, or productive capital, until labour-power, the personal form of existence of productive capital, is capable of being embodied in them. Human labour-power is by nature no more capital than means of production. They acquire this specific social character only under definite, historically developed conditions, just as only under such conditions the character of money is stamped upon precious metals, or that of money-capital upon money.” (p 37)

In the process of production, the productive-capital, is wholly consumed, as it assumes the form of new commodities, embodying new value. Although it is the labour, which creates the surplus value, contained in these new commodities, that labour is merely the result of the purchase of labour-power by capital. The labour-power, like the means of production was only a component of the productive capital, set in motion by the capitalist.

“Since labour-power acts merely as one of its organs, the excess of the product's value engendered by its surplus-labour over and above the value of productive capital's constituent elements is also the fruit of capital.” (p 37-8)

3. Third Stage. C'-M'

Marx, in this section, gives a classic example of his method where apparently identical things are analysed in their specificity to demonstrate the actual difference between them. In particular, he analyses the category of commodity-capital. What is it that makes 10,000 kilos of yarn commodity-capital rather than just a commodity? It is the same question that can be asked of a sum of money. Why is it, in one case, money-capital, as opposed to being just money, used as a means of payment? Similarly, it could be asked of means of production. Why is it that a machine can, in one case, be just means of production, and in another be productive capital?

The answer is that its real character can only be determined in conjunction with the social relations within which it functions.

“Commodities become commodity-capital as a functional form of existence — stemming directly from the process of production itself — of capital-value which has already produced surplus-value.” (p 38)

For Marx, a machine has to perform the function of a machine whether it does so in a slave society, peasant society, capitalist society, or communist society. It is, after all, a machine, and that is its function. But, Marx is not a functionalist. For Marx, defining something simply on the basis of the function it performs is trite and superficial. For one thing, that function is, in reality, quite different, in each of these societies, apart from its purely mechanical operation. In one it assists the slave owner in producing a greater surplus product. In another it facilitates the peasant in increasing his productivity, which might mean an ability to pay increased rent, but might also act to cause a differentiation within the ranks of the peasantry. In capitalist society, it raises productivity, lifting the creation of relative surplus value, and of a relative surplus population. In a communist society it is a means of increasing social wealth and of reducing the burden of labour.

“Capital in the form of commodities has to perform the function of commodities. The articles of which capital is composed are produced especially for the market and must be sold, transformed into money, hence go through the process C — M.” (p 38)

In this sense, commodities produced under capitalism have the same function as commodities produced in any other society.

“What is it that makes of this simple act of all commodity circulation at the same time a capital-function? No change that takes place inside of it, neither in the use-character of the commodity — for it passes into the hands of the buyer as an object of use — nor in its value, for this value has not experienced any change of magnitude, but only of form. It first existed in the form of yarn, while now it exists in the form of money. Thus a substantial distinction is evident between the first stage M — C and the last stage C — M. There the advanced money functions as money-capital, because it is transformed by means of the circulation into commodities of a specific use-value. Here the commodities can serve as capital only to the extent that they bring this character with them in ready shape from the process of production before their circulation begins.” (p 38-9)

In other words, what gives these commodities the character of commodity-capital is precisely the fact that they were produced capitalistically. They came out of a capitalist process of production. In that process, they become imbued with surplus value, and these commodities were thereby destined to be converted into their money equivalent whose sole function again is to purchase replacement commodities for those consumed in the production process.

Looking at the production of 10,000 kilos of yarn, we can see that its production begins with a certain amount of money laid out to purchase the means of production and labour-power. The capitalist lays out £372 for constant capital and £50 for variable capital. Using Marx's method from *Volume I*, both of these amounts can be equated to a given amount of yarn, i.e. 8,440 kilos in total.

This is the amount of the commodity-capital C, required to reproduce its components. But, the commodity-capital is not 8,440 kilos, but 10,000 kilos. It is not now C but C+c, i.e. C plus an increment of C equal to 1,560 kilos. A surplus product has arisen in the production process, and this product is equal to the surplus value produced by labour, i.e. £78. C has become C'. The original commodities bought, whose value value was £422 (£372 + 50), equal to 8,440 kilos of yarn, has become 10,000 kilos of yarn, with a value of £500 (£422 + £78 surplus value).

"The 10,000 lbs. of yarn are the bearers of the capital-value expanded, enriched by this surplus-value, and they are so by virtue of being the product of the capitalist process of production. C' expresses a value-relation, the relation of the value of the commodities produced to that of the capital spent on their production, in other words, expresses the fact that its value is composed of capital-value and surplus-value. The 10,000 lbs. of yarn represent commodity capital, C', only because they are a converted form of the productive capital P, hence in a connection which exists originally only in the circuit of this individual capital, or only for the capitalist who produced the yarn with the help of his capital. It is, so to say, only an internal, not an external relation that turns the 10,000 lbs. of yarn in their capacity of vehicles of value into a commodity-capital. They exhibit their capitalist birthmark not in the absolute magnitude of their value but in its relative magnitude, in the magnitude of their value as compared with that possessed by the productive capital embodied in them before it was transformed into commodities." (p 39-40)

This incidentally is an important distinction made by Marx in relation to his method of calculating the rate of profit. Marx here makes clear that it is the relation between the surplus value and the productive capital (P) which is decisive, not the relation to the money originally used to purchase P, i.e. its historic cost.

These 10,000 kilos, when sold at their value of £500, are then indistinguishable from any other yarn, however it was produced. It might have been produced by slave labour, or by a peasant spinning it in their cottage. Yarn produced by any of these means would still have the same exchange value, because the labour-time required for its production remains the same.

"If, then, these 10,000 lbs. of yarn are sold at their value of £500, this act of circulation, considered by itself, is identical with C — M, a mere transformation of an unchanging value from the form of a commodity into that of money. But as a special stage in the circuit of an individual capital, the same act is a realisation of the capital-value embodied in the commodity to the amount of £422 plus the surplus-value, likewise embodied in it, of £78. That is to say it represents C' — M', the transformation of the commodity-capital from its commodity-form into the money form." (p 40)

The commodities must now perform their function and be transformed into money. Unless that happens the circuit cannot continue. New means of production and labour-power cannot be bought to replace those consumed in the previous cycle. The speed with which this conversion occurs then is vital for capital. This concept of the rate of turnover of capital is important, for Marx, in analysing the rate of profit, and the ability of capital to expand. As he says, it means that even small capitals can make big profits and accumulate more quickly, if they are able to turn over quickly, i.e. to go from the stage of purchase of means

of production to sale of commodities in a shorter space of time, compared to a larger capital.

“A given capital-value will serve, in widely different degrees, as a creator of products and value, and the scale of reproduction will be extended or reduced commensurate with the particular speed with which that capital throws off its commodity-form and assumes that of money, or with the rapidity of the sale.” (p 40)

If the capitalist sells less than the 10,000 kilos of yarn, they will not be able to expand their production, and depending on how much they sell, may not even be able to reproduce the means of production and/or labour-power previously consumed, without providing additional capital.

Marx explains the nature of the surplus value once again, to make clear that the fact that the capitalist receives more money back from the market place than he originally threw into it, is not down to some kind of cheating or unequal exchange.

Its true that he threw an amount of money M into the market and took out from it an amount of money equal to $M+m$, but that is because he took out commodities C in return for M , and threw back into the market commodities $C+c$. The additional m he takes out of the market is only to compensate for the additional c he has thrown into it.

“ M was in our example equal to the value of 8,440 lbs. of yarn. But he throws 10,000 lbs. of yarn on the market, consequently he returns a greater value than he took from it. On the other hand he threw this increased value on the market only because through the exploitation of labour-power in the process of production he had created surplus-value (as an aliquot part of the product expressed in surplus-product). It is only by virtue of being the product of this process that the mass of commodities becomes commodity-capital, the bearer of the expanded capital-value.” (p 42)

Of course, each kilo of the 10,000 kilos contains its fraction of the surplus value created. But, the surplus value and the capital-value, contained in the yarn, in reality, go through a different process. For the surplus value, it only came into existence in the production process. It has only ever existed in commodity form, prior to being converted into money. So, it has only gone through $C - M$. But, the capital-value began life as money that bought the commodities that comprised the productive-capital, so it has gone through $M-C...P...C-M$.

“If we therefore consider merely the two circulation phases of capital-value, apart from its surplus-value, we find that it passes through 1) $M - C$ and 2) $C - M$, in which the second C has a different use-form but the same value as the first C . Hence it passes through $M - C - M$, a form of circulation which, because the commodity here changes place twice and in the opposite direction — transformation from money into commodities and from commodities into money — necessitates the return of the value advanced in the form of money to its money-form — its reconversion into money.” (p 43)

Money acts both as the form of value assumed by the original capital value, and as the form of value of the new surplus value. For the former, it is a return to its original form, for the latter, it is its first incarnation.

“Just because the initial and final forms of this process are those of money-capital, M , we call this form of the circulation process the circuit of money-capital. It is not the form but merely the magnitude of the advanced value that is changed at the close.” (p 44)

In the yarn, it was impossible to separate the capital value and surplus value. Each pound contained its aliquot part of surplus value. But, as money that is not so. Now, the £422 of capital value can be easily separated from the £78 of surplus value, and this is significant from the perspective of the capitalist, who may then decide only to reproduce the original capital value, and consume unproductively the £78 of surplus value.

As soon as M was used to purchase productive capital it ceased to be. When the commodity capital, C', is converted into money-capital, M', it has the same form as M, but it is not the same thing.

"In M' capital has returned to its original form M, to its money-form, a form however in which it is materialised as capital.

There is in the first place a difference of quantity. It was M, £422. It is now M', £500, and this difference is expressed by M ... M', the quantitatively different extremes of the circuit, whose movement is indicated only by the three dots. $M' > M$, and $M' - M = s$, the surplus-value. But as a result of this circular movement M ... M' it is only M' which exists now; it is the product in which its process of formation has become extinct. M' now exists by itself, independently of the movement which brought it into existence. That movement is gone; M' is there in its place." (p 44-5)

But, M' stands in a qualitative relation to M also, precisely because it incorporates surplus value.

"M became capital by virtue of its relation to the other part of M', which it has brought about, which has been effected by it as the cause, which is the consequence of it as the ground. Thus M' appears as the sum of values differentiated within itself, functionally (conceptually) distinguished within itself, expressing the capital-relation." (p 45)

The movement from M- M' is comprised of two parts, that representing the capital-value (i.e. the value of the productive capital) and the surplus value. As money, this appears as principal and excess sum, rather like principal and interest. In other words, the source of the excess sum is obliterated in the process of circulation. The additional sum, m, is the monetary equivalent of c, and C – C' appears the same as M – M', but C – C' cannot be separated from the production process, which results in the increase in value.

"The circuit of capital can never begin with M' (although M' now performs the function of M). It can begin only with M, that is to say it can never begin as an expression of the capital-relation, but only as a form of advance of capital-value. As soon as the £500 are once more advanced as capital, in order again to produce s, they constitute a point of departure, not one of return. Instead of a capital of £422, a capital of £500 is now advanced. It is more money than before, more capital-value, but the relation between its two constituent parts has disappeared. In fact a sum of £500 instead of the £422 might originally have served as capital." (p 46)

M has not become M', in this process, because it is money-capital, for example, in the way that a money capitalist lends a principal sum and obtains interest on it. It has become M' only because it is capital, in the money form, a capital that has expanded in value as depicted in C – C', as a consequence of the production process.

"M' is composed of M plus m only because C' was composed of C plus c." (p 47)

Both commodity capital and money capital are forms of existence of capital.

“The specific functions that distinguish them cannot therefore be anything else but differences between the functions of money and of commodities. Commodity-capital, the direct product of the capitalist process of production, is reminiscent of its origin and is therefore more rational and less incomprehensible in form than money-capital, in which every trace of this process has vanished, as in general all special use-forms of commodities disappear in money. It is therefore only when M' itself functions as commodity-capital, when it is the direct product of a productive process instead of being the converted form of this product, that it loses its bizarre form, that is to say, in the production of the money material itself. In the production of gold for instance the formula would be $M - C \xrightarrow{L} MP \dots P \dots M'$ (M plus m), where M' would figure as a commodity product, because P furnishes more gold than was advanced for the elements of production of the gold in the first M, the money-capital. In this case the irrational nature of the expression $M \dots M'$ (M plus m) disappears. Here a part of a sum of money appears as the mother of another part of the same sum of money.” (p 48)

4) The Circuit as a Whole

The circuit of capital is M-C-M'. But, in reality, under capitalist production, this circuit is interrupted after M-C, by P. The commodities bought in the first part of the circuit, M-C, (means of production and labour-power) are consumed in the production process, creating through it a new commodity. In reality, M becomes M', i.e. M plus an additional m, only because, in the production process, C has become C'. That is, this new commodity has greater value than the commodities that went to produce it. It has this additional value because of the surplus labour provided by workers during the production process.

“The circulation series therefore appears as 1) $M - C1$; 2) $C'2 - M'$, where in the second phase of the first commodity, C1, another commodity of greater value and different use-form, C'2, is substituted during the interruption caused by the functioning of P, the production of C' from the elements of C, the forms of existence of productive capital P.” (p 49)

This is different to the first time we encountered the circuit M-C-M' because there – the circuit of merchant capital – money buys a commodity, and this same commodity is then re-sold, but for a greater sum of money. In other words, the merchant made their profit not from the creation of surplus value, as the industrial capitalist does, but from unequal exchange. The merchant either buys the commodity (M-C) below its value, or sells it (C-M) above its value or both. This process of arbitrage – buying and selling in different markets to take advantage of price differences – is how merchant capital obtains its profit. Yet, as was seen in *Volume I*, for the system as a whole, this cannot be the source of profit. For everyone, who gains from an exchange, from such cheating, there is someone else who loses, by the same amount. In the end, profits can only be created, for the system as a whole, if an actual surplus is produced, i.e. the total value of production must be greater than the total value of inputs used to produce it. All the various forms of exchange do then is to determine how the surplus is distributed.

This circuit of capital is also distinguished by the fact that, in each of its stages, capital-value assumes different forms – money-capital, commodity-capital, productive-capital, commodity-capital, money-capital.

*“The capital which assumes these forms in the course of its total circuit and then discards them and in each of them performs the function corresponding to the particular form, is **industrial capital**, industrial here in the sense it comprises every branch of industry run on a capitalist basis.” (p 50)*

All of these three types of capital, therefore, have to be seen not as independent, but only as the forms of industrial capital assumed at successive stages of its circuit.

Marx then describes, on this basis, essentially the three forms in which a capitalist crisis can break out.

“Capital describes its circuit normally only so long as its various phases pass uninterruptedly into one another. If capital stops short in the first phase $M — C$, money-capital assumes the rigid form of a hoard; if it stops in the phase of production, the means of production lie without functioning on the one side, while labour-power remains unemployed on the other; and if capital stops short in the last phase $C' — M'$, piles of unsold commodities accumulate and clog the flow of circulation.” (p 50)

But, capital necessarily is tied up in each of these stages, because it cannot move on to the next stage until it has assumed the necessary form. Money-capital has to buy the commodity-capital ($C1$), (MP and L), before that commodity capital can engage in production, and that production process must take place before the capital value can take the form of the new commodity-capital, ($C2$), and it must take that form before it can be sold.

But, we've seen that not all of the capital-value from one stage is passed on to the next. For example, if £1,000 is laid out for the purchase of a machine, which lasts for 10 years, then only 10% of this £1,000 (£100) is passed on, each year, as wear and tear, into the value of the commodities it produces. So, only £100 of the value of the machine forms part of C' and, therefore, M' . In addition, we have seen that such machines suffer depreciation, and so their value diminishes and this value is not passed on at all into the value of the new commodities. It is a capital loss, which the capitalist must make good themselves, out of their own pocket, the same as if the machine had been stolen or destroyed in a fire.

For the former of these, all that is needed is to take, as the production period, the ten years of the life of the machine. Over that period, its full value will have been passed into C' and thereby recovered in M' . But, that is not so for the latter. Marx returns to how these instances modify the circuit of capital, later.

Marx then also deals with the situation of industrial capital that does not produce some material product. The example he gives is communication. For example, a railway transports people and goods, the Post Office transports letters and parcels. It is not some material commodity that is produced and consumed. What is consumed, in a sense, is the actual process of production itself. The production process is the act of transportation, and it is that which is consumed, whether directly by passengers, or indirectly by those whose goods, letters, parcels etc. are transported.

His initial formulation, I think, is badly worded. He says,

“In the general formula the product P is regarded as a material thing different from the elements of the productive capital, as an object existing apart from the process of production and having a use-form different from that of the elements of production. This is always the case when the result of the productive process assumes the form of a thing, even when a part of the product re-enters the resumed production as one of its elements. Grain for instance serves as seed for its own production, but the product consists only of grain and hence has a shape different from those of related elements such as labour-power, implements, fertiliser. But there are certain independent branches of industry in which the product of the productive process is not a new material product, is not a commodity.” (p 54)

But, a commodity does not have to be a material product, as Marx says elsewhere. For example, Marx gave, in *Volume I*, the example of a schoolteacher, providing education as a commodity.

“If we may take an example from outside the sphere of production of material objects, a schoolmaster is a productive labourer when, in addition to belabouring the heads of his scholars, he works like a horse to enrich the school proprietor. That the latter has laid out his capital in a teaching factory, instead of in a sausage factory, does not alter the relation.”

(Capital I, Chapter 16)

Elsewhere, in discussing productive and unproductive labour, he talks about the labour of an actor being productive, even though it produces no material product.

“These definitions are therefore not derived from the material characteristics of labour (neither from the nature of its product nor from the particular character of the labour as concrete labour), but from the definite social form, the social relations of production, within which the labour is realised. An actor, for example, or even a clown, according to this definition, is a productive labourer if he works in the service of a capitalist (an entrepreneur) to whom he returns more labour than he receives from him in the form of wages; while a jobbing tailor who comes to the capitalist’s house and patches his trousers for him, producing a mere use-value for him, is an unproductive labourer. The former’s labour is exchanged with capital, the latter’s with revenue. The former’s labour produces a surplus-value; in the latter’s, revenue is consumed.”

(Theories Of Surplus Value Part 1, Chapter IV, p 157)

At that time, services formed only a small portion of the total social product, whereas today they form its majority. Marx’s further elaboration demonstrates why services, such as transport, constitute commodities in their own right, and that elaboration makes clear that there is no basis for saying that what is sold is not a commodity. It’s not clear then that Marx really wanted to say that what is produced is not a commodity, or whether he simply wanted to say that it is not a commodity in a material product form. Either way, his analysis of the role of transport, I think is not clear, and possibly not fully formed (remember *Volume II* is compiled from piles of assorted notes by Engels, not by Marx himself). That leads, I believe, to an error later.

“But the exchange-value of this useful effect is determined, like that of any other commodity, by the value of the elements of production (labour-power and means of production) consumed in it plus the surplus-value created by the surplus-labour of the labourers employed in transportation. This useful effect also entertains the very same relations to consumption that other commodities do. If it is consumed individually its value disappears during its consumption; if it is consumed productively so as to constitute by itself a stage in the production of the commodities being transported, its value is transferred as an additional value to the commodity itself. The formula for the transport industry would therefore be $M - C < L_{MP} \dots P - M'$, since it is the process of production itself that is paid for and consumed, not a product separate and distinct from it. Hence this formula has almost the same form as that of the production of precious metals, the only difference being that in this case M' represents the converted form of the useful effect created during the process of production, and not the bodily form of the gold or silver produced in this process and extruded from it.” (p 54)

Marx says this is essentially the same formula as for precious metals, but that was during a time when those precious metals acted as money. Today, the precious metals are sold as

commodities, in return for dollars, as with any other products. But, what Marx's formula here is significant for is the most important area of industrial capital in the modern world – the service industries. In these, it is precisely again the production process itself that is most usually consumed. If, as Marx says, the product is a “*useful effect*” then this product is a use value, in the terms Marx previously defined it. A use value, that has exchange value, i.e. is the product of necessary social labour, undertaken for the purpose of sale, is a commodity, whether it is a physical product or not.

“At first sight a commodity presented itself to us as a complex of two things – use value and exchange value.”

(Capital I, Chapter 1)

It is the performance by a comedian, actor, singer, footballer, musician, dancer and so on, i.e. their production process that is consumed not some physical commodity arising from it. Even when those performances are captured on some form of medium, it is still the performance that is actually being consumed not the physical medium on which it has been captured. The same is true of the production process of a dentist, doctor, teacher, nurse, financial advisor and so on.

“Industrial capital is the only mode of existence of capital in which not only the appropriation of surplus-value, or surplus-product, but simultaneously its creation is a function of capital.” (p 57)

As stated earlier, profit can only arise because a surplus product is created within society. Distribution/exchange then determines how that surplus is appropriated. So, merchant capital might secure profits, but only by securing for itself a share of the surplus product produced by slaves, or peasant producers. It does so by unequal exchange, i.e. it pays the producers of these commodities less than the value of the commodities it buys from them, or else it sells to these same producers commodities above their value.

Money-capitalists are able to make profits in the same way. They lend money to slave owners, or to peasant producers and then receive back from them a greater sum of money.

Provided these actual producers – be they slave owners or peasants – produce a larger surplus product than is taken from them by the merchants and money capitalists, and by other exploiting classes, such as the aristocracy, then they can plough this surplus back into production. When it is not, future production will be curtailed.

That is what happened in the Mediterranean City States, when the merchants and money capitalists bled the peasant producers dry, and thereby prevented the nascent capitalist production from developing.

But, when industrial capital develops, it is the centre of production, it becomes the source of society's surplus production.

“Its existence implies the class antagonism between capitalists and wage-labourers. To the extent that it seizes control of social production, the technique and social organisation of the labour-process are revolutionised and with them the economico-historical type of society. The other kinds of capital, which appeared before industrial capital amid conditions of social production that have receded into the past or are now succumbing, are not only subordinated to it and the mechanism of their functions altered in conformity with it, but move solely with it as their basis, hence live and die, stand and fall with this basis. Money-capital and commodity-capital, so far as they function as vehicles of particular branches of business, side by side with industrial capital, are nothing but modes of existence of the

different functional forms now assumed, now discarded by industrial capital in the sphere of circulation — modes which, due to social division of labour, have attained independent existence and been developed one-sidedly.” (p 57)

If we consider money-capital, it proceeds through the circuit M-C-M', and yet, for the individual money-capitalist, it has its own circuit that can appear as simply M-M'. A capitalist may employ their money-capital in the way previously described. They buy means of production and labour-power, engage in production, creating commodities with a greater value, which they then sell for a larger amount of money than they began with.

But, consider a money-capitalist who provides this money to an industrial capitalist, in the shape of a loan. The money-capital lent goes through exactly the same stages, and results in M', at the end. The industrial capitalist out of $M' - M = m$ now has to pay the money-capitalist the interest on the money they have borrowed. So, they are left with $m-i$ (the interest). But, for the money-capitalist it appears as simply M-M', where $M' - M = I$. It appears to them that their profit has arisen not because of the production process, which created the surplus value, but has arisen simply as a consequence of their lending out their money – their abstinence etc. Yet, their interest, in reality, has the same source, whether it is paid to them by an industrial capitalist, a slave owner or a peasant producer. It is only possible because of a surplus product created in the process of production.

The formula M - C ... P ... C' - M' is the circuit of money-capital, and in it is also expressed the fact that the purpose of production, here, is exchange value not use value. The purpose of production, here, is not to produce more use values per se, which is the purpose of production in all other modes of production. It is to produce more exchange value, and thereby to maximise the surplus exchange value. More use values are produced only because competition forces each capital to do so, in order to produce more exchange value!

The real purpose appears M-M', with production appearing almost as an inconvenient interruption of this movement.

“All nations with a capitalist mode of production are therefore seized periodically by a feverish attempt to make money without the intervention of the process of production.” (p 58)

But, it is precisely the production phase of this circuit which defines it as capitalist, because it is this form of production that is distinctively capitalist.

Yet, it is the fact that the circuit begins with M and ends with M', a greater sum of money, which is most apparent, and which distinguishes the circuit of M from that of C and P.

“And money is the independent, tangible form of existence of value, the value of the product in its independent value-form, in which every trace of the use-value of the commodities has been extinguished. On the other hand the form P ... P does not necessarily become P ... P' (P plus p), and in the form C ... no difference whatever in value is visible between the two extremes. It is therefore characteristic of the formula M — M' that for one thing capital-value is its starting-point and expanded capital-value its point of return, so that the advance of capital-value appears as the means and expanded capital-value as the end of the entire operation; and that for another thing this relation is expressed in money-form, in the independent value-form, hence money-capital as money begetting money. The generation of surplus-value by value is not only expressed as the Alpha and Omega of the process, but explicitly in the form of glittering money.” (p 59)

This circuit is only the circuit of capital, and in M-C-M', it signifies the self-expansion of capital, because the only consumption it represents M-C is productive consumption, the purchase of MP and L, and their consumption in the productive process. It does not include the circuit for the labourer or the capitalist. For the worker, for example, M-C(L) appears as C(L) – M, or the sale of their commodity, labour-power, for money wages, which then becomes M-C, as they spend those wages on commodities for their own consumption. And, for the capitalist, there is a similar circuit, as they take a portion of m – the surplus value – and use it to buy their own commodities for personal consumption.

Yet, the circuit for the worker C(L)-M-C begins within the circuit of capital, i.e. C(L)-M is their sale of labour-power to capital, seen in its circuit as M-C(L). The second part of the circuit for the worker, M-C, is premised by the circuit of capital, because it is necessary for the reproduction process itself, i.e. the worker must buy necessaries, M-C, because, without them, their labour-power is not reproduced, and so the production process cannot continue.

In short, without wages, indeed sufficient wages, and without the food etc. the worker needs to buy with those wages, the workers cannot live, and without workers, capital cannot produce.

By contrast, the means of production, bought at M-C(MP), are only consumed productively. It enters C' , which leaves the circuit, precisely because it is produced for consumption by others.

“Capital’s movement in circuits is therefore the unity of circulation and production; it includes both. Since the two phases M — C and C' — M' are acts of circulation, the circulation of capital is a part of the general circulation of commodities. But as functionally they are definite sections, stages in capital’s circuit, which pertains not only to the sphere of circulation but also to that of production, capital goes through its own circuit in the general circulation of commodities. The general circulation of commodities serves capital in the first stage as a means of assuming that shape in which it can perform the function of productive capital; in the second stage it serves to strip off the commodity-function in which capital cannot renew its circuit; at the same time it opens up to capital the possibility of separating its own circuit from the circulation of the surplus-value that accrued to it.” (p 60-61)

In other words, capitalist *production* is itself only possible on the basis of the circulation, i.e. exchange, of commodities. That is not true of previous modes of production. The peasant did not need there to be a market in order to produce, precisely because the aim of his production was his own consumption.

“M ... M' becomes a special form of the industrial capital circuit when newly active capital is first advanced in the form of money and then withdrawn in the same form, either in passing from one branch of industry to another or in retiring industrial capital from a business. This includes the functioning as capital of the surplus-value first advanced in the form of money, and becomes most evident when surplus-value functions in some other business than the one in which it originated. M ... M' may be the first circuit of a certain capital; it may be the last; it may be regarded as the form of the total social capital; it is the form of capital that is newly invested, either as capital recently accumulated in the form of money, or as some old capital which is entirely transformed into money for the purpose of transfer from one branch of industry to another.” (p 61)

This circuit can only continue, on the basis of capitalist social relations, because the component parts of it – capitalist production, the existence of a class of wage labourers,

who sell their labour-power as a commodity, and means of production themselves, produced and sold as commodities, only exist under capitalism.

Chapter 2 - The Circuit of Productive Capital

“The circuit of productive capital has the general formula $P \dots C' - M' - C \dots P$. It signifies the periodical renewal of the functioning of productive capital, hence its reproduction, or its process of production as a process of reproduction aiming at the self-expansion of value; not only production but a periodical reproduction of surplus-value; the function of industrial capital in its productive form, and this function performed not once but periodically repeated, so that the renewal is determined by the starting-point.” (p 65)

A part of C' may never re-enter into circulation. That is if its never sold $C' - M'$. Instead it is re-used in the same production process. That could be where grain is used for seed, or coal used to power steam engines for pumping out water from a coal mine. If it assumes a money form, in these cases, it is only as money of account, i.e. appearing in the firm's books merely as a paper transaction. Other instances where C' does not re-enter circulation are where a portion of it is directly consumed by the capitalist. For example, a capitalist farmer might consume some of the farm's output.

But, as Marx says, this latter is insignificant. Capitalist production is production on a large scale, for the purpose of sale. The capitalist's own unproductive consumption of their own output necessarily forms a negligible proportion of that, where it features at all.

In the circulation of money-capital $M - C \dots P \dots C' - M'$, P appears as an interruption in the circuit. But, in the circuit of productive-capital, the entire circulation process $M - C$, and $C' - M'$, appear as an interruption to the production process.

“Circulation proper appears but as an instrument promoting the periodically renewed reproduction, rendered continuous by the renewal.

For another thing, the entire circulation presents itself in a form which is the opposite of that which it has in the circuit of money-capital. There it was: $M - C - M$ ($M - C. C - M$), apart from the determination of value; here it is, again apart from the value determination: $C - M - C$ ($C - M. M - C$), i.e., the form of the simple circulation of commodities.” (p 66)

1) Simple Reproduction

In the circuit $M - C - M'$, what we really have is $M - C \dots P \dots C' - M'$, but $C' - M'$ is also really $(C + c) - (M + m)$. Similarly, in the circuit, $P \dots C' - M'$. $M - C \dots P, C' - M'$ is $(C + c) - (M + m)$.

In the former, it was not necessary to ask what the fate of m (the surplus value) was. It could have been consumed by the capitalist, in which case, there is just simple reproduction, or it could have been accumulated as additional capital. It is not necessary to enquire, because the circuit concludes at M' . But, in the circuit $P - P$, it is necessary to know what happens to m , precisely because its fate determines C , i.e. it determines whether C is simply reproduction of its original quantity, or whether it represents expanded capital.

If there is simple reproduction, the capitalist consumes all of the surplus value (m). But, the capital value represented by M continues to circulate. That is, it continues in the above circuit to purchase C . So, M' ($M + m$). $M - C$. Putting figures to it may make it clearer. Suppose the capitalist had £10,000. They bought means of production and labour-power equal to this amount. So, $M - C$. Production takes place, and the workers create a surplus

value of £2,000. So, $C \dots P \dots C'(C+c)$ where c is the surplus value created, represented by a given quantity of the new commodity. These commodities are sold, and this surplus value is then realised as money. So $(C+c) - (M + m)$. The capitalist consumes m , £2,000, whilst M £10,000 goes back into buying (reproducing) the means of production and labour-power, used up in the previous production cycle. So, $M - C$.

$$C' \begin{pmatrix} C \\ + \\ c \end{pmatrix} - M' \begin{pmatrix} M \\ + \\ m \end{pmatrix} - C < \frac{L}{MP} c$$

“m — c represents a series of purchases by means of money which the capitalist spends either for commodities proper or for personal services to his cherished self or family. These purchases are made piecemeal at various times. The money therefore exists temporarily in the form of a supply, or hoard, destined for current consumption, since money whose circulation has been interrupted assumes the form of a hoard. Its function as a medium of circulation, which includes its transient form of a hoard, does not enter the circulation of capital in its money-form M. This money is not advanced but spent.” (p 67)

Just as previously it was assumed that any machines etc. were fully used up in the production process, so its assumed here that all the value created in the production process is equal to the value of the productive capital plus the surplus value. The former has a value of £10,000, the latter £2,000, in the example above.

So, the surplus value can be expressed as a proportion of the productive-capital, $2000/10000 = 20\%$, which means that for any quantity of the end product, say yarn, the surplus value can be expressed as a certain quantity of it. In a kilo of yarn, 200 grams represent surplus value.

Of course, for some commodities, such a division may not be possible. If the end commodity is a machine, a steam locomotive, or a ship, for example, it cannot be so divided, because it only has value in its complete form. Yet, as Marx says, it is common practice, even in such cases, that these commodities can be broken down, certainly as far as advance of stage payments is concerned. Marx cites the example of house building, where payments are advanced as succeeding stages of construction are completed.

With discrete commodities, such as the yarn, it is not necessary that all of the output (say 10,000 kilos) is sold at once. A certain proportion of it may be sold daily, the money received from the sale then being also used to replenish the means of production consumed on a piecemeal basis, as well as to cover daily wages.

The fact remains that, over a period, as the 10,000 kilos are sold, it will have returned both the capital value consumed in its production (£10,000), plus the surplus value (£2,000).

“However that may be, by means of $C' - M'$ both the capital-value and surplus-value contained in C' acquire a separable existence, the existence of different sums of money. In both cases M and m are really a converted form of the value which originally in C' had only a peculiar, an ideal expression as the price of the commodity.” (p 68)

So, here M and m have become separated. M continues to circulate, because it is required to purchase C , in order that production can continue on the same scale. But, m can be either consumed by the capitalist or accumulated. A separate circuit for m , therefore, exists — $m - c - m$.

Within the circuit of productive-capital, $P - P$, we are considering, if m is accumulated $M - C$, then the value of C rises accordingly. Moreover, as discussed in *Volume I*, this increase in value of the capital may also be accompanied by a change in its organic composition.

$C' - M'$ is the second stage of the circuit of productive-capital, $P - P$, and the final stage of the circuit of money-capital, $M - M'$, but is only the first stage of the circuit of commodities. The process of self-expansion of capital has already occurred by C' . $C' - M'$ only represents the realisation of that expanded value. If we assume that we have only simple reproduction, then m separates from M' , and is consumed by the capitalist. In that case, M continues to circulate and purchases C , replacing the means of production and labour-power consumed in the previous production process. We return then to P . The same quantities of means of production and labour-power have been bought, and the production process can resume on the same scale as before.

Because $C - M - C$, and $c - m - c$ now exist as two separate circuits of commodities, the beginning and end values of C and c are the same. This disguises the fact that a surplus value has been created, and also gives rise, Marx says, to the illusion, put forward by vulgar economy, that the purpose of capitalist production is the production of use values for consumption,

“... which the capitalist produces for no other purpose than that of getting in their place commodities with different use-values, or of exchanging them for such...” (p 70)

C' from the beginning is commodity-capital because of the capitalistic process that created it. That c is a fraction of C' , and is consumed unproductively by the capitalist, does not change its origin as the product of surplus labour, obtained by the capitalist unpaid for.

“This c is, by the very nature of its existence, bound to the circuit of capital-value in process and if this circuit begins to stagnate or is otherwise disturbed, not only is the consumption of c restricted or entirely arrested, but also the disposal of that series of commodities which serve to replace c . The same is true when $C' - M'$ ends in failure, or only a part of C' can be sold.” (p 70)

But, c only continues to act as commodity-capital so long as it is attached to C . As soon as c becomes merely part of the circulation of revenue for the capitalist, i.e. $c - m - c$, it leaves the circuit of capital.

“This circulation is connected with the movement of advanced capital inasmuch as the existence of capital presupposes the existence of the capitalist, and his existence is conditioned on his consuming surplus-value.” (p 70)

This distinction between the actual physical commodity, for example yarn, and its existence as capital value, can be seen by looking at the progress of both. The commodity-capital consists of the yarn, which is sold as a commodity to a merchant, and the money-capital form it then assumes is used to purchase commodities, once again, in the form of means of production and labour-power. Yet, the commodity itself, the yarn, may sit in the merchant's store, for some time, before it is actually consumed.

“Hence the real definitive metamorphosis of the mass of commodities thrown into circulation by the capitalist, $C - M$, their final exit into consumption may be completely

separated in time and space from that metamorphosis in which this mass of commodities functions as his commodity-capital. The same metamorphosis which has been accomplished in the circulation of capital still remains to be accomplished in the sphere of the general circulation.

This state of things is not changed a bit if this yarn enters the circuit of some other industrial capital. The general circulation comprises as much the intertwining of the circuits of the various independent fractions of social capital, i.e., the totality of the individual capitals, as the circulation of those values which are not thrown on the market as capital but enter into individual consumption.” (p 71)

In other words, the commodity-capital consisted of yarn. It is not the commodity-capital which is sold, but only the commodity yarn. The commodity-capital is metamorphosed into money-capital, as the yarn is exchanged for the merchant's money. The capital value of the commodity-capital is now in the form of money-capital, in the possession of the yarn producer. For the merchant, they metamorphosed an amount of capital value, in the form of money-capital, into commodity-capital. They no longer own an amount of money-capital, because its money equivalent was exchanged with the yarn producer, but they still retain its capital value, only now in the form of commodity-capital, which comprises a quantity of yarn.

This is another example of how commodity fetishism can lead to confusion. Commodities are not themselves inherently valuable. They do not contain value inside them, for the simple reason that value is labour-time. Commodities only act as means of reflecting labour-time, in the same way that objects do not contain light, but only reflect light-energy. Objects appear red, green, etc. not because they are actually red or green, but only because, due to their composition, they either absorb or reflect red or green light.

The social value of each commodity unit is not the actual amount of labour-time that went into its production (its individual value), because it is different for each (e.g. the Friday afternoon car). Still less is it what was paid for it at some time in the past, i.e. its historic cost, as Adam Smith and Ricardo continued to mistakenly believe, as Marx points out, in *Theories of Surplus Value*. Each individual commodity unit merely acts “as a representative of its class” to use Marx's term, and the value of the class of commodities is equal to the average labour-time required currently for their reproduction. The value of any class of commodities is determined by the law of value, as the proportion of total social labour-time currently required for its reproduction.

But, capital-value is only value as capital. The fact that particular commodities act as commodity-capital, rather than commodities for final consumption does not change matters.

Where m is used for unproductive consumption, it flies out of the circuit of capital, and acts only as coin or currency, not capital. That is so even though the commodities it buys, $m - c$, are the product of some other capital, and so for this other capital appears as $C - M$. Once again, the key here is not to be confused by the physical coin being exchanged, and instead to focus on its actual role as merely means of purchase of commodities rather than capital. M on the other hand continues within the circuit of capital.

“In the second phase $M - C$, the capital-value M , which is equal to P (the value of the productive capital that at this point opens the circuit of industrial capital), is again present, delivered of its surplus-value, therefore having the same magnitude of value as it had in the first stage of the circuit of money-capital $M - C$. In spite of the difference in place the function of the money-capital into which the commodity-capital has now been transformed

is the same: its transformation into MP and L, into means of production and labour-power.”
(p 72)

Once again, its important here to look past the superficial appearances and understand the real underlying relations. As Marx says, here, $M = P$. In other words, the money-capital laid out is equal to the value of the means of production and labour power bought with it.

But, Marx points out that the value of commodities, including those that comprise the commodity-capital here – means of production and labour-power – is determined by the labour-time currently required for their production. This clearly can and does change in the period after they have been bought, $M - C$, and when they enter production, $C \dots P$, or else become the new commodity, $P \dots C'$, or else are sold, $C' - M'$.

In this case, Marx says, whatever was paid for them originally is irrelevant. These commodities do not inherently possess value, individually, but are merely instances of their class, which manifest the labour-time required for their production. All commodities then, wherever they are in the circuit $C - M'$, are revalued according to their current value, along with all other instances of their class. Its a sort of value equivalent of quantum entanglement, except all units of the class are entangled rather than just pairs.

But, historic cost theories of value insist this cannot change the value of the money-capital that was initially laid out at $M - C$. It may be true that the value of the money has not changed, but it is not true that its exchange value has not changed! Let us assume that money is denominated in gold coins. Assume 100 coins comprise the money-capital, and buy 50 units of means of production, and 50 units of labour-power. Suppose, it requires 1000 hours to produce the 100 coins. By that token, it takes 500 hours to produce the means of production, and the same for labour-power. That is the value of 100 ounces gold = 1000 hours. The value of 100 units of means of production = 1000 hours, and the value of 100 units of labour-power = 1000 hours.

Provided productivity in gold production does not change, the value of gold coins will remain constant. But, exchange value is the value of one commodity expressed as a quantity of some other use value. The exchange value of 1 gold coin is 1 unit of means of production, and also 1 unit of labour-power. Using Marx's value form, money – here gold – usually stands in the position of the universal equivalent form of value, i.e. a certain quantity of it expresses the exchange value of some other commodity.

If the value of means of production falls, this will then be reflected in its exchange value against money, i.e. its price. Say it halves. In that case, 2 units of means of production = 1 ounce gold. But, it is tautologically true that this same relation means that the exchange value of gold has now doubled expressed in means of production. Now using Marx's value form, 1 ounce of gold = 2 units of means of production.

Consequently, Marx's method, which insists on using values is more a reflection of real relations than the historic cost models, which fail to account for changes in the exchange value of money, and thereby money-capital.

The circuit of the commodity capital is then $C - M - C (MP + L)$, and where it is accumulated $c - m - c (MP + L)$. In other words, the capital-value of the produced commodities $P \dots C'$, is separated into C and c . C has the same value as the means of production and labour-power that was consumed in its production. But, it also now has the same value as the same quantity of means of production and labour-power previously consumed. That can only happen if as described above, the exchange values of commodities are defined as Marx does, by their current reproduction costs.

Similarly, $c - m - c$ ($MP + L$) ensures that the quantity of additional means of production and labour-power is proportional to C ($MP + L$).

“First: Money-capital M appeared in Form I (circuit $M \dots M'$) as the original form in which capital-value is advanced; it appears here from the outset as a part of that sum of money into which commodity-capital transformed itself in the first circulation phase $C' - M'$, therefore from the outset as the transformation of P , the productive capital, through the medium of the sale of commodities, into the money-form. Money-capital exists here from the outset as that form of capital-value which is neither its original nor its final one, since the phase $M - C$, which concludes the phase $C - M$, can only be performed by again discarding the money-form. Therefore that part of $M - C$ which is at the same time $M - L$ appears now no longer as a mere advance of money by the purchase of labour-power, but as an advance by means of which the same 1,000 lbs. of yarn, valued at £50, which form a part of the commodity-value created by labour-power, are advanced to labour-power in the form of money.” (p 72)

Does this mean that the actual prices paid for any of these commodities is equal to their exchange value (even leaving aside the issue of price of production and market price)? Clearly not, because, in the real world, things are not so straightforward. But, that does not change the underlying value relations and value analysis. For example, Marx writes,

“As a result of $C - M$, money is always the expression of past labour. If the complementary act $M - C$ takes place at once in the commodity-market, i.e., M is given in return for commodities existing in the market, this is again a transformation of past labour, from one form (money) into another form (commodities). But $M - C$ differs in the matter of time from $C - M$. They may exceptionally take place at the same time, for instance when the capitalist who performs $M - C$ and the capitalist to whom this act means $C - M$ ship their commodities to each other at the same time and M is used only to square the balance. The difference in time between the performance of $M - C$ and $C - M$ may be more or less considerable.” (p 73)

This can be one of those points in the circuit of capital, where a breakdown occurs, and which leads to a crisis. Engels comments, in *Volume III*, that the speeding up of transports and other communications, was one means by which the potential and severity of such crises had been reduced. I discussed this in my book – *Marx and Engels' Theories of Crisis – Understanding the Coming Storm*.

Marx continues,

“Although M , as the result of $C - M$, represents past labour, it may, in the act $M - C$, represent the converted form of commodities which are not as yet in the market, but will be thrown upon it in the future, since $M - C$ need not take place until C has been produced anew. M may likewise stand for commodities which are produced simultaneously with the C whose money-expression it is. For instance in the exchange $M - C$ (purchase of means of production) coal may be bought before it has been mined. In so far as m figures as an accumulation of money, is not spent as revenue, it may stand for cotton which will not be produced until the following year.”

This is one reason that futures markets were introduced, so that the risk of widely varying prices for buyers and sellers could be spread.

“The same holds good on spending the revenue of the capitalist, $m - c$. It also applies to wages, to L equal to £50. This money is not only the money-form of past labour of the labourers but at the same time a draft on simultaneous and future labour which is just

being realised or should be realised in the future. The labourer may buy with his wages a coat which will not be made until the following week. This applies especially to the vast number of necessary means of subsistence which must be consumed almost as soon as they have been produced to prevent spoilage. Thus the labourer receives, in the money which is paid to him in wages, the converted form of his own future labour or that of other labourers. By giving the labourer a part of his past labour, the capitalist gives him a draft on his own future labour. It is the labourer's own simultaneous or future labour that constitutes the not yet existing supply out of which he will be paid for his past labour. In this case the idea of hoarding disappears altogether.” (p 73-4)

In fact, this is most clear in relation to labour-power. As Marx demonstrated in *Volume I*, the value of labour-power, as with any commodity is determined by its current reproduction cost. The money price of labour-power is wages. But, does this mean that wages are always equal to the value of labour-power? Clearly not. Employers may reduce wages below the value of labour-power for a time. But, also, Marx explains how, where workers are employed on piece rates, a rise in productivity can result in workers being paid wages above the value of their labour-power, because if piece rates remain the same, and they produce more pieces, their wages will rise. But, none of that changes the value of labour-power or the value relations springing from it.

The money in $C - M - C$ changes hands twice, once into the hands of the capitalist in selling his commodities, and secondly out of his hands, when he buys means of production and labour-power. Money-capital has only a transient role, acting as a means of circulation. But, it can act as merely means of payment where capitalists trade between each other, and the money merely makes up the outstanding balance of payments.

“Thirdly, the function of money-capital, whether it is a mere circulating medium or a paying medium, effects only the replacement of C by L and MP, i.e., the replacement of the yarn, the commodity which represents the result of the productive capital (after deducting the surplus-value to be used as revenue), by its elements of production, in other words, the retransformation of capital-value from its form as a commodity into the elements that build this commodity. In the last analysis, the function of money-capital promotes only the retransformation of commodity-capital into productive capital.” (p 74)

Marx once again here outlines the role of changes in the value of these components.

“In order that the circuit may be completed normally, C' must be sold at its value and in its entirety. Furthermore $C - M - C$ includes not merely replacement of one commodity by another, but replacement with value-relations remaining the same. We assume that this takes place here. As a matter of fact, however, the value of the means of production vary. It is precisely capitalist production to which continuous change of value-relations is peculiar, if only because of the ever changing productivity of labour that characterises this mode of production. This change in the value of the elements of production will be discussed later on, [See Section V of Chapter XV of this volume. — Ed.] and we merely mention it here.” (p 74)

Marx also deals with the consequences of both changes in the value and merely market price of inputs, in *Chapter 6 of Volume III*. He also comes back to those consequences in *Chapter 15 of Volume III*, and he deals with it at length in *Theories of Surplus Value*, in setting out his theories of crisis. In *Chapter 15* he sets out clearly the difference between the production and the realisation of surplus value, and why the conditions for one may be antithetical to the other. In short that can come down to the role of the elasticity of demand, which Marx discusses in *Theories of Surplus Value*. Different degrees of productivity growth in different spheres means that even where value production increases by the same

amount, this value is represented by widely diverging masses of use values, which leads to a disproportion.

The fact that demand itself under capitalism is a demand heavily distorted by grotesquely divergent revenues – wages, profit of enterprise, interest, rent – which themselves flow from capitalist productive relations, results in conditions under which the production and realisation of surplus value takes place under quite different circumstances.

“The transformation of the elements of production into commodity-products, of P into C', takes place in the sphere of production, while the transformation from C' into P occurs in the sphere of circulation. It is brought about by a simple metamorphosis of commodities, but its content is a phase in the process of reproduction, regarded as a whole. C — M — C, being a form of circulation of capital, involves a functionally determined exchange of matter. The transformation C — M — C requires further that C should be equal to the elements of production of the commodity-quantum C', and that these elements should retain their original value-relations to one another. It is therefore assumed that the commodities are not only bought at their respective values, but also do not undergo any change of value during the circular movement. Otherwise this process cannot run normally.” (p 74-5)

Marx here refers forward to *Section 5 of Chapter 15*, where these effects of price changes are dealt with, though they are dealt with more extensively in *Volume III*.

Marx also restates the argument he made earlier that money-capital fulfils its function in purchasing means of production and labour-power, not because it is capital, but because it is money. And,

“So long as it remains in the garb of money, it does not function as capital and its value does not therefore expand.” (p 75)

He also repeats the point made earlier about the various points at which this circulation could be frustrated. The elements of commodity-capital may not be sold, but also money-capital might find that means of production and labour-power are not available to be bought.

“But there is this difference: It can remain longer in the money-form than in the transitory form of commodities. It does not cease to be money, if it does not perform the functions of money-capital; but it does cease to be a commodity, or a use-value in general, if it is delayed too long in the exercise of its function of commodity-capital. Furthermore, in its money-form it is capable of assuming another form in the place of its original one of productive capital while it cannot budge at all if held in the form of C'.” (p 75-6)

In other words, in the phase C' – M' – C, C is ideally reproduced as a part of C'(C + c), by being metamorphosed into money, M, as part of M'. But, the actual reproduction, C, i.e. M – C, is dependent on C being available.

“This however is conditioned on processes of reproduction which lie outside of the process of reproduction of the individual capital represented by C'.” (p 76)

The first transformation of money into means of production and labour-power is the preparatory stage to its transformation into productive capital. The transformation of commodity-capital, into money-capital, and this second transformation of money-capital into means of production and labour-power is really the re-transformation of the commodity-capital into the productive-capital that was its original source, and is in reality a reproduction of that productive capital.

“The quantity of commodities created in masses by capitalist production depends on the scale of production and on the need for constantly expanding this production, and not on a predestined circle of supply and demand, on wants that have to be satisfied. Mass production can have no other direct buyer, apart from other industrial capitalists, than the wholesaler. Within certain limits, the process of reproduction may take place on the same or on an increased scale even when the commodities expelled from it did not really enter individual or productive consumption.” (p 77)

It is this fact that the consumption of commodities takes place outside the circuit of capital, that means that this circuit may not be completed. The commodities produced may not find an ultimate consumer, the labour-time expended on their production was not socially necessary, and, therefore, the productive-capital (means of production and labour-power) used for their production was over accumulated, and was in reality, therefore, not capital at all, i.e. was not self-expanding value.

As Marx describes it,

“So long as the product is sold, everything is taking its regular course from the standpoint of the capitalist producer. The circuit of capital-value he is identified with is not interrupted. And if this process is expanded — which includes increased productive consumption of the means of production — this reproduction of capital may be accompanied by increased individual consumption (hence demand) on the part of the labourers, since this process is initiated and effected by productive consumption. Thus the production of surplus-value, and with it the individual consumption of the capitalist, may increase, the entire process of reproduction may be in a flourishing condition, and yet a large part of the commodities may have entered into consumption only apparently, while in reality they may still remain unsold in the hands of dealers, may in fact still be lying in the market.” (p 78)

As described earlier, this was a greater problem when it took months to send commodities from Britain to India, China and so on. But, as Marx and Engels describe in *Volume III*, the problem is also exacerbated by credit. At the time they were writing, they were really only discussing the role of commercial and bank credit, but in the latter part of the last century, it was the role of consumer credit, and the huge growth of household debt that enabled production to go on way beyond these limits, as wages remained constant, but there was an ever growing need to sell more and more commodities. It had an early tremor forewarning of the longer-term consequences, as the global financial crisis of 2008 erupted, emanating in the sub-prime crisis that showed that millions of houses had been sold only fictitiously, as a result of the issuing of such credit. However, that was only a minor indication of the real crisis to come, and whose ferocity will have been enhanced by the policies of money-printing, even laxer credit, and a consequent even greater build up of household debt, matched by a further astronomical inflation of asset prices.

“Now one stream of commodities follows another, and finally it is discovered that the previous streams had been absorbed only apparently by consumption. The commodity-capitals compete with one another for a place in the market. Late-comers, to sell at all, sell at lower prices. The former streams have not yet been disposed of when payment for them falls due. Their owners must declare their insolvency or sell at any price to meet their obligations. This sale has nothing whatever to do with the actual state of the demand. It only concerns the demand for payment, the pressing necessity of transforming commodities into money. Then a crisis breaks out. It becomes visible not in the direct decrease of consumer demand, the demand for individual consumption, but in the decrease of exchanges of capital for capital, of the reproductive process of capital.” (p 78)

What Marx says here about “*This sale has nothing whatever to do with the actual state of the demand*” is important. Marx is not saying that this situation arises due to an inadequacy of demand, or under consumption. This situation can arise even if demand remains constant or even rises! In fact, as Marx describes elsewhere, a crisis may arise precisely at a time when wages are rising, and consumption along with it. As he says here, “*this reproduction of capital may be accompanied by increased individual consumption (hence demand) on the part of the labourers*” as well as the capitalist. The point is, as Marx again describes elsewhere, consumers only have a certain requirement for any particular commodity, and once it is satisfied, they have no need for more. In fact, the more wages and living standards have risen, the more likely it is that workers have reached that stage for a greater number of commodities. If the price of these commodities falls, they may or may not buy more of it. The example Marx gives elsewhere is of knives.

“The same value can be embodied in very different quantities [of commodities]. But the use-value—consumption—depends not on value, but on the quantity. It is quite unintelligible why I should buy six knives because I can get them for the same price that I previously paid for one.”

(Theories of Surplus Value Part 3, Chapter XX, p 118-9)

If wages rise, workers may buy more, but not proportionately more, if their wages rise further. To use the terminology of orthodox economics, beyond a certain level, consumers would experience diminishing marginal utility, from additional purchases of such goods. Demand for them would become inelastic so that even large reductions in their prices bring about only small increases in demand and revenue, or may even result in falling revenue.

This can be the cause of what Marx calls a partial crisis of overproduction. That is more of some particular commodity has been produced than can be sold, at prices that enable the capital used in its production to be reproduced. It means that capital has been misallocated. It is then one form of what Marx calls a crisis of disproportion, i.e. capital has been allocated in the wrong proportions across the economy according to the requirements of the law of value. The more capital raises its productive power, the more it accumulates, the more likely it is that such a crisis will occur, because the level of production will continue to increase inexorably, thereby exceeding the ability of the market to consume it. Elsewhere, Marx describes the crisis of the 1840's, for example, where British textile production rose so much that it flooded world markets with its products. It took three years, before all of the excess production sitting in the market could be cleared.

But, its also possible that such a crisis may arise, not just for one or several commodities/industries, but for all or a large number of commodities. Then a generalised crisis of overproduction occurs. Partial crises can be corrected by reallocating capital, but generalised crises cannot, because there is nowhere for it to be reallocated to. Generalised crises are more frequent and prolonged during periods of long wave downturn, particularly its Autumn phase, precisely because during such periods, there is a lack of a range of new types of commodity into which capital can be allocated.

The consequence of this failure of the circuit to complete is that money-capital is then not wholly thrown back into the production process. It might be that it is only a portion of m , i.e. of the surplus value, so that expansion is reduced, or it may be that a portion of M itself is withheld representing an actual contraction. The latter can transform a partial crisis into a generalised crisis, precisely because it does mean that then the level of aggregate demand in the economy is reduced.

Under these circumstances, the money-capital not thrown back in assumes the form of a hoard. In fact, if we look at the current situation that is what we see. Firms continue to make large profits, demand continues to rise, but only modestly outside China and other rapidly growing economies. There is no point then in firms throwing back all of these large profits into increased production that could not be sold, which is why that money-capital has built up in large money hoards on balance sheets, in bank deposits, and sovereign wealth funds, also contributing to low interest rates via financial repression. But, also, the large capital gains to be made from financial speculation, fuelled by QE, incentivises the representatives of money-lending capital, to use profits for such speculation rather than productive-investment, which slows accumulation, and the potential growth of aggregate demand.

“This part is only temporarily withheld from circulation, in order to go into action, perform its function, in due time. This storing of it is then in its turn a function determined by its circulation and intended for circulation. Its existence as a fund for purchase and payment, the suspension of its movement, the interrupted state of its circulation, will then constitute a state in which money exercises one of its functions as money-capital. As money-capital; for in this case the money temporarily remaining at rest is itself a part of money-capital M (of M' minus m, equal to M), of that portion of the value of commodity-capital which is equal to P, to that value of productive capital from which the circuit starts. On the other hand all money withdrawn from circulation has the form of a hoard. Money in the form of a hoard therefore becomes here a function of money-capital, just as in $M - C$ the function of money as a means of purchase or payment becomes a function of money-capital. This is so because capital-value exists here in the form of money, because the money state here is a state in which industrial capital finds itself at one of its stages and which is prescribed by the interconnections within the circuit. At the same time it is here proved true once more that money-capital within the circuit of industrial capital performs no other functions than those of money and that these money-functions assume the significance of capital-functions only by virtue of their interconnections with the other stages of this circuit.” (p 78-9)

M does not become transformed into M' as a result of being money-capital, but only because commodity-capital has been transformed from C to C', that is a consequence of the production process.

“If the continuation of the process of circulation meets with obstacles, so that M must suspend its function $M - C$ on account of external circumstances, such as the conditions of the market, etc., and if it therefore remains for a shorter or longer time in its money-form, then we have once more money in the form of a hoard, which happens also in simple commodity circulation whenever the transition from $C - M$ to $M - C$ is interrupted by external circumstances. It is an involuntary formation of a hoard. In the case at hand money has the form of fallow, latent money-capital. But we will not discuss this point any further for the present.

In either case however persistence of capital in its money state appears as the result of interrupted movement, no matter whether this is expedient or inexpedient, voluntary or involuntary, in accordance with its functions or contrary to them.” (p 79)

2) Accumulation and Reproduction on an Extended Scale

Capital can only expand in technologically determined proportions. The technical composition of capital determines, let us say, that with the existing machines, 10,000 kilos of cotton require 10 workers, working 20 hours to process into yarn, using 5 machines over two 10 hour shifts.

In order to increase production, i.e. expand the capital, it may then be necessary to buy an additional machine. But, the surplus value produced may not be sufficient to fund this in one year. It will then be necessary to save/accumulate the surplus value over several years until a sufficient fund exists to purchase a machine, and to pay for the additional worker to operate it, and to buy the extra 2,000 kilos of cotton to be processed. In other words, a money hoard has to be produced as an inevitable part of capital expansion.

“The formation of a hoard thus appears here as a factor included in the process of capitalist accumulation, accompanying it but nevertheless essentially differing from it; for the process of reproduction itself is not expanded by the formation of latent money-capital. On the contrary, latent money-capital is formed here because the capitalist producer cannot directly expand the scale of his production.” (p 80)

Whether this hoard takes the form of actual money, bank deposits, the purchase of interest bearing securities, or commercial credit to customers, it does not enter the circulation of this capital. It may, of course, enter the circuit of some other capital, as provision of advanced money-capital, used for the purchase of productive-capital. Until such time as it does so, it is only money, only potential capital.

But, the essence of capitalist production is its self expansion, its conversion of surplus value into capital, and from this perspective the failure to convert the money hoard into productive-capital represents a cost. Industrial capital must always, therefore, seek to minimise the time when this money-capital lies fallow.

The circuit $M - M'$, giving the circuit of money-capital, is qualitatively different to the circuit of productive-capital, $P - P'$. The former indicates only that an amount of advanced money capital has been augmented by the production of surplus value contained in C' and realised in an amount of money M' : There everything ends. But, $P - P'$ tells us that the surplus value produced has been accumulated in additional productive-capital, P' .

“ M' , as the simple close of $M \dots M'$, and also C' , as it appears within all these circuits, do not if taken by themselves express the movement but its result: the self-expansion of capital-value realised in the form of commodities or money, and hence, capital-value as M plus m , or C plus c , as a relation of capital-value to its surplus-value, as its offspring. They express this result as various circulation forms of the self-expanded capital-value. But neither in the form of C' nor of M' is the self-expansion which has taken place itself a function of money-capital or of commodity-capital.” (p 82)

Money-capital can only perform money functions, just as commodity-capital can only perform commodity functions, and productive-capital, production functions. Each taken separately could perform these functions under other modes of production. Money is money, a commodity a commodity, and means of production and labour, forces of production under whatever mode of production. It is only in their totality, as stages within the circuit of industrial capital, that they can be properly understood as functioning as capital.

“But just as the totality of the elements of production announces itself at the outset as productive capital by the fact that the labour-power is labour-power that belongs to others and that the capitalist purchased it from its proprietor, just as he purchased his means of production from other commodity-owners; just as therefore the process of production itself appears as a productive function of industrial capital, so money and commodities appear as forms of circulation of the same industrial capital, hence their functions appear as the functions of circulation, which either introduce the functions of productive capital or emanate from them. Here the money-function and the commodity-function are at the same

time functions of commodity-capital, but solely because they are interconnected as forms of functions which industrial capital has to perform at the different stages of its circuit. It is therefore wrong to attempt to derive the specific properties and functions which characterise money as money and commodities as commodities from their quality as capital, and it is equally wrong to derive on the contrary the properties of productive capital from its mode of existence in means of production.” (p 83)

Its clear that surplus value cannot have its origins in the properties either of money or of commodities. M' as the termination of the circuit $M - M'$ exists only as a result, not as a process revealing the origin of the surplus value m . The same is true of the circuit $C - C'$.

“ C' is always the product of the function of P , and M' is always merely the form of C' changed in the circuit of industrial capital. As soon therefore as the realised money-capital resumes its special function of money capital, it ceases to express the capital-relation contained in $M' = M$ plus m . After $M \dots M'$ has been passed through and M' begins the circuit anew, it does not figure as M even if the entire surplus-value contained in M' is capitalised.” (p 83-4)

3) Accumulation of Money

If m , the money representation of the surplus value, is to be used as new capital, to start another business, then it must be of the minimum size required to start such a business. If its to be used to expand the existing business it must be of the minimum size required to do that as determined by the technical composition of the capital.

“Thus the owner of a spinning-mill cannot increase the number of his spindles without at the same time purchasing a corresponding number of carders and roving frames, apart from the increased expenditure for cotton and wages which such an expansion of his business demands.” (p 85)

If not then several circuits of this capital will be required so that the surplus value builds up to the necessary level.

“Hence the accumulation of money, hoarding, appears here as a process by which real accumulation, the extension of the scale on which industrial capital operates, is temporarily accompanied. Temporarily, for so long as the hoard remains in the condition of a hoard, it does not function as capital, does not take part in the process of creating surplus-value, remains a sum of money which grows only because money, come by without its doing anything, is thrown in the same coffer.” (p 85)

This money can take the form of actual money, but also of claims on debtors for commodities sold but not yet paid for. It can also take the form of interest bearing deposits etc., which at least, temporarily takes this money out of the circuit of industrial capital. The nature of these latter, Marx discusses later.

4) Reserve Fund

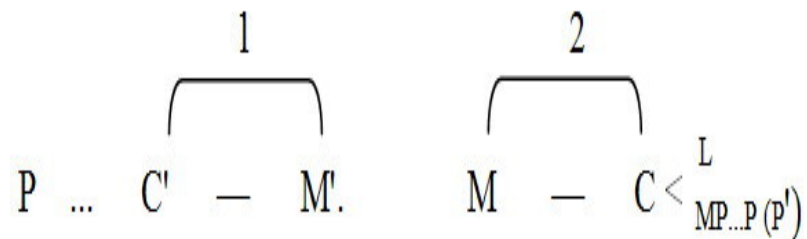
The money hoard may be used for other functions besides the expansion of the capital. Suppose, there is a delay between the production of the commodities and their sale $C' - M'$. Then the money hoard can be used to purchase means of production and labour-power, so that production is not disrupted. Suppose also that the commodities are sold, but, before the replacement means of production and labour power are bought, the prices of either or both rise, compared to those consumed in the previous cycle. In that case, the

money hoard can be used as additional capital in addition to that realised in the sale M', again to ensure that production can proceed on the same scale.

Marx says its important not to confuse this reserve fund with the money balances, which naturally accumulate within a continual process of production. Suppose, there was no surplus value, and so no money surplus waiting to be invested. There would still be money balances. That is because purchases and sales are not taking place simultaneously. A large amount of sales may take place on Day 1, bringing in a large amount of cash. However, there may not be a corresponding large amount of purchases of materials etc. until Day 10. So, this cash will sit as a balance for 10 days. But, it does not constitute a reserve fund, precisely because all of that cash is required on Day 10, to make those purchases. It is only the original capital-value in a money form. The reserve fund, by contrast, is a fund of money over and above the original capital-value.

"It is rather a part of capital in a preliminary stage of its accumulation, of surplus-value not yet transformed into active capital." (p 87)

Marx then gives the circuit for productive-capital.



It can be used to illustrate both simple and expanded reproduction.

"If P equals P, then M in 2) equals M' minus m; if P equals P', then M in 2) is greater than M' minus m; that is to say m has been completely or partially transformed into money-capital."

The circuit of productive capital is the form in which classical Political Economy examines the circular movement of industrial capital." (p 88)

Chapter 3 - The Circuit of Commodity-Capital

The general formula for the circuit of commodity-capital is, $C' — M' — C \dots P \dots C'$. C' is not just the product, but also the premise of the previous two circuits – money-capital and productive-capital. That is because $M — C$, for one capital, is simultaneously $C — M$, for some other capital. A productive-capitalist who lays out money-capital, to buy coal and machinery, $M — C$, thereby enables the capitalist who owns a coal mine, or produces machines, to sell those commodities, $C — M$.

The circuit $P\dots P$, and the circuit $C' — C$, as was previously described, is assumed in the first repetition of the circuit $M — M'$, because as soon as M' or M is used to buy new means of production, the only purpose of that is to undertake production, to produce additional commodities, embodying surplus value.

“If reproduction takes place on an extended scale, then the final C' is greater than the initial C' and should therefore be designated here as C'' .” (p 89)

The circuit of money-capital, $M — C — M$, appears to have production interrupting the circuit. The circuit of productive-capital, $P\dots P$, is actually $C — M — C$, because P is made up of commodities (means of production and labour-power) transformed into new commodities, which are then sold, for money, which is then used to buy commodities (means of production and labour power). Here it is the two ends of the production process, which appear to be the interruption of the circuit, i.e. the period of exchanging the final product for money, and the period of exchanging the money for means of production, and labour-power.

For the circuit of commodity capital, it is again $C — M — C$, but this time viewed from its opposite pole. Here the circuit begins not with those commodities bought as productive capital, but the commodities produced as the end product. They are exchanged for money, $C — M$, which is then exchanged for commodities (means of production and labour power). So, $C — M — C$.

But, there is a difference between this last circuit and the other two. In the circuit of money-capital, $M — M'$, where M then forms the start of the new circuit, it appears only as M not M' , whether or not the surplus value from the previous circuit is accumulated, i.e. whether there is simple or expanded reproduction. That is because the M that commences the circuit is only the monetary equivalent of the capital value actually thrown into production. This is another example of where Marx's theory of value, and social reproduction differs from historic cost models. The M here, for Marx, is not the money price paid for the elements of productive-capital, but only the current money equivalent of the capital value of the productive-capital that enters into the production process. In other words, as Marx specifies elsewhere, it is only money as unit of account.

M' signifies that an expansion of the capital has occurred, which is the case in $M — M'$. But, at the start of the circuit, no such expansion has occurred. It is yet to be accomplished, as a consequence of the production process. Whether M here is equal to the M that commenced the previous circuit, or else equal to the $M + m$ that completed it, is not relevant. The new circuit can only begin with M as a monetary equivalent of the capital-value as it exists. Only when production occurs does this capital value expand.

The same is true in the circuit of the productive-capital $P\dots P'$. If the surplus value from the previous cycle has been accumulated, then this still appears at the start of the new circuit

as P, because its capital value is what it is. In this circuit it has not been expanded. It can only expand as a result of the production process.

But, that is not the case in respect of the circuit of the commodity capital. It always begins with C', and that applies whether there is simple or expanded reproduction. That is because C here, as the end product, always starts life as a product in which surplus value has been embodied. Even with simple reproduction, the production process ensures that C has a higher value than the C (means of production and labour-power) which preceded it. So, the circuit is C' – M'. M – C ... P ... C'.

“Consequently if simple reproduction takes place in this form, the C' at the terminal point is equal in size to the C' at the starting-point. If a part of the surplus-value enters into the capital circuit, C", an enlarged C', appears at the close instead of C'. This is merely a larger C' than that of the proceeding circuit, with a larger accumulated capital-value. Hence it begins its new circuit with a relatively larger, newly created surplus-value. In any event C' always inaugurates the circuit as a commodity-capital which is equal to capital-value plus surplus-value.” (p 90)

C', the end product, does not appear as C (means of production and labour-power) in the circuit of the industrial capital that produced it. It only appears as C in the circuit of some other capital. For example, a coal mine produces coal. Its circuit is C – M – C'. The coal is represented by C', because it includes a surplus value. But, when it is sold to some other company for fuel, it appears as means of production, i.e. as C. By the same token, the coal mine buys machinery that appears in its circuit as means of production, C, but, for the machine maker, it is an end product embodying surplus value, and therefore, C'.

But, whilst means of production, sold as a commodity by a capitalist, constitute commodity-capital, because they embody surplus value, that is not the case with the labour-power, sold as a commodity by the worker. That is sold merely as a commodity. To the capitalist that buys means of production and labour-power, both appear merely as commodities, C. But, whilst for the seller of machines, for example, that C is actually C', for the worker, their labour-power only ever constitutes C. The production of the workers' labour-power is not a capitalistic process of production undertaken by the worker, in which they embed surplus value in the commodity they have to sell. The worker can only sell their labour-power at the price it costs to produce it, i.e. to buy the necessaries required to reproduce the worker.

Labour can only be capital as part of the productive-capital of the capitalist, and therefore, capital not for the worker but for the capitalist that buys it.

C', the end product is converted into money, M'. At this point, the surplus value, $m = c$, can always be separated out. If the commodity is homogeneous, like yarn, then even if it is sold in portions of the total end product, these portions can still function as commodity-capital, because the money raised from their sale can go to purchase new means of production and labour-power. Similarly, the proportion of surplus value contained in this portion of the total product can be separated out so that the original capital value can be thrown back into circulation, thereby reproducing the means of production and labour-power used in the production of that portion of total output.

For example,

$c\ 10,000 + v\ 5,000 + s\ 5,000 = C\ 20,000 = 20,000$ kilos of yarn.

Of this 20,000 kilos, 5,000 is surplus product. In each kilo .25 kilos = surplus product. Put another way, as a kilo = £1, in each kilo, £0.25 = surplus value.

Suppose only 4,000 kilos are sold. 1,000 kilos = surplus product. The remaining 3,000 kilos have a value of £3,000. That is used to buy means of production and labour power. It buys c 2,000 and v 1,000. But, this is sufficient to replace the 4,000 kilos sold. Taking this separately,

c 2,000 + v 1,000 + s 1,000 = C 4,000 = 4,000 kilos.

Of course, as discussed in *Volume I*, the value of all the component parts can themselves be represented by physical amounts of yarn and the value obtained from their sale. So, the constant capital is equal to half the total output, the variable capital and the surplus value, each equal to a quarter. On this basis, if half the output were sold, it could pay for the replacement of all the constant capital. Alternatively, it could be used to cover the payment of wages, as well as revenue for the capitalist to spend. As the other half is sold, it produces the fund to cover purchase of the other components.

And, of course, in reality, the output always is sold in portions rather than one job lot. Even where output is sold to a wholesaler, it is usually sold to more than one. The industrial capitalist will always have some quantity of the end product, as commodity-capital, sitting in their warehouse. That is one reason, as discussed previously, why they need a money reserve to help smooth out the discrepancies between incomes and expenditures.

The buyer is not concerned with the particularities of the producer's costs, other than if they can use it to negotiate a lower price. They are only concerned with what that price is, for what they need to buy. How much they need to buy, will itself depend on the requirements of their business, and how much capital they have.

In the circuit of money capital, $M - C - M'$, we have a complete business cycle. At its completion, a new cycle may commence or this could be the last cycle. All of M' could leave the circuit of capital.

In the circuit of productive capital, $P \dots P'$, P' is not the production process represented by P , but the productive-capital, now ready to engage in production.

“The general form of the movement $P \dots P$ is the form of reproduction and, unlike $M \dots M'$, does not indicate the self-expansion of value as the object of the process. This form makes it therefore so much easier for classical Political Economy to ignore the definite capitalistic form of the process of production and to depict production as such as the purpose of this process; namely that as much as possible must be produced and as cheaply as possible, and that the product must be exchanged for the greatest variety of other products, partly for the renewal of production ($M - C$), partly for consumption ($m - c$). It is then possible to overlook the peculiarities of money and money-capital, for M and m appear here merely as transient media of circulation.” (p 95)

For commodity-capital, the circuit begins with C' , the commodities that comprise the end product, and in which the surplus value is embedded. It is transformed into money M' , which then buys commodities, (means of production and labour power) which comprise the productive-capital, P , production occurs resulting in C' , again the end product.

“The third form is distinguished from the first two by the fact that it is only in this circuit that the self-expanded capital-value — and not the original one, the capital-value that must still produce surplus-value — appears as the starting point of its self-expansion. C as a capital-relation is here the starting point and as such relation has a determining influence on the entire circuit because it includes the circuit of the capital-value as well as that of the surplus-value in its first phase, and because the surplus-value must at least in the average,

if not in every single circuit, be expended partly as revenue, go through the circulation $c — m — c$, and must perform the function of an element of capital accumulation.” (p 96)

In other words, part is taken out to spend by the capitalist, but another part is accumulated. C' is transformed into C . C' , the output, includes the surplus value. But, C' is bought as commodities. Some is bought by workers for their consumption, and some is bought by capitalists, part for their own consumption, and part as means of production. In all these cases, for all these buyers, their purchase appears as $M — C$.

“In $M... M'$ possible enlargement of the circuit is included, depending on the volume of m entering into the renewed circuit.

In $P ... P$ the new circuit may be started by P with the same or perhaps even a smaller value and yet may represent a reproduction on an extended scale, for instance when certain elements of commodities become cheaper on account of increased productivity of labour. Vice versa, a productive capital which has increased in value may, in a contrary case, represent reproduction on a materially contracted scale as for instance when elements of production have become dearer. The same is true of $C' ... C'$.” (p 96-7)

Which reinforces the point made previously, that for Marx the expansion of capital is not signified by an expansion of its value, but of its physical amount.

In the circuit of commodity-capital beginning with the end product, C' , it is assumed that the reproduction of the commodities ($MP + L$), which enable the production of the end product, can occur, but this requires them to exist. If these commodities, for whatever reason, have themselves not been produced, then the circuit breaks down.

Money-capital, within the circuit of an industrial capital, does not presume money-capital in general. A capitalist firm might be the first ever capitalist firm. The same is true of the productive-capital. But, C' , does presume the existence of commodity-capital outside the particular capital. That is because means of production and labour-power are themselves sold as commodities. Even if the means of production are produced by non-capitalists, they are bought by merchants, and form their commodity-capital.

*“But just because the circuit $C' ... C'$ presupposes within its sphere the existence of other industrial capital in the form of C (equal to $L + MP$) — and MP comprises diverse other capitals, in our case for instance machinery, coal, oil, etc. — it clamours to be considered not only as the **general** form of the circuit, i.e., not only as a social form in which every single industrial capital (except when first invested) can be studied, hence not merely as a form of movement common to all individual industrial capitals, but simultaneously also as a form of movement of the sum of the individual capitals, consequently of the aggregate capital of the capitalist class, a movement in which that of each individual industrial capital appears as only a partial movement which intermingles with the other movements and is necessitated by them. For instance if we regard the aggregate of commodities annually produced in a certain country and analyse the movement by which a part of it replaces the productive capital in all individual businesses, while another part enters into the individual consumption of the various classes, then we consider $C' ... C'$ as a form of movement of social capital as well as of the surplus-value, or surplus-product, generated by it.” (p 99-100)*

Partly for that reason, it is impossible to examine the circuit of commodity-capital of one firm without also examining the intermingling with the circuits of commodity-capital of other firms.

“Since in C' ... C' the starting-point is the total product (total value), it turns out that (if foreign trade is disregarded) reproduction on an extended scale, productivity remaining otherwise constant, can take place only when the part of the surplus-product to be capitalised already contains the material elements of the additional productive capital; that therefore, so far as the production of one year serves as the premise of the following year's production or so far as this can take place simultaneously with the process of simple reproduction within one year, surplus-product is at once produced in a form which enables it to perform the functions of additional capital. Increased productivity can increase only the substance of capital but not its value; but therewith it creates additional material for the self-expansion of that value.” (p 101-2)

In other words, the production of surplus value itself cannot enable expanded reproduction to take place. The surplus value, must also meet in the market place an increased quantity of means of production and labour-power. There must also have been created a physical, surplus-product which is the equivalent of this surplus value.

Chapter 4 - The Three Formulas of the Circuit

The formulas for the three circuits of capital are:

1. $M — C \dots P \dots C' — M'$

2. $P \dots Tc \dots P$

3. $Tc \dots P (C')$

“The total process presents itself as the unity of the processes of production and circulation. The process of production becomes the mediator of the process of circulation and vice versa.” (p 103)

What is common to all three is that self-expansion of value is the purpose. It appears that the circulation of capital is only the same metamorphosis of commodities seen in commodity exchange. But, looked at more closely, it can be seen that this is not the case.

“... if we study the connection between the circuits of individual capitals as partial movements of the process of reproduction of the total social capital, then the mere change of form of money and commodities cannot explain the connection.” (p 103-4)

Each circuit presupposes the other. Money-capital only expands because production occurs and commodity-capital is exchanged for money. Productive-capital is only reproduced because the commodities that comprise the commodity-capital are sold, creating money-capital that buys productive-capital. Commodity-capital only exists because it has been produced by productive-capital, and can only be reproduced because it is converted into money-capital that buys productive-capital.

In reality, of course, what has been discussed, so far, as a linear process, is no such thing, because all of these circuits are occurring simultaneously.

“But in reality every individual industrial capital is present simultaneously in all three circuits. These three circuits, the forms of reproduction assumed by the three forms of capital, are made continuously side by side. For instance, one part of the capital-value, which now performs the function of commodity-capital, is transformed into money-capital, but at the same time another part leaves the process of production and enters the circulation as a new commodity-capital. The circuit form $C' \dots C'$ is thus continuously described; and so are the other two forms. The reproduction of capital in each one of its forms and stages is just as continuous as the metamorphosis of these forms and the successive passage through the three stages. The entire circuit is thus a unity of its three forms.” (p 104)

In the analysis until now, each stage has appeared as an interruption of the other circuits. In previous modes of production, this is frequently the case. For example, an artisan, who produced to order, can cease production altogether for periods after they have completed an order. But, capitalism does not work that way. Even during a crisis, production, as a whole, and for the majority of businesses, carries on as a continual process.

In reality, under capitalism, it is this continuous, and therefore simultaneous nature of production and distribution, that are its characteristics. At the same time that production is occurring, previous production is assuming the form of commodity-capital; at the same time that commodity-capital is being sold and converted to money-capital; at the same time that

money-capital is being used to buy means of production and labour-power; at the same time that means of production and labour-power are engaging in production.

“All parts of capital successively describe circuits, are simultaneously at its different stages. The industrial capital, continuously progressing along its orbit, thus exists simultaneously at all its stages and in the diverse functional forms corresponding to these stages. That part of industrial capital which is converted for the first time from commodity-capital into money begins the circuit C' ... C', while industrial capital as a moving whole has already passed through that circuit. One hand advances money, the other receives it. The inauguration of the circuit M ... M' at one place coincides with the return of the money at another place. The same is true of productive capital.” (p 105-6)

Industrial capital exists, therefore, as the unity of these three circuits.

*“But it can be such a unity only if all the different parts of capital can go through the successive stages of the circuit, can pass from one phase, from one functional form to another, so that the industrial capital, being the whole of all these parts, exists simultaneously in its various phases and functions and thus describes all three circuits at the same time. The succession [**das Nacheinander**] of these parts is here governed by their co-existence [**das Nebeneinander**], that is to say, by the division of capital. In a ramified factory system the product is constantly in the various stages of its process of formation and constantly passes from one phase of production to another.” (p 106)*

Failure to grasp the dialectical nature of this continuous process, and the simultaneity it involves, is one of the weaknesses of the *Temporal Single System Interpretation*.

At the same time, because each capitalist only has a definite amount of capital in total, the capital-value at any of these points is itself limited in size, and must be proportionate to the total capital.

By the same token, if the circuit is broken or stagnates at one point, it causes it to break or stagnate throughout. If the commodities that comprise the commodity-capital are not sold, money-capital is lacking, which means productive-capital cannot be bought and so on.

The unity and simultaneity of the three circuits is most evident when viewed from the perspective of the total social capital, i.e. of *capital in general*. But, at the same time, this total social capital itself is always divided into the functional forms of capital peculiar to each circuit. In other words, into money-capital, productive-capital and commodity-capital. That is so whether we view these three functional forms as operating independently in the shape of money-capital, productive-capital and merchant-capital, or not. As industrial capital, the capitalist has to have a portion of their capital, at any one time, in each of these functional forms.

“The next form in which the process presents itself is that of a succession of phases, so that the transition of capital into a new phase is made necessary by its departure from another. Every separate circuit has therefore one of the functional forms of capital for its point of departure and point of return.” (p 107)

“Various fractional parts of capital pass successively through the various stages and functional forms. Thanks to this every functional form passes simultaneously with the others through its own circuit, although always a different part of capital finds its expression in it. One part of capital, continually changing, continually reproduced, exists as a commodity-capital which is converted into money; another as money-capital which is converted into productive capital; and a third as productive capital which is transformed into commodity-capital. The continuous existence of all three forms is brought about by the

circuit the aggregate capital describes in passing through precisely these three phases.” (p 107)

Consequently, viewed from the perspective of the total process, and the unity of the three circuits, rather than any one phase being an interruption of the other circuits, it is the condition for their continuity. It is in this continuity, and the succession of stages that it is at the same time simultaneous.

“Capital as a whole, then, exists simultaneously, spatially side by side, in its different phases. But every part passes constantly and successively from one phase, from one functional form, into the next and thus functions in all of them in turn. Its forms are hence fluid and their simultaneousness is brought about by their succession. Every form follows another and precedes it, so that the return of one capital part to a certain form is necessitated by the return of the other part to some other form. Every part describes continuously its own cycle, but it is always another part of capital which exists in this form, and these special cycles form only simultaneous and successive elements of the aggregate process.

The continuity — instead of the above-described interruption — of the aggregate process is achieved only in the unity of the three circuits. The aggregate social capital always has this continuity and its process always exhibits the unity of the three circuits.” (p 107)

Viewed from the perspective of 'many capitals', i.e. at the level of the individual firms or industries, this continual process, however, also displays discontinuity. The most obvious example is in agriculture, because of its seasonal nature. Crops of different types can only be planted at certain times of the year, and harvested at other times of the year. As well as there being several months between planting and harvesting, there will also be several months between harvesting and planting. In that case, the money received from the harvest $C' - M'$, itself lies fallow until such time as it can be used to buy productive capital, $M - C$ ($MP + L$), as well as a portion of productive-capital (the land, machines, possibly labour-power) itself lying fallow. For that reason, there is an incentive to try to use crop rotation, to ensure land is continually in cultivation.

But, similar variations apply to all capitals. Clothing manufacturers will have higher demand for their products at certain times of year than at others, and therefore need to have more employed as productive-capital during those times. Ice cream sellers do most business in the Summer, and need to work longer and buy more ice cream, and spend more money running their vans during that time than in the Winter. Sports centres have peak periods when they have higher attendance and need to employ more staff than during off peak periods.

Finally, different types of commodity will themselves require different proportions of money, productive and commodity-capital.

“The process goes on most regularly and uniformly in the factories and mines. But this difference in the various branches of production does not cause any difference in the general forms of the circular process.” (p 108)

Marx then gives an expansive definition of capital that is worth citing in full.

“Capital as self-expanding value embraces not only class relations, a society of a definite character resting on the existence of labour in the form of wage-labour. It is a movement, a circuit-describing process going through various stages, which itself comprises three different forms of circuit-describing process. Therefore it can be understood only as a motion, not as a thing at rest. Those who regard the gaining by value of independent

existence as a mere abstraction forget that the movement of industrial capital is this abstraction in actu. Value here passes through various forms, various movements in which it maintains itself and at the same time expands, augments. As we are here concerned primarily with the mere form of this movement, we shall not take into consideration the revolutions which capital-value may undergo during its circuit. But it is clear that in spite of all the revolutions of value, capitalist production exists and can endure only so long as capital-value is made to create surplus-value, that is, so long as it describes its circuit as a value that has gained independence, so long therefore as the revolutions in value are overcome and equilibrated in some way. The movements of capital appear as the action of some individual industrial capitalist who performs the functions of a buyer of commodities and labour, a seller of commodities, and an owner of productive capital, who therefore promotes the circuit by this activity. If social capital experiences a revolution in value, it may happen that the capital of the individual capitalist succumbs to it and fails, because it cannot adapt itself to the conditions of this movement of values. The more acute and frequent such revolutions in value become, the more does the automatic movement of the now independent value operate with the elemental force of a natural process, against the foresight and calculation of the individual capitalist, the more does the course of normal production become subservient to abnormal speculation, and the greater is the danger that threatens the existence of the individual capitals. These periodical revolutions in value therefore corroborate what they are supposed to refute, namely, that value as capital acquires independent existence, which it maintains and accentuates through its movement.” (p 109)

Marx provides further insight into the nature of capital and value, at the same time, dealing with the confusion between value and exchange value.

“If value’s acquisition of independence of the value-creating power, labour-power, is inaugurated by the act $M - L$ (purchase of labour-power) and is effected during the process of production as exploitation of labour-power, this acquisition of independence on the part of value does not re-appear in that circuit, in which money, commodities, and elements of production are merely alternating forms of capital-value in process, and the former magnitude of value is compared with capital’s present changed magnitude of value.” (p 109)

In other words, what he is concerned with here is not investigating any changes in capital-value arising from changes in the value of the productive-capital, but changes in capital-value arising as a consequence of the productive process itself.

To further illustrate the point, he quotes Samuel Bailey. Bailey was a precursor of the neoclassical economists in that he developed a subjective theory of value. For Bailey, the value of a commodity was nothing other than its exchange value, i.e. how much of other commodities exchanged against it. This exchange value was then not based on the actual values of these different commodities, but was merely a reflection of the subjective preferences of those involved in the exchange, which is why he argued exchange values change as preferences change. Marx responds,

“This he says against the comparison of commodity-values of different epochs, a comparison which amounts only to comparing the expenditure of labour required in various periods for the production of the same sort of commodities, once the value of money has been fixed for every period. This comes from his general misunderstanding, for he thinks that exchange-value is equal to value, that the form of value is value itself; consequently commodity-value can no longer be compared, if they do not function actively as exchange-values and thus cannot actually be exchanged for one another. He has not the least inkling of the fact that value functions as capital-value or capital only in so far as it remains

identical with itself and is compared with itself in the different phases of its circuit, which are not at all “contemporary” but succeed one another.” (p 109-10)

In other words, to understand the process of valorisation, of the expansion of capital-value, it is necessary to abstract from any changes in capital-value caused purely as a consequence of temporal disparities, i.e. changes in the capital-value due to changes in productivity between one time period and another. Ricardo also was confused, in some of his writing, between value and exchange, which opened him up to criticism from people like Bailey, as Marx sets out in *Theories of Surplus Value*.

“In order to study the formula of the circuit in its purity it is not sufficient to postulate that commodities are sold at their value; it must also be assumed that this takes place with other things being equal. Take for instance the form $P \dots P$, disregarding all technical revolutions within the process of production by which the productive capital of a certain capitalist might be depreciated; disregarding furthermore all reactions which a change in the elements of value of the productive capital might have on the value of the existing commodity-capital, which might appreciate or depreciate if a stock of it is on hand.” (p 110)

Its only when value relations are constant that the cycle is normal, or is practically normal when disturbances to value relations balance each other out. But, the more of these disturbances that occur, the more capital has to hold money-capital to smooth out these disturbances.

“... we have here another circumstance to be added to those others which transform the function of the industrial capitalist more and more into a monopoly of big money-capitalists, who may operate singly or in association.” (p 110)

Any change in capital-value has a different appearance when viewed from the perspective of $M - M'$ than for $P \dots P$ and $C' - C'$.

$M - M'$ is the circuit of newly invested money-capital. If the value of means of production has fallen, then less of this money-capital has to be laid out to buy a given quantity of it. That means that to start a business, of any given size, less capital is required, because this size is determined by the physical quantity of means of production needed, not the value of these means of production. Moreover, this size is further determined by the technical composition of capital, not by the value composition. The reverse is the case if the value of means of production rises. But,

“In both cases it is only the amount of the money-capital required for new investment that is affected. In the former case money-capital becomes surplus, in the latter it is tied up, provided the accession of new individual industrial capital proceeds in the usual way in a given branch of production.” (p 111)

That is the case because any increase in the value of means of production – constant capital – is itself reflected in (transferred to) the end product, and it is thereby automatically reproduced. For example, assuming simple reproduction:-

1. $c \text{ } \pounds 1,000$ (1,000 kilos of cotton) + $v \text{ } \pounds 1,000$ (100 hours of labour) + $s \text{ } \pounds 1,000 = C \text{ } \pounds 3,000$.

If the value of the cotton rises by 10% prior to the yarn being sold, this is reflected in the value of the yarn, so although it was bought for $\pounds 1,000$, its value is $\pounds 1,100$. So,

2. $c \text{ } \pounds 1,100$ (1000 kilos of cotton) + $v \text{ } \pounds 1,000$ (100 hours of labour) + $s \text{ } \pounds 1,000 = C \text{ } \pounds 3,100$

Consequently, in the next cycle the capital value consumed is automatically reproduced in the value of the end product. £1,000 (surplus value) is consumed unproductively by the capitalist, leaving £2,100 of capital value, £1,100 used to replace the 1000 kilos of cotton, £1,000 to replace the 100 hours of labour consumed.

“The circuits P ... P and C' ... C' present themselves as M ... M' only to the extent that the movement of P and C' is at the same time accumulation, hence to the extent that additional m, money, is converted into money-capital; here, too, we do not take into consideration the reaction of such changes in value on those constituent parts of capital which are engaged in the process of production. It is not the original expenditure which is directly affected here, but an industrial capital engaged in its process of reproduction and not in its first circuit; i.e., C' ... C^LMP, the reconversion of commodity-capital into its elements of production, so far as they are composed of commodities.” (p 111)

In other words, Marx is distinguishing here between the portion of capital that is simply reproduced, and that which is accumulated. Again, this is a weakness of the *Temporal Single System Interpretation*, which calculates the rate of profit on the basis of M – M'. But, as Marx points out, M – M' is only the circuit of newly invested money-capital. The circuit of existing capital, is P...P, i.e. the circuit of productive-capital, which assumes its reproduction. The effect of a change in capital-value on these two elements – the capital that is reproduced, and the capital that is accumulated – represented by M and m, is quite clearly different for the reasons described above.

For example, if we assume that instead of simple reproduction all of the surplus value above is accumulated, the effect of a change in value is manifest. So,

$$3. c \text{ £1,000 (1,000 kilos of cotton) } + v \text{ £1,000 (100 hours of labour) } + s \text{ £1,000} = C \text{ £3,000}$$

Then in cycle 2.

$$4. c \text{ £1,500 (1,500 kilos of cotton) } + v \text{ £1,500 (150 hours of labour) } + s \text{ £1,500} = C \text{ £4,500.}$$

In reality (4) is two separate cycles. Firstly, M, which becomes M-C (MP +L) is reproduced. It is existing capital. The real circuit here is not M – M', although it has that appearance. The real circuit is P...P. So, M = £2,000, only because C(MP) = £1,000, and C(L) = £1,000. If the value of means of production changes then the value of M has to be changed accordingly, because as Marx illustrates, M here is only the money equivalent of the productive-capital value. It is only money as unit of account. Here, M becomes C(MP+L), which goes through the process of production P, resulting in the production of C' which is really C + c, and is converted into M', again which is really M + m. The circuits of M and m then divide. M is merely the circuit of productive-capital as it is reproduced. To the extent that m is accumulated, it is a new circuit of capital.

What appears on the surface as one new circuit of capital is really two. We have the circuit of the reproduction of the original capital, which is really P..P, seen as, M £2,000 – C (MP + L) £2,000 ... P... C' (C + c) £3,000 – M' (M + m) £3,000, which then becomes, M £2,000 – C (MP + L) £2,000 ... P ... C' (C + c) £3,000 - M' (M + m) £3,000, and we also have the circuit of the accumulated capital, which really is M-M'. That is, M £1000 - C (MP + L) £1,000 ... P ... C' (C + c) £1,500 - M' (M + m) £1,500.

But, if the value of cotton rises by 10% then the importance of Marx's breaking down these separate circuits in this way, becomes apparent. We have,

$$5. c \text{ £1,100 (1,000 kilos of cotton) } + v \text{ £1,000 (100 hours of labour) } + s \text{ £1,000} = C \text{ £3,100.}$$

The original capital-value of the cotton consumed is equal to £1,100 (however much the original money sum laid out to buy it was). That value is transferred to the end product, and thereby reproduced within it. So, in the next cycle, M recirculates as,

$$6. c \text{ £1,100 (1,000 kilos of cotton) } + v \text{ £1,000 (100 hours of labour) } + s \text{ £1,000} = C \text{ £3,100.}$$

But, again M' is actually M + m. M has recirculated as reproduced capital not as newly invested capital. That is although it appears as the circuit M – M', it is actually P...P. It is only m that now circulates as newly invested capital.

And, as a consequence the result becomes manifest. The surplus value, m, is equal to £1,000. It is accumulated, and has to buy means of production and labour-power. It must do so, in accordance with the technical composition of capital, which requires 100 hours of labour to process 1000 kilos of cotton. The rise in price of cotton has had no effect on the ability to reproduce the cotton consumed in the first cycle, because its value was transferred to, and was reproduced in the end product. M commenced as £1,000 and reappears as £1,100 here not because capital-value has expanded, but simply because the exchange value of cotton has risen relative to money.

If we view the circuit of this capital as we should, not as M-M', but as P...P, then it is clear that nothing has changed in this regard. The circuit commenced with 1000 kilos of cotton, and 100 hours of labour, and the new circuit commences on exactly the same basis. That was illustrated by looking at the result of the 10% price rise under conditions of simple reproduction. It made no difference to the scale of production.

But, that is not the case with m. The rise in price of cotton does impact m, precisely because it is a new investment of capital, and not simply a reproduction of existing capital. Consequently, this £1,000 is divided according to the requirements of the technical composition into 476.2 kilos of cotton, and 47.62 hours of labour. The value of these is £523.8 and £476.2 respectively. So, this newly accumulated capital amounts to:

$$7. c \text{ £523.8 (476.2 kilos of cotton) } + v \text{ £476.2 (47.62 hours of labour) } + s \text{ £476.2} = C \text{ £1,476.2}$$

Compare this with the accumulation where no price rise occurred. There 500 kilos of cotton valued at £500 was bought, and 50 hours of labour-power, costing £500, was bought to process it. Using Marx's method of analysis of the circuits of productive and money-capital then, the effect of a change in value of means of production, on the rate of profit and on accumulation can be seen. A rise in price retrospectively changes the value of the capital laid out, and which is reproduced. It thereby enables this capital to be reproduced on the same scale. However, and precisely for that reason, it reduces the rate of profit, because although the amount of surplus value is not changed, the proportion of this surplus value to the capital laid out (and to be reproduced) necessarily falls.

In conditions other than simple reproduction, a rise in the price of the means of production reduces the extent to which accumulation can occur, just as with any new capital entering production, the scale of operation it can undertake is lower the higher the price of means of production it confronts.

Looking at the effect of these changes in capital-value from the perspective of M-M', therefore, Marx writes,

“When value (prices) fall three cases are possible: The process of reproduction is continued on the same scale; in that event a part of the money-capital existing hitherto is set free and money-capital is accumulated, although no real accumulation (production on an extended scale) or transformation of m (surplus-value) into an accumulation-fund initiating and accompanying such accumulation has previously taken place. Or the process of reproduction is carried on on a more extensive scale than ordinarily would have been the case, provided the technical proportions admit it. Or, finally, a larger stock of raw materials, etc., is laid in.” (p 111)

The opposite occurs when prices rise, but viewed from the opposite perspective of $P.. P$, and $C' - C'$, things look different.

“If our spinning-mill proprietor for example has a large stock of cotton (a large proportion of his productive capital in the form of a stock of cotton), a part of his productive capital is depreciated by a fall in the prices of cotton; but if on the contrary these prices rise, this part of his productive capital appreciates. On the other hand, if he has tied up huge quantities in the form of commodity-capital, for instance of cotton yarn, a part of his commodity-capital, hence of his circuit describing capital in general, is depreciated by a fall of cotton, or appreciated by a rise in its prices. Finally take the process $C' - M - C <^L MP$. If $C' - M$, the realisation of the commodity-capital, has taken place before a change in the value of the elements of C , then capital is affected only in the way indicated in the first case, namely in the second act of circulation, $M - C <^L MP$; but if such a change has occurred before $C' - M$ has been effected, then, other conditions remaining equal, a fall in the price of cotton causes a corresponding fall in the price of yarn, and a rise in the price of cotton means conversely a rise in the price of yarn. The effect on the various individual capitals invested in the same branch of production may differ widely, according to the circumstances in which they find themselves.” (p 112)

Where industrial capital has become predominant, the majority of means of production are themselves commodities produced by some other industrial capital. So, $M - C$, the purchase of means of production, for some other capital, appears as $C' - M'$, the transformation of their commodity capital into money-capital. But, this is not necessarily the case. Industrial capital can purchase its means of production from diverse sources covering a range of modes of production. For example, cotton was bought from the southern slave-owning states of the US, sugar bought from slave production in the Caribbean, whilst various agricultural products were bought from peasant producers in Ireland and Europe.

“No matter whether commodities are the output of production based on slavery, of peasants (Chinese, Indian ryots), of communes (Dutch East Indies), of state enterprise (such as existed in former epochs of Russian history on the basis of serfdom) or of half-savage hunting tribes, etc. — as commodities and money they come face to face with the money and commodities in which the industrial capital presents itself and enter as much into its circuit as into that of the surplus-value borne in the commodity-capital, provided the surplus-value is spent as revenue; hence they enter in both branches of circulation of commodity-capital. The character of the process of production from which they originate is immaterial. They function as commodities in the market, and as commodities they enter into the circuit of industrial capital as well as into the circulation of the surplus-value incorporated in it. It is therefore the universal character of the origin of the commodities, the existence of the market as world-market, which distinguishes the process of circulation of industrial capital. What is true of the commodities of others is also true of the money of others. Just as commodity-capital faces money only as commodities, so this money

functions vis-à-vis commodity-capital only as money. Money here performs the functions of world-money.” (p 113)

Marx then elaborates a principle important for understanding the role of imperialism as a “*Pioneer of Capitalism*” to use Bill Warren's term.

“First: as soon as act M — MP is completed, the commodities (MP) cease to be such and become one of the modes of existence of industrial capital in its functional form of P, productive capital. Thereby however their origin is obliterated. They exist henceforth only as forms of existence of industrial capital, are embodied in it. However it still remains true that to replace them they must be reproduced, and to this extent the capitalist mode of production is conditional on modes of production lying outside of its own stage of development. But it is the tendency of the capitalist mode of production to transform all production as much as possible into commodity production. The mainspring by which this is accomplished is precisely the involvement of all production into the capitalist circulation process. And developed commodity production itself is capitalist commodity production. The intervention of industrial capital promotes this transformation everywhere, but with it also the transformation of all direct producers into wage-labourers.” (p 113-4)

The suppliers of these means of production themselves are confronted by their return in their metamorphosed form of commodities produced by industrial capital. They do so not directly from the industrial capitalist but via the intermediary of merchant capital.

“And merchant's capital, by its very nature comprises commodities of all modes of production.” (p 114)

The industrial capitalist is always in a sense also a merchant because they sell to merchants and because they sell directly to other industrial capitalists. But, the majority of consumers only buy through the intermediary of merchant capital.

Marx then sets out a number of explanations of how he proceeds in *Volume II* to analyse the process of circulation.

“Trading in commodities as the function of merchant's capital is a premise of capitalist production and develops more and more in the course of development of such production. Therefore we occasionally take its existence for granted to illustrate particular aspects of the process of capitalist circulation; but in the general analysis of this process we assume direct sale, without the intervention of a merchant, because this intervention obscures various facets of the movement.” (p 114)

“In the discussion of the general forms of the circuit and in the entire second book in general, we take money to mean metallic money, with the exception of symbolic money, mere tokens of value, which are designed for specific use in certain states, and of credit-money, which is not yet developed. In the first place, this is the historical order; credit-production plays only a very minor role, or none at all, during the first epoch of capitalist production. In the second place, the necessity of this order is demonstrated theoretically by the fact that everything of a critical nature which Tooke and others hitherto expounded in regard to the circulation of credit-money compelled them to hark back again and again to the question of what would be the aspect of the matter if nothing but metal-money were in circulation. But it must not be forgotten that metal-money may serve as a purchasing medium and also as a paying medium. For the sake of simplicity, we consider it in this second book generally only in its first functional form.” (p 115-6)

The process of the circulation of industrial capital is governed by the laws of commodity exchange set out in *Chapter 3* of *Volume I*. The faster the velocity of money, the greater

the capital-value a given amount of money sets in motion. To the extent that money acts as a means of payment, and only has to settle outstanding net balances, again the more capital-value a given amount of money sets in motion. If the velocity of money is given, then the amount of money required to circulate a given capital-value is determined by the volume of commodities and their aggregate prices. If the quantity and price of commodities is given the amount of money required is determined by the value of money.

“But the laws of the general circulation of commodities are valid only when capital’s circulation process consists of a series of simple acts of circulation; they do not apply when the latter constitute functionally determined sections of the circuit of individual industrial capitals.” (p 116)

The acts of circulation $M - C - M$ and $C - M - C$, are essentially the same act of metamorphosis viewed from opposite perspectives. Every act $M - C$, necessitates another act $C - M$. One is the act of the buyer, the other of the seller. The same applies to capital, and the acts of buying and selling by a capitalist in that the commodities he buys (means of production and labour-power) constitute productive-capital and the commodities he sells constitute commodity-capital, and “... *his capital on that account functions in the form of money opposed to the commodities of another. But this intertwining is not to be identified with the intertwining of the metamorphoses of capitals.*” (p 117)

For one thing, the capitalist may buy means of production, $M - C$, but may not buy them from another capitalist. They may be bought from a peasant producer, slave-owner etc. The purchase of labour-power $M - C(L)$ is never an exchange of capitals because labour-power is not capital for the worker. It only becomes capital in the hands of the capitalist.

Furthermore, $C' - M'$ may not be the money equivalent of a converted commodity-capital. It can be simply the money equivalent of the product of labour-power. A school that employs a teacher only sells the commodity education produced by the teacher's labour-power. Alternatively, it could be the converted form of the product of some other form of labour. For example, yarn may not be the converted form of cotton produced as commodity-capital. It may have been cotton produced merely as a commodity by peasant or slave labour.

But, even if we assume that all production is capitalist, its clear that not all exchanges of commodities represent exchanges of capital. The capitalist also exchanges money for the purchase of commodities for their own consumption. One capitalist exchanges commodity-capital for money $C - M$, but the other simply exchanges money for commodities.

It is not possible then to analyse the intertwining and exchange of individual capitals, as part of the total social capital, simply by examining the exchange of commodities.

Natural Money and Credit Economy

Marx then describes why it is the mode of production, not of exchange which is decisive.

A natural economy is one where the producers essentially produce only for their own consumption needs. But, an economy that also produces commodities will require money to facilitate their exchange. An economy that has gone beyond simple commodity production and exchange will develop credit-money as a means of exchange.

But, in reality, credit-money is only a development of money itself. Credit-money cannot exist without money itself. The division, therefore, is actually between natural economy on one side and money-economy and credit economy on the other. Yet, money can act as a means of exchange in a variety of economies from primitive tribes through slave production

to capitalism. By the same token, natural economy can be used as a description of all sorts of different modes of production.

If the form of exchange can be the same across all these different types of society, it cannot act as a useful means of analysing these different modes of production.

“Consequently what characterises capitalist production would then be only the extent to which the product is created as an article of commerce, as a commodity, and hence the extent also to which its own constituent elements must enter again as articles of commerce, as commodities, into the economy from which it emerges.

As a matter of fact capitalist production is commodity production as the general form of production. But it is so and becomes so more and more in the course of its development only because labour itself appears here as a commodity, because the labourer sells his labour, that is, the function of his labour-power, and our assumption is that he sells it at its value, determined by its cost of reproduction. To the extent that labour becomes wage-labour, the producer becomes an industrial capitalist. For this reason capitalist production (and hence also commodity production) does not reach its full scope until the direct agricultural producer becomes a wage-labourer. In the relation of capitalist and wage-labourer, the money-relation, the relation between the buyer and the seller, becomes a relation inherent in production. But this relation has its foundation in the social character of production, not in the mode of exchange. The latter conversely emanates from the former. It is, however, quite in keeping with the bourgeois horizon, everyone being engrossed in the transaction of shady business, not to see in the character of the mode of production the basis of the mode of exchange corresponding to it, but vice versa.” (p 119-20)

The Meeting of Demand and Supply

The capitalist buys low and sells high. He extracts more money from the market than he threw into it. But, that is only because he throws more commodity-value into it than he draws out. That is because the value of the commodities he throws back into the market has been increased by the addition of surplus value, extracted from the workers. If capital only put as much commodity-value back into the market as it took out, then it would mean no surplus-value had been produced.

The capitalist's supply of commodity-value is always greater than his demand, and the greater the difference between the two, the more rapid is the pace of expansion of his capital.

“His aim is not to equalize his supply and demand, but to make the inequality between them, the excess of his supply over his demand, as great as possible.” (p 121)

The value of the means of production he buys is always less than his advanced capital – because he also buys labour-power – and, therefore, an even smaller proportion of the commodity-value he throws into the market. His demand for labour-power is determined by its proportion to total capital, i.e. v/C . As previously described, this proportion continually shrinks, because increasing productivity means less and less labour is required to process a given amount of material.

Capital's demand for labour is essentially also a demand for those commodities necessary for the reproduction of the worker, i.e. the variable capital. So the capitalist's total demand equals $c + v$. But, the capitalist's supply is $c + v + s$.

“Consequently if the composition of his commodity-capital is $80c + 20v + 20s$, his demand is equal to $80c + 20v$, hence, considered from the angle of the value it contains, one-fifth

smaller than his supply. The greater the percentage of the mass of surplus-value produced by him (his rate of profit) the smaller becomes his demand in relation to his supply.” (p 121)

As productivity rises, the demand for labour-power (and, therefore, means of subsistence) declines relative to the demand for means of production. But, his demand for means of production is also always smaller than his capital. So, his demand for means of production must always be smaller, in value, than the product of a capital of equal size to his own, that supplies him.

Suppose we have a capitalist with £1,000 of capital divided:

$$c \text{ £800} + v \text{ £200} + s \text{ £200} = C \text{ £1200.}$$

His demand for means of production is £800. Assuming the supplier/s of these means of production have the same size of capital, and a similar division of their capital, the total value of their output is also £1,200. His demand, for means of production, therefore, equals $800/1200 = 2/3$ of the value of their output.

His own total demand, $c+v$, Marx says, amounts to $4/5$ of his own output, but that figure is wrong. The surplus value is $1/5$ of the capital laid out, but $1/6$ of his total output. His total demand is $£800 (c) + £200 (v) = £1,000$. His total output is $£800 (c) + £200 (v) + £200 (s) = £1200$. So, his demand = $1000/1200 = 5/6$ of his total output.

Marx then turns to the role of the turnover of the capital. The example he gives, again seems to me to be incorrect. This is what Marx says,

“Let the total capital of the capitalist be £5,000, of which £4,000 is fixed and £1,000 circulating capital; let this 1,000 be composed of 800 c plus 200 v, as assumed above. His circulating capital must be turned over five times a year for his total capital to turn over once. His commodity-product is then equal to £6,000, i.e., £1,000 more than his advanced capital, which results in the same ratio of surplus-value as above:

$$5,000 C : 1,000s = 100 (c + v) : 20s$$

This turnover therefore does not change anything in the ratio of his total demand to his total supply. The former remains one-fifth smaller than the latter.

Suppose his fixed capital has to be renewed in 10 years. So the capitalist pays every year one-tenth, or £400, into a sinking fund and thus has only a value of £3,600 of fixed capital left plus £400 in money. If the repairs are necessary and do not exceed the average, they represent nothing but capital invested later. We may look at the matter the same as if he had allowed for the cost of repairs beforehand, when calculating the value of his investment capital, so far as this enters into the annual commodity-product, so that it is included in the one-tenth sinking fund payment. (If his need for repairs is below average he is so much money to the good, and the reverse if above. But this evens out for the entire class of capitalists engaged in the same branch of industry.) At any rate, although his annual demand still remains £5,000, equal to the original capital-value he advanced (assuming his total capital is turned over once a year), this demand increases with regard to the circulating part of the capital, while it steadily decreases with regard to its fixed part.” (p 122)

This appears to be wrong because it does not transfer the written down element of the fixed capital each year into the value of the end product. If we assume that the £800 (c) is materials, then the £400 a year wear and tear of fixed capital must be added to it, to obtain

the actual amount of value of constant capital transferred to the end product. Only in that way, at the end of 10 years is that fixed capital reproduced.

The alternative to this would be to assume that a proportion of the £800 (c) is the wear and tear of fixed capital. In that case, in each cycle $400/5 = £80$ represents wear and tear. On that basis the value of the end product (£6,000) then reproduces the value of the labour-power consumed, (£1,000) as well as the circulating capital in the form of materials etc. (£3,600), and the portion of fixed capital consumed as wear and tear (£400) and produces a surplus value of £1,000.

Of course, if we assume that this £400, is used not to cover repairs to the fixed capital, but to provide for its replacement at the end of ten years, then the proceeds of the end product cannot be used immediately to physically reproduce the fixed capital. A machine is only replaced at the end of its ten years, when its worn out, not a tenth of it each year. So, the £400 goes into a sinking fund for that purpose.

At the end of year 1 then the capitalist has fixed capital worth £3,600, and £400 of cash in the sinking fund. At the end of year 2, fixed capital worth £3,200, and £800 in the sinking fund and so on.

Of course, the other way of looking at this would be to see the wear and tear as having to be covered in the form of repairs as Marx says, in that case, it is a matter of whether these repairs are more or less than anticipated, but for capital as a whole this averages out.

Suppose, the capitalist consumes all of the surplus value. Then his demand is equal to his supply of value, but that is not in relation to his capital, or his role as capitalist. As a capitalist, his demand is equal to £1,000 (£800 c + £200 v), which is equal to 5/6 of his supply £1,200 (Marx again says 4/5, but that is wrong). But, he consumes the other £200 = 1/6 of his output unproductively.

“His calculation, expressed in percentages, is then as follows:

Demand as capitalist 100, supply 120

Demand as man about town 20, supply —

Total demand 120, supply 120

This assumption is tantamount to assuming that capitalist production does not exist, and therefore that the industrial capitalist himself does not exist. For capitalism is abolished root and branch by the bare assumption that it is personal consumption and not enrichment that works as the compelling motive.” (p 123)

It is technically not possible either, because the capitalist has to create reserves to account for price fluctuations etc. But, more importantly, the capitalist has to extend his production and develop it technically in order to remain competitive. He must accumulate or die.

“In order to accumulate capital he must first withdraw in money-form from circulation a part of the surplus-value which he obtained from that circulation, and must hoard it until it has increased sufficiently for the extension of his old business or the opening of a side-line. So long as the formation of the hoard continues, it does not increase the demand of the capitalist. The money is immobilised. It does not withdraw from the commodity-market any equivalent in commodities for the money equivalent withdrawn from it for commodities supplied.” (p 123)

Chapter 5 - The Time of Circulation

Marx introduces a concept that is important to define to avoid confusion. That is the “*time of production*”. This is *not* the same as the time required *for* production. The concept here refers to the time the means of production are employed in the production stage of the circuit of capital.

So, Marx introduces two concepts here; the “*time of production*” and the “*time of circulation*”. The latter is the time capital (money-capital and commodity-capital) is employed in the circulation process, i.e. the time after production and until the commodity is sold, $C' - M'$, and the time between the money-capital buying means of production and labour-power, and them taking part in the production process, $M - C (MP + L) \dots P$. The sum of the time of production and the time of circulation is the total time the capital requires to complete its circuit.

The time of production is not equal to the time of the labour process, however. For example, if the working day is 8 hours, and there is only a single shift, the labour process lasts for 8 hours. But, all of the machinery, buildings and stocks of materials are still there during the other 16 hours of the day. The same is true of holiday periods etc.

Once again, it can be seen why capital is keen to ensure a continuous process of production.

“On the other hand the capitalist must have a definite supply of raw material and auxiliary material in readiness, in order that the process of production may take place for a longer or shorter time on a previously determined scale, without being dependent on the accidents of daily supply from the market.” (p 124)

Again this is one motivation for modern capitalism introducing *Just In Time* systems.

“There is, therefore, a difference between its time of production and its time of functioning. The time of production of the means of production in general comprises, therefore, 1) the time during which they function as means of production, hence serve in the productive process; 2) the stops during which the process of production, and thus the functioning of the means of production embodied in it, are interrupted; 3) the time during which they are held in readiness as prerequisites of that process, hence already represent productive capital but have not yet entered into the process of production.” (p 124-5)

This difference can be summarised as the time the capital is employed in the process of production, i.e. when it is actually being processed, and the time it is employed in the sphere of production, i.e. when it is not in the sphere of circulation.

But, for some commodities, the process of production itself can involve the capital being interrupted, without being the subject of the labour process. For example, wine requires time to ferment, seeds having been sown have to be left to grow. The same is true of many industrial processes too. For example, ceramics, bricks etc. have to spend time in a kiln, bread in an oven.

*“The time of production is here longer than the labour-time. The difference between the two consists in an excess of the production time over the labour-time. This excess always arises from the **latent** existence of productive capital in the sphere of production without functioning in the process of production itself or from its functioning in the productive process without taking part in the labour-process.” (p 125)*

All of the latent capital, such as stock of material, waiting to be processed, coal to be used for power etc., produces neither products nor value, during the period they lie fallow, even though they must be present for the production process to proceed smoothly. However, any labour used at this stage, for example, ensuring that material is properly stored, that coal is moved ready for use, and so on, is productive labour, because only part of it is paid for. It exchanges with capital not revenue. This labour adds to the cost of these materials, but also produces surplus value.

The machinery etc. transfers a part of its value to the end product, as a result of the production process, i.e. wear and tear. But, it also loses value that is not transferred to the end product. It is a total loss. That is the loss resulting from depreciation, i.e. a loss of value not due to wear and tear in the production process, but due solely to the time spent in the sphere of production.

Where means of production are tied up in the production process, but without being subject to the labour process, e.g. wine when it is fermenting, they do not absorb labour. Consequently, this time does not count as necessary labour-time in determining the value of the commodity. The value of the constant capital involved in this process is transferred to the end product, and the labour-time required for the actual labour process also forms part of the value of the end product.

“And if they do not absorb labour, they do not absorb surplus-labour, either. Hence there is no expansion of the value of productive capital so long as it stays in that part of its production time which exceeds the labour-time, no matter how inseparable from these pauses the carrying on of the process of self-expansion may be. It is plain that the more the production time and labour-time cover each other the greater is the productivity and self-expansion of a given productive capital in a given space of time. Hence the tendency of the capitalist production to reduce the excess of the production time over the labour-time as much as possible. But while the time of production of a certain capital may differ from its labour-time, it always comprises the latter, and this excess is itself a condition of the process of production. The time of production, then, is always that time in which a capital produces use-values and expands, hence functions as productive capital, although it includes time in which it is either latent or produces without expanding its value.” (p 127)

The time of circulation is the time required for the commodity-capital to be sold, and converted into money-capital. This time also covers the time required for the surplus value to be realised. It is also the time required for the money-capital to be converted into productive-capital.

“... these processes, as processes of circulation, are processes of the simple metamorphosis of commodities.” (p 127)

Time of circulation and time of production are mutually exclusive. During the former period, capital produces neither commodities nor value, and consequently surplus value. The longer the time of circulation, therefore, the shorter the time capital is being actively expanded, or put another way, if we view the process as the unity of the three circuits of capital, the longer the time of circulation the bigger proportion of the total capital is held as money-capital and commodity-capital, and the smaller the proportion is held as productive capital.

“The more the metamorphoses of circulation of a certain capital are only ideal, i.e., the more the time of circulation is equal to zero, or approaches zero, the more does capital function, the more does its productivity and the self-expansion of its value increase. For instance, if a capitalist executes an order by the terms of which he receives payment on

delivery of the product, and if this payment is made in his own means of production, the time of circulation approaches zero.” (p 128)

Political economy sees the consequence that the longer the period of circulation the higher prices seem to be, as a positive contribution to value, but this is not the case.

“We shall see later that even scientific Political Economy has been deceived by this appearance of things. Various phenomena, it will turn out, give colour to this semblance: 1) The capitalist method of calculating profit, in which the negative cause figures as a positive one, since with capitals in different spheres of investment, where only the time of circulation are different, a longer time of circulation tends to bring about an increase in prices, in short, serves as one of the causes of equalising profits. 2) The time of circulation is but a phase of the time of turnover; the latter however includes the time of production or reproduction. What is really due to the latter seems to be due to the time of circulation. 3) The conversion of commodities into variable capital (wages) is necessitated by their previous conversion into money. In the accumulation of capital, the conversion into additional variable capital therefore takes place in the sphere of circulation, or during the time of circulation. Consequently it seems that the accumulation thus achieved is owed to the latter.” (p 128-9)

The effect of higher prices for commodities with longer time of circulation that Marx refers to in equalising the rate of profit is not one he goes into, in great detail, in *Volume III*, in discussing the *Transformation Problem*. However, the effect referred to here amounts to the fact that the longer the time of circulation, the more total capital is required, and so the capital participates accordingly in the sharing of the total surplus value. It means that the rate of turnover of the capital is reduced. As Marx sets out in *Volume III*, and in more detail in *Theories of Surplus Value*, those capitals that have a lower than average rate of turnover of capital, have higher prices of production than their values, and vice versa. This is one reason that more productive capitals, that have higher rates of turnover of capital, have lower profit margins.

In general, it takes longer for commodity-capital to be metamorphosed into money-capital than it does for money-capital to be metamorphosed into productive capital.

“However, in capital’s process of circulation, its phase M — C has to do with its transformation into commodities which constitute definite elements of productive capital in a given enterprise. The means of production may not be available in the market and must first be produced or they must be procured from distant markets or their ordinary supply has become irregular or prices have changed, etc., in short there are a multitude of circumstances which are not noticeable in the simple change of form M — C, but which nevertheless requires now more, now less time also for this part of the circulation phase.” (p 129)

The processes of buying (means of production) and selling (final product) occur not just at different times, but usually in different places. Increasingly, the capitalist employs specialists to undertake these two aspects of the circulation process. But, the fact that workers are employed to undertake these functions does not thereby make them productive activities, any more than money-capital or commodity-capital is productive capital.

It is only productive-capital that produces value and surplus value, even though money-capital and commodity-capital are necessary to enable capital to pass through its full cycle.

“The agents of circulation must be paid by the agents of production. But the capitalists, who sell to and buy from one another, create neither values nor products by these acts, this state of affairs is not changed if they are enabled or compelled by the volume of their business to shift this function on to others. In some businesses the buyers and sellers get paid in the form of percentages on the profits. All talk about their being paid by the consumer does not help matters. The consumers can pay only in so far as they, as agents of production, produce an equivalent in commodities for themselves or appropriate it from production agents either on the basis of some legal title (as their co-partners, etc.) or by personal services.” (p 130)

For the capitalist, selling is more important than buying. Assuming commodities exchange at their values, buying, $M - C$, is necessary, but it only provides the productive capital required. It does not produce any surplus value. Selling, $C' - M'$, does not produce surplus value either, but it does realise the surplus value that has been produced.

Commodities are use values, and a commodity only continues to act also as an exchange value so long as its use value is intact. If a commodity loses its use value, it also ceases to possess exchange value.

This is clearly important when considering the various physical forms assumed by commodities as use values, and their time of circulation. Those commodities that are perishable clearly have a limited time that they can remain in the stage of circulation. Beyond it, they lose their use value and their exchange value, as a result. In general, non-perishable goods can remain in the circulation stage longer, but here too there are limits. Summer clothing will not have so much demand in Winter and vice versa, for example. But, even more durable goods have a limited shelf-life. Last year's personal computer or mobile phone etc. will have lost some of its use value simply because technological developments have produced enhanced products, so that older products no longer have the same relative functionality.

“The sale of the use-values in the form of commodities, hence their entry into productive or individual consumption effected through this sale is however the ever recurring condition of their reproduction. They must change their old use-form within a definite time in order to continue their existence in a new form. Exchange-value maintains itself only by means of this constant renewal of its body. The use-values of various commodities spoil sooner or later; the interval between their production and consumption may therefore be comparatively long or short; hence they can persist without spoiling in the circulation phase $C - M$ for a shorter or longer term in the form of commodity-capital, can endure a shorter or a longer time of circulation as commodities. The limit of the circulation time of a commodity-capital imposed by the spoiling of the body of the commodity is the absolute limit of this part of the time of circulation, or of the time of circulation of commodity-capital as such. The more perishable a commodity and the sooner after its production it must therefore be consumed and hence sold, the more restricted is its capacity for removal from its place of production, the narrower therefore is the spatial sphere of its circulation, the more localised are the markets where it can be sold. For this reason the more perishable a commodity is and the greater the absolute restriction of its time of circulation as commodity on account of its physical properties, the less is it suited to be an object of capitalist production. Such a commodity can come within its grasp only in thickly populated districts or to the extent that improved transportation eliminate distance. But the concentration of the production of any article in the hands of a few and in a populous district may create a relatively large market even for such articles as are the products of large breweries, dairies, etc.” (p 130-1)

Chapter 6 - The Costs of Circulation

I. Genuine Costs of Circulation

(a) The Time of Purchase and Sale

Capital is metamorphosed into its different forms. Money-capital becomes productive-capital, becomes commodity-capital, becomes money-capital. But, the means by which these metamorphoses occur, are so many acts of buying and selling. Capital as a thing goes through this process of metamorphosis, but the agent that brings it about via these acts of buying and selling is a human being – the capitalist.

As Marx put it at the beginning of *Volume I*,

“In the course of our investigation we shall find, in general, that the characters who appear on the economic stage are but the personifications of the economic relations that exist between them.”

(Capital Volume I, Chapter I, p 89)

Or as he put it in *“The Poverty of Philosophy”*,

“Time is everything, man is nothing; he is, at the most, time’s carcass.”

(Chapter 1)

Which sums up the true nature of the matter, that what we are dealing with here is the same kind of transformation seen elsewhere in nature, by which matter is transformed from one form to another as a consequence of the passage of time. Man here acts merely as the agent of the transformation.

“The time in which these transformations of forms take place constitutes subjectively, from the standpoint of the capitalist, the time of purchase and sale; it is the time during which he performs the functions of a seller and buyer in the market. Just as the time of circulation of capital is a necessary segment of its time of reproduction, so the time in which the capitalist buys and sells and scours the market is a necessary part of the time in which he functions as a capitalist, i.e., as personified capital. It is a part of his business hours.” (p 132)

If commodities exchange at their values, then the sale of any commodity simply means that its value takes a different form, as a consequence of the exchange. If it is exchanged for money, then the value of, say 10 metres of linen, is exchanged for the same value in gold. The fact that the linen producer takes longer to sell this 10 metres, than does some other linen producer, does not add any value to the linen. Its value is determined by the labour-time required for its production, not its circulation. On the contrary, the longer the linen exists as commodity-capital, the longer it takes to sell, the longer this capital is unproductive and not expanding. To this extent, it represents a cost to the capitalist, and a diminution of their potential surplus value. The time so spent, constitutes necessary labour, but not labour that adds to the value of the commodity.

Even if we assume that commodities do not exchange at their values this underlying reality still applies. Unequal exchange simply means that the advantage gained by one participant in the exchange is cancelled out by the loss suffered by the other participant. The total of the values of the commodities exchanged remains the same.

“To effect a change in the state of being costs of time and labour-power, not for the purpose of creating value, however, but in order to accomplish the conversion of value from one form into another. The mutual attempt to appropriate an extra slice of this value on this occasion changes nothing. This labour, increased by the evil designs on either side, creates no value, any more than the work performed in a judicial proceeding increases the value of the subject matter of the suit...”

Therefore, if the owners of the commodities are not capitalists but independent direct producers, the time employed in buying and selling is a diminution of their labour-time, and for this reason such transactions used to be deferred (in ancient and medieval times) to holidays.” (p 132-3)

The fact that, under capitalism, the scale of the exchange of commodities takes on mammoth proportions, and the fact that this function becomes assigned to specialist agents, who are paid by the capitalists to undertake it, cannot change the act of exchange into a productive act. It remains merely a means of transforming the form of value, not adding to it.

“These third persons will of course not tender their labour-power to the capitalist out of sheer love for them. It is a matter of indifference to the rent collector of a real-estate owner or the messenger of a bank that their labour does not add one iota or tittle to the value of either the rent or the gold pieces carried to another bank by the bagful.” (p 133)

It is precisely because capitalism produces on a massive scale that it must also buy and sell on a massive scale, and so what was once the function of many independent producers – the selling of their products and purchase of their means of production – becomes the specialised function of a relative few. These may be employed by the productive capitalist themselves in purchasing and marketing departments, or may be external agents in the form of merchant capital, to whom the productive capitalists sell, and from whom they buy.

*“But without going into this at length here this much is plain from the start: If by a division of labour a function, unproductive in itself although a necessary element of reproduction, is transformed from an incidental occupation of many into an exclusive occupation of a few, into their special business, the nature of this function itself is not changed. **One** merchant (here considered a mere agent attending to the change of form of commodities, a mere buyer and seller) may by his operations shorten the time of purchase and sale for **many** producers. In such case he should be regarded as a machine which reduces useless expenditure of energy or helps to set production time free.” (p 134)*

Marx discusses “*Capital In General*” in *Volume III*, where he describes how it is divided into *Interest-Bearing Capital*, *Productive Capital* and *Merchant Capital*. To avoid having to undertake that analysis here, prematurely, he assumes the person undertaking the role of merchant is a wage labourer.

*“He expends his labour-power and labour-time in the operations C — M and M — C. And he makes his living that way, just as another does by spinning or making pills. He performs a necessary function, because the process of reproduction itself includes unproductive functions. He works as well as the next man, but intrinsically his labour creates neither value nor product. He belongs himself to the **faux frais** of production. His usefulness does not consist in transforming an unproductive function into a productive one, nor unproductive into productive labour. It would be a miracle if such transformation could be accomplished by the mere transfer of a function.” (p 134-5)*

Marx then explains how it is that this wage labourer, who produces no additional new value, and yet receives back from society an amount of value in wages, can still be considered to have been exploited, to have performed unpaid labour.

The answer is quite simple. The labour performed does not add value to the product, but it is still necessary labour, without which the product cannot be sold. As such, this concrete labour itself has a value. Ultimately, the value of that concrete labour is determined in the market as with other labour, by the interaction of supply and demand – supply of labour-power by the workers and demand for it by capital. Lying behind that is the value of labour-power for this particular concrete labour. But, even if this particular form of labour, because of its specialised nature, has a high value, and receives high wages, that does not prevent it from being exploited.

Suppose those wages are equivalent to 8 hours of abstract labour-time, i.e. that is what is required to reproduce this particular type of labour, then if the worker works for 10 hours, they have still provided 2 hours of unpaid labour, 2 hours of surplus labour. It is not labour that has added any value to the commodity, but the capitalist who bought it obtained 10 hours of necessary labour, whilst paying for only 8!

*“But the two hours of surplus-labour he performs do not produce value any more than his eight hours of necessary labour, although by means of the latter a part of the social product is transferred to him. In the first place, looking at it from the standpoint of society, labour-power is used up now as before for ten hours in a mere function of circulation. It cannot be used for anything else, not for productive labour. In the second place however society does not pay for those two hours of surplus-labour, although they are spent by the individual who performs this labour. Society does not appropriate any extra product or value thereby. But the costs of circulation, which he represents, are reduced by one-fifth, from ten hours to eight. Society does not pay any equivalent for one-fifth of this active time of circulation, of which he is the agent. But if this man is employed by a capitalist, then the non-payment of these two hours reduces the cost of circulation of **his** capital, which constitutes a deduction from his income. For the capitalist this is a positive gain, because the negative limit for the self-expansion of his capital-value is thereby reduced. So long as small independent producers of commodities spend a part of their own time in buying and selling, this represents nothing but time spent during the intervals between their productive function or diminution of their time of production.” (p 135)*

Of course, as described previously in other contexts, what is said here, in terms of abstract labour-time, applies, only in modified form, to complex labour. If we think about a direct producer, such as a spinner, for instance, their labour may be considered complex. For example, 1 hour of their labour might be equal to 2 hours of abstract labour.

If the spinner has to spend 10 hours in a week selling their product, this is 10 hours they are not producing yarn. But, that 10 hours is equal to 20 hours of abstract labour-time. If the spinner employs a specialist to sell the yarn, this seller might again work 10 hours, as did the spinner. Yet, they might be paid 16 hours of abstract labour-time, meaning their labour is complex too. But, the spinner still benefits, to the extent of 4 hours of abstract labour-time, that they have saved, compared to if they had performed the function themselves.

In fact, precisely because the seller is a specialist, they might accomplish the task in 8 hours rather than 10. In that case, they get paid at the same rate as the spinner, if they continue to be paid 16 hours of abstract labour-time, whilst the spinner still makes a saving of 4 hours of abstract labour time.

“At all events the time consumed for this purpose constitutes one of the costs of circulation which adds nothing to the converted values. It is the cost of converting them from the commodity-form into the money-form. The capitalist producer of commodities acting as an agent of circulation differs from the direct producer of commodities only in the fact that he buys and sells on a larger scale and therefore his function as such agent assumes greater dimensions. And if the volume of his business compels or enables him to buy (hire) circulation agents of his own to serve as wage-labourers, the nature of the case is not changed thereby. A certain amount of labour-power and labour-time must be expended in the process of circulation (so far as it is merely a change of form). But this now appears as an additional investment of capital. A part of the variable capital must be laid out in the purchase of this labour-power functioning only in circulation. This advance capital creates neither product nor value.” (p 135-6)

(b) Book-keeping

A similar situation applies to book-keeping. The small peasant producer had less need to keep detailed and accurate books. But, the time they did spend on them was clearly seen by them as a cost, as unproductive time that could otherwise have been used productively. In addition, the costs involved in buying pens, paper etc. to keep those books, was also unproductive expenditure that could have been used to buy seed, cotton etc.

In the Indian village communes, a separate book-keeper was employed, and here it becomes apparent that their labour, although necessary adds nothing to the villages store of products and value. The book-keeper has to be supported out of the village's social product, and, therefore, they represent a cost, not an addition to the value produced.

The fact that this function, under capitalism becomes much more important and necessary, and its scale and specialisation increases, does not change its fundamental nature. The labour-time involved in producing, the materials used by them – including today expensive computer hardware and software – is necessary, but not productive of new value.

The capitalist, starting a new business has to lay out constant and variable capital for this function, but it adds no value to the product. An existing capitalist has to deduct each year a portion of their surplus value, in order to reproduce the book-keeper and their materials.

(c) Money

Capitalist production of both goods and services implies a continual expansion of these commodities coming on to the market. This continual expansion of capital implies an expansion of the ideal form of its value, i.e. of money.

Even where that money is not in circulation, but is stored up in hoards and reserves, i.e. where it is latent, it still has to exist, still has to have been produced. Gold and silver etc. produced as commodities, to be used in jewellery, ornaments, cutlery or electrical circuits are commodities that have a use value as well as value. But, gold and silver produced as money give up their use value functions in order to become the universal equivalent form of value. Their only function then, their use value is to act as money.

But, in this role they do not add anything to social wealth. Yet, in this role, their use in circulation means they become worn out and need to be replaced. Social labour-time has to be expended not to increase social wealth, but merely to replace worn out means of circulation. This is one reason precious metal is replaced by paper currency and credit-money, which reduces the overhead costs of circulation for capital.

II. Costs of Storage

(a) Formation of Supply in General

Commodity-capital constitutes supply in the market. It appears in a dual role. Firstly, as commodity-capital, in the shape of end products waiting to be sold. But, for some other capital these end products may also be means of production.

“It is, indeed, possible that this last-named commodity-capital is not produced until ordered. In that event an interruption occurs until it has been produced. But the flow of the process of production and reproduction requires that a certain mass of commodities (means of production) should always be in the market, should therefore form a supply. Productive capital likewise comprises the purchase of labour-power, and the money-form is here only the value-form of the means of subsistence, the greater part of which the labourer must find at hand in the market.” (p 140)

The commodity-capital in the form of end products needs to be sold as quickly as possible because any delay represents an interruption in the conversion of this capital into money, and from there into the reproduction of productive capital. Moreover, as previously described, all commodities have a limited shelf life in circulation before they lose use value and with it exchange value.

At the same time, commodity-capital in the shape of means of production, always needs to be available in the market, or else it will cause a delay in the reproduction of productive capital.

“The abidance of the commodity-capital as a commodity-supply in the market requires buildings, stores, storage places, warehouses, in other words, an expenditure of constant capital; furthermore the payment of labour-power for placing the commodities in storage. Besides, commodities spoil and are exposed to the injurious influences of the elements. Additional capital must be invested, partly in instruments of labour, in material form, and partly in labour-power to protect the commodities against the above.” (p 141)

The importance of this was seen in the USSR. Its agriculture was frequently plagued by the fact that, whereas large amounts of resources were devoted to producing tractors, fertiliser etc., not enough was spent on storage facilities, and transport. Consequently, large amounts of value was destroyed as crops rotted after being harvested.

These costs are not costs of production, but of circulation. Viewed from the standpoint of society, these costs do not create additional social wealth, i.e. they do not create additional value, but they are not the same as the costs of circulation previously described. They simply enable commodity value in one form to be transformed from one form to another via exchange.

However, these costs of storage etc. do enter into the value of the particular commodities involved, to the extent that they increase their prices. In a sense, they are like the waste cotton dust that is inevitably involved in producing yarn. In reality, what this represents is that, although social wealth has not been increased, by the need to produce these storage facilities, by the expenditure of social labour-time, society has to compensate the capitalists that built them. It represents a transfer of value from other capitalists.

Marx gives the analogy of insurance. Where capitalists take out insurance, against losses caused by fire, the insurance itself does not create one bit of additional value for society. However, if any particular capitalist does suffer a loss, due to fire, the insurance

compensates them for it. That compensation does not come out of nowhere. It is a transfer from other capitalists, who have paid out insurance premiums to cover themselves for such eventualities.

The same applies here. The grain supplier does not add value to the grain by storing it in a silo. But doing so is necessary insurance against it being destroyed. That necessary cost increases the price of the grain, and the addition is made possible by a transfer of value from other capitals.

*“At all events the capital and labour-power which serve the need of preserving and storing the commodity-supply are withdrawn from the direct process of production. On the other hand the capitals thus employed, including labour-power as a constituent of capital, must be replaced out of the social product. Their expenditure has therefore the effect of diminishing the productive power of labour, so that a greater amount of capital and labour is required to obtain a particular useful effect. They are **unproductive costs**.”* (p 141-2)

Adam Smith argued that the formation of supply was peculiar to capitalism. Marx says this is wrong.

“As a matter of fact, supplies exist in three forms: in the form of productive capital, in the form of a fund for individual consumption, and in the form of a commodity-supply or commodity-capital. The supply in one form decreases relatively when it increases in another, although its quantity may increase absolutely in all three forms simultaneously.” (p 142)

Under direct production, little in the way of commodity-capital is needed, but the producer needs a larger supply for individual consumption. But, Marx explains,

“It does not assume the form of a commodity-supply and for this reason Adam Smith declares that there is no supply in societies based on this mode of production. He confuses the form of the supply with the supply itself and believes that society hitherto lived from hand to mouth or trusted to the hap of the morrow. This is a naive misunderstanding.” (p 143)

Under these previous modes of production, the supply of productive capital took the form of a stock of means of production. The difference here is that capitalism develops the productivity of labour by a greater development of the technical instruments of labour, which in turn leads to the extension of the means of production.

“The material forms of existence of constant capital, the means of production, do not however consist only of such instruments of labour but also of materials of labour in various stages of processing, and of auxiliary materials. With the enlargement of the scale of production and the increase in the productive power of labour through co-operation, division of labour, machinery, etc., grows the quantity of raw materials, auxiliary materials, etc., entering into the daily process of reproduction. These elements must be ready at hand in the place of production. The volume of this supply existing in the form of productive capital increases therefore absolutely, in order that the process may keep going — apart from the fact whether this supply can be renewed daily or only at fixed intervals — there must always be a greater accumulation of ready raw material, etc., at the place of production than is used up, say, daily or weekly. The continuity of the process requires that the presence of its conditions should not be jeopardised by possible interruptions when making purchases daily, nor depend on whether the product is sold daily or weekly, and hence is reconvertible into its elements of production only irregularly. But it is evident that productive capital may be latent or form a supply in quite different proportions. There is for

instance a great difference whether the spinning-mill owner must have on hand a supply of cotton or coal for three months or for one. Patently this supply, while increasing absolutely, may decrease relatively.” (p 144-5)

The more capitalist production is developed, facilitating transport and communication, then the more regular and rapid becomes the supply of these necessary means of production. As a result, the less the individual capitalist needs to hold as latent capital, of these items.

But, this reduction in supply, held as latent capital, does not represent a reduction in supply in total, only a change in its form, e.g. coal supplies may not be held as stocks by capitalists burning it, but take the form of productive-capital and commodity-capital regularly supplied by the coal producer.

“In the third place the development of the credit-system also exerts an influence. The less the spinner is dependent on the direct sale of his yarn for the renewal of his supply of cotton, coal, etc. — and this direct dependence will be the smaller, the more developed the credit-system is — the smaller relatively these supplies can be and yet ensure a continuous production of yarn on a given scale, a production independent of the hazards of the sale of yarn.” (p 145-6)

Other commodities, required as means of production, can take long periods to produce, e.g. agricultural products. If production is not to be interrupted, then a large stock must be in hand to suffice until the next crop. Where productive capitalists managed to reduce such stocks it was to the extent that merchant capitalists held them instead. Modern capitalism resolves this problem also by sourcing supply from different parts of the globe and by replacing natural products with synthetic equivalents.

(b) The Commodity-Supply Proper

Under capitalism, products increasingly take the form of commodities. Because few commodities are immediately consumed, - productively or individually – a growing volume of commodities take the form of commodity-capital, as capitalist production expands. There are two aspects to this. On the one hand, as previously described, this represents a change of form of supply. Under capitalism, compared to direct production, supply in the form of commodity-capital simply replaces what was supply in the form of means of subsistence and production held by the peasant producer for their own requirements. On the other hand, the absolute increase in total supply resulting from the much larger total production of capitalism is reflected in this volume of commodity-capital.

“With the development of capitalist production, the scale of production is determined less and less by the direct demand for the product and more and more by the amount of capital available in the hands of the individual capitalist, by the urge of self-expansion inherent in his capital and by the need of continuity and expansion of the process of production. Thus in each particular branch of production there is a necessary increase in the mass of products available in the market in the shape of commodities, i.e., in search of buyers. The amount of capital fixed for a shorter or longer period in the form of commodity-capital grows. Hence the commodity-supply also grows.” (p 147)

The peasant producer, who produces to directly meet their own requirements, has food in the ground, or small stores, to use when required. They can spin and weave as required to meet their needs. But, the true wage worker has none of these things. They have to buy all their requirements in the market. They must eat daily, and so must be able to go to a shop daily to buy their requirements. But, the shop must have these requirements already to hand as a stock. It must keep a large portion of its capital as commodity-capital. There is

no point the shop sending out to the producer for supplies only when the worker comes in to ask for them!

“Although the separate elements of this supply may be in continuous flow, a part of them must always stagnate in order that the supply as a whole may remain in a state of flux.” (p 147)

These characteristics of capitalist circulation are then a consequence of the nature of capitalist production itself.

But, as previously described, all societies need to set aside some social labour-time, not just for producing commodities, but to preserving them after production. It does not add to the value of social production, but is a necessary cost to it. Capitalist production, because it so massively increases output, and because a greater portion of this output is held in the form of commodity-capital, waiting to be sold, increases in absolute terms, the need for such expenditure. On the other hand, because capitalism so massively increases output, the relative costs of storage etc. can fall. It can fall also because greater numbers of consumers are packed together in towns and cities, creating large accessible markets. Finally, the same increases in productivity that capitalism brings about in production generally, brings about the same kind of benefits in reducing the costs of providing buildings and other forms of storage.

*“If the capitalist has converted the capital advanced by him in the form of means of production and labour-power into a product, into a definite quantity of commodities ready for sale, and these commodities remain in stock unsold, then we have a case of not only the stagnation of the process of self-expansion of his capital-value during this period. The costs of preserving this supply in buildings, of additional labour, etc., mean a positive loss. The buyer he would ultimately find would laugh in his face if he were to say to him: 'I could not sell my goods for six months, and their preservation during that period did not only keep so and so much of my capital idle, but also cost me so and so much extra expense.' **“Tant pis pour vous!”** the buyer would say. 'Right here alongside of you is another seller whose wares were completed only the day before yesterday. Your articles are shop-worn and probably more or less damaged by the ravages of time. Therefore you will have to sell cheaper than your competitor.’” (p 148)*

The capitalist, therefore, has an incentive to minimise these costs by minimising the time the commodities are in circulation. That reduces the costs of storage etc. and speeds up the time that can be reproduced as productive-capital.

It doesn't matter whether this supply, in the form of a stock of commodity-capital is voluntary or involuntary, in this respect. A voluntary supply arises because the seller recognises the need to keep on hand a certain level of stock to meet anticipated demand. An involuntary supply arises when actual demand is less than anticipated demand. So, when economic data shows an increase in inventories occurred, this can be either a sign of economic health or weakness. It can reflect producers and sellers anticipating an increase in demand – voluntary supply – or it can reflect the fact that commodities were left unsold – involuntary supply.

If we take potatoes being sold on a market stall, the seller knows that they will not all be sold at once when they open the stall. They expect the number of buyers to accumulate over the course of the day. So, their supply for the day must be sufficient to last the whole day. A proportion of the supply remains stagnant through the day until it is sold, whilst another and increasing part becomes fluid as it is sold and converted into money.

The stall holder also has to have a supply for the day which is larger than the average day's demand, because otherwise they will not have sufficient supply to cover those days when demand is above average, which would mean losing income.

So, a stagnant supply is also a necessary condition for sale. But, the sales from that supply must also be replaced so that sales can continue on another day. It doesn't matter where these replacements come from, but it's obvious that their origin can only be in production. The stall holder might obtain them from another retailer, a wholesaler, from nearby or from the other side of the globe, but they can only arise because they have been produced. The fact that they are in the hands of another retailer or wholesaler only means they have passed through additional hands.

But, as indicated previously, different commodities have different times of production. Some commodities take minutes to produce and others years. In order to ensure that these different types of commodities are continuously available, in the market, different levels of supply are needed.

“The producer tries to keep a stock corresponding to his average demand in order not to depend directly on production and to ensure for himself a steady clientele. Purchase periods corresponding to the periods of production are formed and the commodities constitute supplies for longer or shorter time, until they can be replaced by new commodities of the same kind. Constancy and continuity of the process of circulation, and therefore of the process of reproduction, which includes the process of circulation, are safeguarded only by the formation of such supplies.” (p 150)

If the producer of a commodity sells it to a merchant C' – M', they realise the value of their productive-capital and the surplus value. They can then proceed to reproduce and expand their productive-capital, even though their commodity is still in the market, still in the process of circulation. Had he sold it himself he would have had to have had two capitals employed. His own plus that equal to the merchant's, required for its circulation. From the standpoint of society, just as much capital, social labour-time, is required in either case, but from the standpoint of the producer, less capital is required, and more of their capital can be kept in its productive form, thereby increasing its potential for expansion.

*“Since the commodity-supply is nothing but the commodity-form of the product which at a particular level of social production would exist either as a productive supply (latent production fund) or as a consumption-fund (reserve of means of consumption) if it did not exist as a commodity-supply, the expenses required for its preservation, that is, the costs of supply formation — i.e., materialised or living labour spent for this purpose — are merely expenses incurred for maintaining either the social fund for production or the social fund for consumption. The increase in the value of commodities caused by them distributes these costs simply **pro rata** over the different commodities, since the costs differ with different kinds of commodities. And the costs of supply formation are as much as ever deductions from the social wealth, although they constitute one of the conditions of its existence.” (p 150-1)*

The existence of a commodity supply, i.e. of stocks of commodities, waiting to be sold, is only normal in the sense that it is a necessary condition for those commodities to be sold. That is like the reserves of money that have to be held in order that productive-capital can be bought without waiting for all production to be sold first.

But, when reserves of money are held because productive-capital is not available to be bought, or indeed because the producer decides not to buy, because they fear expanded production could not be sold, this is not normal. It constitutes a stagnation or breakdown in

the circuit of capital. The same is true where commodity-capital exists as supply because it cannot be sold.

“It does not make any difference whether this jam occurs in the warehouses of the industrial capitalist or in the storerooms of the merchant. The commodity-supply is in that case not a prerequisite of uninterrupted sale, but a consequence of the impossibility of selling the goods. The costs are the same, but since they now arise purely out of the form, that is to say, out of the necessity of transforming the commodities into money and out of the difficulty of going through this metamorphosis, they do not enter into the values of the commodities but constitute deductions, losses of value in the realisation of the value. Since the normal and abnormal forms of the supply do not differ in form and both clog circulation, these phenomena may be confused and deceive the agent of production himself so much the more since for the producer the process of circulation of his capital may continue while that of his commodities which have changed hands and now belong to merchants may be arrested. If production and consumption swell, other things being equal, then the commodity-supply swells likewise. It is renewed and absorbed just as fast, but its size is greater. Hence the bulging size of the commodity-supply, for which stagnant circulation is responsible, may be mistaken for a symptom of the expansion of the process of reproduction, especially when the development of the credit-system makes it possible to wrap the real movement in mystery.” (p 151)

The costs of maintaining this supply are three fold. The commodities may diminish in quantity, as happens with grain, or with ice. Their quality may diminish. Finally, there is the cost of producing the storage facilities and of the labour-power to operate them.

III. Costs of Transportation

*“The general law is that **all costs of circulation, which arise only from changes in the forms of commodities do not add to their value.** They are merely expenses incurred in the realisation of the value or in its conversion from one form into another. The capital spent to meet those costs (including the labour done under its control) belongs among the **faux frais** of capitalist production. They must be replaced from the surplus-product and constitute, as far as the entire capitalist class is concerned, a deduction from the surplus-value or surplus-product, just as the time a labourer needs for the purchase of his means of subsistence is lost time.” (p 152)*

The circulation of commodities as much as the production of commodities involves a transformation of matter. In production, matter is physically transformed as a result of chemical and mechanical processes. In circulation, matter in the form of one commodity is metamorphosed into matter in the form of some other commodity via the process of exchange.

This process of exchange can mean that matter in the form of one commodity is moved physically to the location of the other, and vice versa. But, it need not.

“Within the circuit of capital and the metamorphosis of commodities, which forms a part of the circuit, an interchange of matter takes place in social labour. This interchange of matter may necessitate a change of location of products, their real motion from one place to another. Still, circulation of commodities can take place without physical motion by them, and there can be transportation of products without circulation of commodities, and even without a direct exchange of products. A house sold by A to B does not wander from one place to another, although it circulates as a commodity. Movable commodity-values, such as cotton or pig iron, may lie in the same storage dump at a time when they are passing through dozens of circulation processes, are bought and resold by speculators. What really

does move here is the title of ownership in goods, not the goods themselves. On the other hand, transportation played a prominent role in the land of the Incas, although the social product neither circulated as a commodity nor was distributed by means of barter.” (p 152)

Consequently, although under capitalism transportation costs can appear to be the same as circulation costs, they are not.

“Quantities of products are not increased by transportation. Nor, with a few exceptions, is the possible alteration of their natural qualities, brought about by transportation, an intentional useful effect; it is rather an unavoidable evil. But the use-value of things is materialised only in their consumption, and their consumption may necessitate a change of location of these things, hence may require an additional process of production, in the transport industry. The productive capital invested in this industry imparts value to the transported products, partly by transferring value from the means of transportation, partly by adding value through the labour performed in transport. This last-named increment of value consists, as it does in all capitalist production, of a replacement of wages and of surplus-value.” (p 153)

Actually, I think Marx is wrong in his analysis here. I do not believe that transportation costs increase the value of the commodity being transported. I think that what the consumer buys is two separate commodities, one of which is the transport of the other. That can be seen clearly in the way many commodities are advertised for sale. That is that the commodity is advertised at a certain price, irrespective of the location of the buyer, and then a delivery charge is levied, which is specific to the location of the buyer.

Nor is this undermined by the fact that some of these commodities are used as inputs in the production of other commodities.

Marx says,

“Within each process of production, a great role is played by the change of location of the subject of labour and the required instruments of labour and labour-power — such as cotton trucked from the carding to the spinning room or coal hoisted from the shaft to the surface. The transition of the finished product as finished goods from one independent place of production to another located at a distance shows the same phenomenon, only on a larger scale. The transport of products from one productive establishment to another is furthermore followed by the passage of the finished products from the sphere of production to that of consumption. The product is not ready for consumption until it has completed these movements.” (p 153)

But, Marx's argument does not hold up here. A coal mine that has greater costs, because its coal has to be dug from deeper seams, and moved further to the surface, than its more fortunate competitor, is not able, thereby, to recover these higher costs in a higher price for its coal! The exchange value of coal is determined by the average social labour-time required for its production. That is an average which takes into consideration the higher costs of one, and the lower costs of the other. But, the consequence of this is that the coal producer with lower production costs, i.e. whose coal has a lower individual value, makes above average profits, whilst the coal producer with higher than average costs, i.e. whose coal has a higher individual value, makes below average profits. That is so because the lower cost producer sells its coal with a lower individual value, still for the exchange value, making an additional surplus, whilst the producer with above average costs sells its coal with a higher individual value, still sells it at the exchange value, and thereby makes less surplus value.

The coal mine clearly represents the sphere of production as much as does the factory, and moving the productive capital and the commodity capital around within it constitute time of production and production costs.

But, the transportation costs involving moving the coal to London rather than selling it in Newcastle are not aggregated in the same way into determining the exchange value of coal! They do not constitute part of the socially necessary labour-time required for producing coal, in the same way they are for moving it from deeper seams. If that were the case, coal would sell at the same price in Newcastle as in London including the transportation costs. That would mean consumers in Newcastle bearing some of the costs of shipping coal to London!

That did not and does not generally happen. Iron makers located production first near to forests and then to coal fields precisely to avoid paying the costs of transportation of their fuel. Pottery manufacture was concentrated in North Staffordshire because of the availability of clay, coal and from nearby, in Cheshire, salt for glazing. But, it is the specific buyer that pays the necessary additional transport costs not the buyer in general.

In short, transport constitutes a commodity in its own right, and where the buyer is remote from the source of supply, the buyer has to purchase this additional commodity.

Consider it from the opposing viewpoint. Suppose I purchase the commodity of watching the FA Cup Final. For the same ticket, I will pay the same price as someone who lives in walking distance of the stadium. But, to get to consume the commodity I have to move my location, as moving the location of the stadium is not practical. Yet, in terms of space-time relativity, me moving to the stadium is the same as the stadium moving to me. But, moving myself involves a transport cost of say £100 for a train ticket. The exchange value of the FA Cup Ticket has not changed, and why would it, the price of production is not and cannot be affected by where I am located!

I have simply had to purchase an additional commodity – a train journey – to be able to consume it. Otherwise, we end up with the ridiculous situation in which the same commodity, at the same time, has a multitude of different exchange values determined by the costs of different consumers being able to consume it due to their varying locations.

Mutatis mutandis, however, most of what Marx then goes on to say about transport holds. That is that the same laws that apply in relation to other forms of production apply. So,

“The productivity of labour is inversely proportional to the value created by it. This is true of the transport industry as well as of any other. The smaller the amount of dead and living labour required for the transportation of commodities over a certain distance, the greater the productive power of labour, and vice versa.” (p 153)

Where Marx says,

“The absolute magnitude of the value which transportation adds to the commodities stands in inverse proportion to the productive power of the transport industry and in direct proportion to the distance travelled, other conditions remaining the same.” (p 154)

I would say,

“The absolute magnitude of the value of the product of transport stands in inverse proportion to the productive power of the transport industry and in direct proportion to the distance travelled, other conditions remaining the same.”

And where he says,

“The relative part of the value added to the prices of commodities by the costs of transportation, other conditions remaining the same, is directly proportional to their cubic content and weight, and inversely proportional to their value.” (p 154)

I would instead say,

“The value of the product of transport is equal to the average socially necessary labour-time required to transport the objects being moved from their current to their new location.”

That includes the aspects that Marx describes, that higher value articles have higher costs of transport, because more labour-time is required to ensure their safe transport.

“The capitalist mode of production reduces the costs of transportation of the individual commodity by the development of the means of transportation and communication, as well as by concentration — increasing scale — of transportation. It increases that part of the living and materialised social labour which is expended in the transport of commodities, firstly by converting the great majority of all products into commodities, secondly, by substituting distant for local markets.” (p 154-5)

For the reasons described above, I would, therefore, modify Marx's final comment.

*“The circulation, i.e., the actual locomotion of commodities in space, resolves itself into the transport of commodities. The transport industry forms on the one hand an independent branch of production and thus a separate sphere of investment of productive capital. On the other hand its distinguishing feature is that it appears as a continuation of a process of production **within** the process of circulation and **for** the process of circulation.” (p 155)*

The physical movement of commodities is an independent branch of production and sphere of investment for productive capital. That is true whether it is pottery being transported by pack horse, clay by canal barge, coal by steam locomotive, tea by sailing clipper, or software via the Internet.

The product of this industry, transport, is a commodity in its own right, and bought and sold as such, separate from the objects being transported, be they commodities themselves, or passengers. It is only because it moves commodities as well as passengers that it *appears* to be a continuation of a process of production within the sphere of circulation. In fact, it is a separate act of production in its own right.

Chapter 7 - The Turnover Time and the Number of Turnovers

The entire turnover period of capital is the total of the time of production and time of circulation. The objective of this process, under capitalism, is not the production of commodities, of items of consumption, but of surplus value, the self-expansion of the capital. Once capitalist production has commenced, it does not just reproduce what it has consumed, in the productive process, but must also reproduce capital, i.e. reproduce the very need to expand.

In the three circuits of capital, this self-expansion is manifest. In the circuit of money-capital, $M - M'$. It is manifest in the final term, but also in the expansion of this circuit to show that surplus value has been created. In the circuit of productive capital, $P...P$, it is again manifest in the expansion of that circuit, to illustrate the production of surplus value. But, neither of these circuits demonstrate that this expansion is more than a potential. In $M - M'$, we do not know what happens to M . The capitalist could shut up shop. In $P...P$, we know that M has been reinvested to buy P , but again there is no reason that the second P should represent more capital than the first. However, in the circuit of commodity capital, $C' - C'$, we have from the beginning a statement that the advanced capital has been expanded. Whether or not the surplus-value arising from that is consumed or accumulated, the second term also indicates that capital has expanded.

“If the process is renewed on the same scale, M is again the starting-point and m does not enter into it, but shows merely that M has self-expanded as capital and hence created a surplus-value, m , but cast it off. In the form $P ... P$ capital-value P advanced in the form of elements of production is likewise the starting-point. This form includes its self-expansion. If simple reproduction takes place, the same capital-value renews the same process in the same form P . If accumulation takes place, then P' (equal in magnitude of value to M' , equal to C') reopens the process as an expanded capital-value. But the process begins again with the advanced capital-value in its initial form, although with a greater capital-value than before. In form III, on the contrary, the capital-value does not begin the process as an advance, but as a value already expanded, as the aggregate wealth existing in the form of commodities, of which the advanced capital-value is but a part.” (p 157)

However, for this reason, this third circuit is no use for analysing the turnover of capital. The first circuit, $M - M'$, is useful in certain conditions, and where the value of the money-capital is held constant. But, where that is not the case, and, therefore, for analysing things such as the rate of profit, it is the second circuit $P...P$, which is relevant, because it is based upon the value of the advanced capital in its commodity form, as productive capital, and it is that which has to be physically reproduced. The circuit $M - M'$, in that context, is only relevant in respect of analysing newly invested capital – including that arising from surplus value, i.e. of accumulation.

“Of the circuits I and II, the former is of service in a study primarily of the influence of the turnover on the formation of surplus-value and the latter in a study of its influence on the creation of the product.” (p 157)

In general, economists have viewed things only through the lens of the circuit $M - C - M'$. That is because it is on that basis that individual capitalists have calculated their specific profits.

The problem here is that, as Marx says, $M - C - M'$ only provides a potential for the reproduction of the capital. As stated, there is no reason why the money-capital here reproduced would be invested. The capitalist could simply take all their money and spend it. But, that would be to present a view of capital alien to its nature, as self-expanding value. The whole point of the circuit of productive-capital, $P...P$, is that it illustrates the true nature of industrial capital, and its need to continually reproduce itself, i.e. to continually reproduce its physical components, in the form of the various commodities – machines, raw materials, labour-power etc. - whether it does so only at the level of simple reproduction, or of expanded reproduction.

Its in this context, of the need, during the year, to be continually reproducing these commodities, as they are consumed, in the production process, that makes the analysis of the rate of turnover of this capital important.

“Just as the working day is the natural unit for measuring the function of labour-power, so the year is the natural unit for measuring the turnovers of functioning capital. The natural basis of this unit is the circumstance that the most important crops of the temperate zone, which is the mother country of capitalist production, are annual products. If we designate the year as the unit of measure of the turnover time by T , the time of turnover of a given capital by t , and the number of its turnovers by n , then $n = T/t$. If, for instance, the time of turnover t is 3 months, then n is equal to $12/3$, or 4; capital is turned over four times per year. If $t = 18$ months, then $n = 12/18 = \frac{2}{3}$, or capital completes only two-thirds of its turnover in one year. If its time of turnover is several years, it is computed in multiples of one year.

From the point of view of the capitalist, the time of turnover of his capital is the time for which he must advance his capital in order to create surplus-value with it and receive it back in its original shape.” (p 159)

Chapter 8 - Fixed Capital and Circulating Capital

1. Distinctions of Form

Fixed capital loses a portion of its use value, as a consequence of wear and tear. In the same proportion, it transfers value, as constant capital, to the product it helps create. The proportion of its use value lost, and the proportion of its value transferred to the product, is calculated as an average. A machine that lasts, on average, ten years, before it has to be replaced, loses a tenth of its use value, on average, each year, and transfers a tenth of its value, each year, to the products it helps create.

The products, created by the instruments of labour, leave the sphere of production as commodities and enter the sphere of circulation. A part of the value of the instruments of labour is embodied in them, but the instruments of labour themselves never leave the sphere of production.

*“Their function holds them there. A portion of the advanced capital-value becomes **fixed** in this form determined by the function of the instruments of labour in the process. In the performance of this function, and thus by the wear and tear of the instruments of labour, a part of their value passes on to the product, while the other remains fixed in the instruments of labour and thus in the process of production. The value fixed in this way decreases steadily, until the instrument of labour is worn out, its value having been distributed during a shorter or longer period over a mass of products originating from a series of constantly repeated labour-processes. But so long as they are still effective as instruments of labour and need not yet be replaced by new ones of the same kind, a certain amount of constant capital-value remains fixed in them, while the other part of the value originally fixed in them is transferred to the product and therefore circulates as a component part of the commodity-supply. The longer an instrument lasts, the slower it wears out, the longer will its constant capital-value remain fixed in this use-form. But whatever may be its durability, the proportion in which it yields value is always inverse to the entire time it functions. If of two machines of equal value one wears out in five years and the other in ten, then the first yields twice as much value in the same time as the second.” (p 161)*

In a sense, all capital is circulating capital. It is just that the total value of fixed capital takes much longer to circulate. Only a portion of it circulates at a time. A machine that lasts ten years will circulate a tenth of its value each year, so that after ten years, all of its value will have been circulated, i.e. each year, a tenth of its value will have entered the value of the commodity, which will then have been converted into money, C-M, which is the equivalent to a tenth of the value of the machine, and so can be used to reproduce it.

But, unlike raw material, which enters bodily into the commodity, it is not the use value of the machine that enters the commodity, but only the value. The machine can only continue to function, indeed, if it remains fully intact.

*“It is this peculiarity which gives to this portion of constant capital the form of **fixed capital**. All the other material parts of capital advanced in the process of production form by way of contrast the **circulating, or fluid, capital**.” (p 161)*

Some elements of circulating capital share, with fixed capital, the feature that they do not enter themselves materially into the commodity. For example, auxiliary material, like lubricating oil, is used to keep machines running, coal or electricity may be used to power the machines, gas may be used to provide heating for the factory.

All of these things do not pass physically into the commodity, but they are necessary for its production, and their value passes into it. This led some economists, such as Ramsay, to mistakenly classify such capital as fixed. It is not, because in each labour process, its material form is completely used up, and has to be materially replaced.

This is quite separate from the fact of stocks of such materials. If I have ten tons of coal, and use one ton in a week, for power, that one ton has become completely used up, and has to be replaced. If I have a machine, and a tenth of it is used up, the machine itself remains intact, a tenth of it does not have to be replaced.

By contrast, raw materials enter into the commodity in a form that enables them to be articles of use.

“The instruments of labour properly so called, the material vehicles of the fixed capital, are consumed only productively and cannot enter into individual consumption, because they do not enter into the product, or the use-value, which they help to create but retain their independent form with reference to it until they are completely worn out.” (p 162)

That, of course, is not to say that instruments of labour cannot also be commodities for individual consumption. A power drill is an instrument of labour, when used in a factory, but also an article of individual consumption when bought for the purpose of DIY.

All that Marx is saying here is that, in so far as something acts as an instrument of labour, it is not its physical elements, its use value, that enters the end product. Something, which has been an instrument of labour, can, of course, itself become an article of consumption.

“As a beast of toil an ox is fixed capital. If he is eaten, he no longer functions as an instrument of labour, nor as fixed capital either.” (p 163)

With transport, the product is not some physical product, into which raw materials enter. The means of production, and instruments of labour, are used to produce a useful effect, a use value, that is consumed by the buyer in the very act of production of that useful effect. The useful effect is the transformation from one place to another, and the productive process is itself the movement involved. The consumer, be it a passenger or someone whose goods are moved, consumes that useful effect, as it is being produced.

The same is true of other such commodities that are useful effects rather than physical products. I consume the useful effect produced by a singer, or a comedian, or an actor, or a teacher in the very act of them producing that effect.

But, here too, the capital involved in producing these effects is divided into fixed and circulating, as well as constant and variable. Variable capital is always circulating capital. The train driver's labour-power is fully consumed during the production process, so is that of the comedian, singer or teacher, just as much as that of the factory worker.

The coal used to power the train, the electric light to illuminate the theatre, and the chalk used by the teacher, are also used up in the production process. So, these are circulating capital. But, the train and track, and buildings, the theatre and its lighting and other equipment, the school and the desks and chairs etc. are not fully used up in the production process. They wear out only gradually. They are fixed capital.

“All other circumstances being equal, the degree of fixity increases with the durability of the instrument of labour. It is this durability that determines the magnitude of the difference between the capital-value fixed in instruments of labour and that part of its value which it yields to the product in repeated labour-processes. The slower this value is yielded — and

value is given up by the instrument of labour in every repetition of the labour-process — the larger is the fixed capital and the greater the difference between the capital employed in the process of production and the capital consumed in it. As soon as this difference has disappeared the instrument of labour has outlived its usefulness and has lost with its use-value also its value. It has ceased to be the depository of value. Since an instrument of labour, like every other material carrier of constant capital, parts with value to the product only to the extent that together with its use-value it loses its value, it is evident that the more slowly its use-value is lost, the longer it lasts in the process of production, the longer is the period in which constant capital-value remains fixed in it.” (p 163-4)

Auxiliary materials are neither raw materials that enter the final product, nor, in the strict sense, instruments of labour. Lubricating oil does not enter as a component of the product, made by a machine, but neither is it the machine itself. For some auxiliary materials, they become blended with, and inseparable from, the instrument of labour, however.

Lubricating oil is circulating capital because it is used up, and continually has to be replaced, but, for example, fertiliser, added to the soil, becomes chemically integrated with the soil itself. More fertiliser may be needed periodically, but this is only because the fertiliser, along with the soil's own natural nutrients, is gradually used up, as part of the production process. To this extent then, the fertiliser acts as fixed capital.

“Here a portion of the value continues to exist alongside the product, in its independent form or in the form of fixed capital, while the other portion of the value has been delivered to the product and therefore circulates with it. In this case it is not alone a portion of the value of the fixed capital which enters into the product, but also the use-value, the substance, in which this portion of value exists.” (p 164)

The point Marx is making here is that the soil is both an instrument of production and a raw material. The soil is an instrument of production, because it is used by labour as a means of achieving a useful effect. The farmer uses the soil in the same way that a factory worker uses the factory floor or a machine. But, it is also a raw material, because the plants growing in it also absorb nutrients from the soil, i.e. they absorb some of its use value, which is then incorporated into the new commodity, just as linen absorbs the cotton used in its production.

This process was also discussed in *Volume I*, where I referred to Marx's analysis in *Theories of Surplus Value*, in which he explained the mistake made by Torrens. Torrens believed that when 100 quarters of grain, planted as seed, becomes 120 quarters of grain when harvested, this additional 20 quarters was the source of the surplus value produced. But, as Marx points out, even this additional 20 quarters of use value has not appeared out of thin air. The additional 20 quarters of use value already existed in the form of fertiliser, soil, sunlight and so on, which is incorporated in the 120 quarters.

Marx then summarises some of the other confusion of economists in relation to these different forms of capital. For example, they frequently confused fixed capital with constant capital, as well as defining fixed capital in terms of its actual mobility. But, as Marx says, a ship is fixed capital, but it is not immobile!

Similarly, the economists had failed to recognise that things that appear as capital are at other times only means of production. They only become capital when they are used capitalistically, i.e. as a means of expanding value. A power drill used by a worker to produce a commodity, sold at a profit, by their employer, is capital. The same drill used by the same worker to put up some shelves in their home, is not capital, but only means of production.

“Thus the distinction between instruments of labour and subject of labour, which is grounded on the nature of the labour-process, is reflected in a new form: the distinction between fixed capital and circulating capital. It is only then that a thing which performs the function of an instrument of labour becomes fixed capital. If owing to its material properties it can function also in other capacities than that of instrument of labour, it may be fixed capital or not, depending on the specific function it performs. Cattle as beasts of toil are fixed capital; as beef cattle they are raw material which finally enters into circulation as a product; hence they are circulating, not fixed capital.” (p 164-5)

Productive-capital may be engaged in the production process for a long time. But this prolonged time of production does not make all the productive capital involved in it fixed capital. Raw material can take a long time to pass all the way through some production processes, but raw material constitutes circulating rather than fixed capital. All of it is consumed in the production process.

For example, seeds may take a year to go through the production process and become plants. But, the seeds are circulating capital. All of their value and use value is consumed in that production process.

Fixed capital may be stationary or mobile. It may be produced in and for a specific location, e.g. a factory, canal, or railway, but it can also be produced to be moved to some other permanent or semi-permanent position, e.g. a machine. Finally, it can be produced to be constantly mobile, e.g. a train, bus, ship or aeroplane.

“But the fact that some instruments of labour are localised, attached to the soil by their roots, assigns to this portion of fixed capital a peculiar role in the economy of nations. They cannot be sent abroad, cannot circulate as commodities in the world-market. Title to this fixed capital may change, it may be bought and sold, and to this extent may circulate ideally. These titles of ownership may even circulate in foreign markets, for instance in the form of stocks. But a change of the persons owning this class of fixed capital does not alter the relation of the immovable, materially fixed part of the national wealth to its movable part.” (p 166)

Its this nature of fixed capital, by which it gives up only a fraction of its use value, and therefore value, during the production process, that results in a peculiar turnover of this capital.

A portion of its use value is reduced by wear and tear. The more it is used, the more wear and tear, and so the more of its use value is consumed. But, this use value is not transferred to the end product, in the way that of raw material is. Only the value of that use value is transferred. That value is absorbed in the value of the end product. When that is sold, this value is transformed into money. However, this money sum is in excess of what is required to reproduce the circulating capital.

Suppose we have yarn produced as follows:-

Spindles £10,000, cotton £1,000, labour-power £1,000, surplus value £1,000. Assume that the capitalist consumes all of the surplus value. If wear and tear of the spindles amounts to 10% during the year, then the value of the yarn will be:-

£1,000 Spindles

£1,000 Cotton

£1,000 Labour-power

£1,000 Surplus Value

= £4,000

But, in order to continue production, this capital only requires £2,000 – enough to reproduce the cotton and labour-power. £1,000 of surplus value is consumed by the capitalist, leaving £1,000 left over. It is not needed to reproduce the spindles because, although they have lost 10% of their value, they continue to function.

Only after ten years will they be totally worn out, and have to be replaced. The £1,000 then has to be accumulated each year, over this period, to build up the fund for their replacement.

“The transformation of its value into money keeps pace with the pupation into money of the commodity which is the carrier of its value. But its reconversion from the money-form into a use-form proceeds separately from the reconversion of the commodities into other elements of their production and is determined rather by its own period of reproduction, that is, by the time during which the instrument of labour wears out and must be replaced by another of the same kind. If a machine worth £10,000 lasts for, say, a period of ten years, then the period of turnover of the value originally advanced for it amounts to ten years.” (p 166-7)

Of the other productive-capital, the auxiliary materials, like fixed capital, transfer their value, but not their use value, to the end product. Raw materials transfer their use value and their value to the end product. Labour-power does not transfer its use value or value to the end product. The use-value of labour-power is its ability to create surplus-value. It does that by undertaking the act of labour, which in itself is a process of new value creation. It reproduces itself in the production process, i.e. it creates sufficient new value to replace the value consumed in producing the labour-power, as well as producing a surplus value over and above it.

“But all these differences are immaterial so far as the circulation and therefore the mode of turnover is concerned. Since auxiliary and raw materials are entirely consumed in the creation of the product, they transfer their value entirely to the product. Hence this value is circulated in its entirety by the product, transforms itself into money and from money back into the elements of production of the commodity. Its turnover is not interrupted, as is that of fixed capital, but passes uninterruptedly through the entire circuit of its forms, so that these elements of productive capital are continually renewed in kind.” (p 167)

Labour-power is bought for a fixed period of time and consumed entirely during this period. It is circulating capital. The worker remains after this period, but it is not the worker who is being bought. It is only a defined amount of his labour-power.

But, although the labour-power of the worker has to be constantly reproduced, in accordance with the periods, the product of that labour may take longer or shorter to realise. A worker might be paid their wages weekly, but the product of their labour might take a month to realise, or in the case of a ship, several years.

But, the labour-power itself can only be reproduced when the product is sold, and the money so raised is used to purchase labour-power once more. Labour-power is like the other elements of constant capital that are not fixed capital. It is circulating capital, and its turnover time is equal to the time when its product has passed through both the production and circulation processes, and has once more been converted into labour-power.

Marx then sets out exactly what this circulating capital consists of. The worker sells his labour-power to the capitalist. The value of that labour-power is equal to the value of the commodities required to reproduce the worker, for the period he is contracted to work. Those commodities are provided out of society's consumption fund, i.e. the total production of commodities set aside for individual consumption, rather than to replace means of production or investment.

In a sense then, as set out in *Volume I*, it is as though the capitalist had bought these commodities, and given them to the worker. However, that is not the case. The worker buys these commodities with their wages, and these wages form the variable capital of the capitalist. If we set aside, for now, the surplus value, created by the worker, the variable capital of the capitalist has its counterpart in the capital-value of that part of the productive-capital represented by the labour-power. It is this which constitutes the circulating capital. The worker's wages do not circulate as capital. The worker spends them as revenue. The labour-power does not circulate as capital either. Once expended, it is gone, consumed in the productive process. What circulates is only the capital-value. It is that which is embodied in the end product, which is then metamorphosed into money, which in turn is metamorphosed once more into labour-power.

"It is therefore not the labourer's means of subsistence which acquire the definite character of circulating capital as opposed to fixed capital. Nor is it his labour-power. It is rather that part of the value of productive capital which is invested in labour-power and which, by virtue of the form of its turnover, receives this character in common with some, and in contrast with other, component parts of the constant capital." (p 169)

The distinction between fixed and circulating capital is a distinction between different types of productive-capital, based on whether or not their use value is entirely consumed within the production process. For that reason neither money-capital nor commodity-capital can be classed as fixed or circulating capital. Money-capital can only become fixed or circulating capital when it has been transformed into productive-capital. Commodity-capital similarly has to be sold and transformed into money, and then transformed into productive-capital, before it can be either fixed or circulating.

"No matter how much money-capital and commodity-capital may function as capital and no matter how fluently they may circulate, they cannot become circulating capital as distinct from fixed capital until they are transformed into circulating components of productive capital. But because these two forms of capital dwell in the sphere of circulation, Political Economy as we shall see has been misled since the time of Adam Smith into lumping them together with the circulating part of productive capital and assigning them to the category of circulating capital. They are indeed circulation capital in contrast to productive capital, but they are not circulating capital in contrast to fixed capital." (p 170-1)

By definition, the turnover time of fixed capital is equal to several turnovers of the circulating capital. The turnover time of the circulating capital is the time it takes the product to go through the production process, to be sold, and the proceeds to be used to buy the replacement productive capital. For example, suppose the necessary labour and materials are on hand to build a house. The house takes a month to build. A buyer is already on hand, and the purchase process takes two more weeks. At this point, the builder has all the money required to purchase the labour-power, the bricks, cement, plaster etc. needed to build another identical house. All of those things were fully consumed in the production process, and have to be replaced in their entirety. They are circulating capital.

If the builder works 48 weeks a year, then on this basis, of his circulating capital turning over in six weeks, it will turn over eight times a year. But, his fixed capital will not have been worn out during one or even all eight of these production processes. The lump hammers may last a couple of decades, the shovels a couple of years, the excavators up to ten years and so on. During all this time, the value of the fixed capital transfers part of its value to the end product, and its own value diminishes with wear and tear in the same amount.

The capitalist has to buy the fixed capital required all in one lump, whereas only that circulating capital required for the production process has to be bought. At the end of that process, the capitalist gets back all of the value of the circulating capital, but only that part of the fixed capital lost in wear and tear.

The other side of this, however, is that the circulating capital has to be completely replaced at the end of each production cycle, whereas the fixed capital continues to function until it is worn out. The circulating capital withdraws from society's total production, a value equal to what it has thrown into it, at the end of each cycle, but the fixed capital throws into the market value that it does not immediately withdraw. It only does so when it has been completely worn out.

In a sense, the circulating capital is also fixed in production, because the continuous nature of capitalist production means that they must always be present in that process. The difference resides in the fact that the fixed capital remains bodily within that process. The circulating capital continually changes its bodily form. It is not the same physical piece of cotton being continuously transformed into yarn, but different pieces of cotton that perpetually represent the same capital-value. No sooner has one piece of cotton become yarn than the capital-value that was embodied in its physical shell has passed instantaneously into its replacement.

II. Components, Replacements, Repairs and Accumulation of Fixed Capital

The various degrees of fixed capital, even employed in the same factory, have different turnover periods, because they each have different lifespans. On a railway, the track and rolling stock wear out most quickly, whereas the station buildings, viaducts, tunnels etc. will last centuries provided they are maintained and repaired.

“Originally in the construction of modern railways it was the prevailing opinion, nursed by the most prominent practical engineers, that a railway would last a century and that the wear and tear of the rails was so imperceptible that it could be ignored for all financial and other practical purposes; 100 to 150 years was supposed to be the life of good rails. But it was soon found that the life of a rail, which naturally depends on the speed of the locomotives, the weight and number of trains, the diameter of the rails, and on a multitude of other attendant circumstances, did not exceed an average of 20 years. In some railway terminals, great traffic centres, the rails even wear out every year.” (p 172-3)

Capital then seeks means of extending this lifespan, particularly where technological change has shortened it via increase of wear and tear. For example, iron rails were replaced by more durable steel rails.

In addition to the reduction in use value, caused by wear and tear, the fixed capital could also experience a reduction in its use value as a result of depreciation. For example, wooden sleepers could rot due to exposure to the elements irrespective of the amount of use. Fixed capital, in particular, suffers from the moral depreciation described in *Volume I*. That is that even when it has suffered no actual diminution in its original use value, its

relative use value can be diminished as a consequence of new better versions of itself being introduced. In addition, it can suffer such moral depreciation where the exact same machine can be produced at a significantly lower cost as a result of increases in productivity.

“The instruments of labour are largely modified all the time by the progress of industry. Hence they are not replaced in their original, but in their modified form. On the one hand the mass of the fixed capital invested in a certain bodily form and endowed in that form with a certain average life constitutes one reason for the only gradual pace of the introduction of new machinery, etc., and therefore an obstacle to the rapid general introduction of improved instruments of labour. On the other hand competition compels the replacement of the old instruments of labour by new ones before the expiration of their natural life, especially when decisive changes occur. Such premature renewals of factory equipment on a rather large social scale are mainly enforced by catastrophes or crises.” (p 174)

For some forms of fixed capital, such as horses, their duration is more or less fixed by nature. You cannot replace a horse bit by bit. But, other forms of fixed capital are similar. For example, you can replace bits of a bridge that have worn out, but, if developments in bridge technology have occurred, you cannot generally replace a worn out piece of a bridge of one type with a replacement piece of a new type.

The repair and replacement of worn out capital is not the same as accumulation of capital. The value of the former has been passed into the end product, and is thereby reproduced in a fund to cover the repair or replacement. The accumulation of capital arises out of the surplus labour, provided by the workers.

But, because fixed capital wears out gradually, and the value it transfers to the end product becomes accumulated in a reserve fund, the money in this fund, clearly can be used for other purposes in the intervening period, before it is required to replace the fixed capital. In other words, it can be used to buy additional machines etc., thereby expanding production.

“This part of the value of the fixed capital transformed into money may serve to extend the business or to make improvements in the machinery which will increase the efficiency of the latter. Thus reproduction takes place in larger or smaller periods of time, and this is, from the standpoint of society, reproduction on an enlarged scale — extensive if the means of production is extended; intensive if the means of production is made more effective. This reproduction on an extended scale does not result from accumulation — transformation of surplus-value into capital — but from the reconversion of the value which has branched off, detached itself in the form of money from the body of the fixed capital into new additional or at least more effective fixed capital of the same kind.” (p 175)

To what extent this can occur depends upon the type of business, and type of fixed capital. For example, a business that has a lot of very durable fixed capital will not want to allow increasing amounts of money-capital to lie fallow, perhaps for decades, waiting for the day when it is needed to replace that fixed capital. It can be seen why the development of banking, of an efficient credit system, and particularly of limited liability companies, is useful, for capital, in this respect, because these money funds can then be more effectively used, as capital, in a range of productive functions.

But, prior to the development of these socialised forms of capital, the individual private capitalist, in such circumstances, is led to use such funds to extend their own operations. That applies, for example, to buildings.

“This depends largely on the available space. In the case of some buildings additional storeys may be built; in the case of others lateral extension, hence more land, is required. Within capitalist production there is on the one side much waste of material, on the other much impracticable lateral extension of this sort (partly to the injury of the labour-power) in the gradual expansion of the business, because nothing is undertaken according to a social plan, but everything depends on the infinitely different conditions, means, etc., with which the individual capitalist operates. This results in a great waste of the productive forces.

This piecemeal reinvestment of the money reserve fund (i.e., of that part of the fixed capital which has been reconverted into money) is easiest in agriculture. A field of production of a given area is here capable of the greatest possible gradual absorption of capital. The same applies to where there is natural reproduction as in cattle breeding.” (p 176)

Fixed capital requires maintenance, and some of this maintenance arises automatically as a result of the labour process itself. Fixed capital, left unused, suffers depreciation, which is a total loss to capital (note this is a capital loss not a trading loss. It has to be recovered out of capital not out of surplus value, i.e. surplus value that would have gone to capital accumulation instead has to go to replace the depreciated capital. If there were no surplus value to achieve this, then either the capital stock itself shrinks accordingly, or else new additional capital has to be created from elsewhere).

Its use in the labour process reduces its use value, and therefore, its value as a consequence of wear and tear, but, at the same time, reduces the loss of use value and value arising from depreciation. This is a free gift from labour to capital.

“This maintenance resulting from use in the labour-process is a free gift inherent in the nature of living labour. Moreover the preservative power of labour is of a two-fold character. On the one hand it preserves the value of the materials of labour by transferring it to the product, on the other hand it preserves the value of the instruments of labour without transferring this value to the product, by preserving their use-value through their activity in the process of production.” (p 176)

But, it also requires positive maintenance – cleaning, oiling etc. - which requires an expenditure of labour-time.

The calculation of the average life of a machine, required to determine how much of its value it gives up each year, presumes that this necessary maintenance is undertaken, just as in determining the average lifespan of a worker, for determining the value of labour-power, its presumed that the worker is maintained by eating, being clothed and sheltered, and undertaking all other necessary functions.

“It is here not a question of replacing the labour contained in the machine, but of constant additional labour made necessary by its use. It is not a question of labour performed by the machine, but of labour spent on it, of labour which it is not an agent of production but raw material. The capital expended for this labour must be classed as circulating capital, although it does not enter into the labour-process proper to which the product owes its existence. This labour must be continually expended in production, hence its value must be continually replaced by that of the product. The capital invested in it belongs in that part of circulating capital which has to cover the unproductive costs and is to be distributed over the produced values according to an annual average calculation.” (p 177)

The labour so expended is unproductive labour. Just as the food the worker needs to eat, to reproduce their labour-power, counts towards the calculation of the value of labour-

power, but the time the worker expends to eat that food does not, so these necessary costs, in maintaining the machine do not count in determining the value of the product it helps to produce. It can be seen why capital, therefore, tries to minimise these costs. It was one reason child labour was used to undertake the cleaning while the machines continued to run.

“However, in various branches of production, in which the machinery must be removed from the process of production for the purpose of cleaning and where therefore the cleaning cannot be performed in between, as for instance in the case of locomotives, this maintenance work counts as current expenses and is therefore an element of circulating capital.” (p 177)

In respect of repairs these can be of different types. A machine might suffer an accident, which requires repair. Obviously, such accidents are exactly that, and can occur at any time. It is for such purposes that insurance exists, so as to spread out the risk of such eventualities. Machines might also require additional labour to be spent on them when they are new to iron out teething troubles. In a similar manner, today, with large, complex computer systems, additional programmer time is required, after they have been implemented, to remedy bugs that only become apparent when the system is in use. When machines have gone past a certain duration, and wear and tear has accumulated, they may also require more repairs.

So, the average life, of fixed capital, is based on it being maintained and repaired to the necessary level. But, the amount of repairs required is indeterminate, because it depends on accidents, and the individual machine.

“But then it is also evident that the value added by this extra expenditure of capital and labour cannot enter into the price of the commodities concerned at the same time as it is incurred. For example, a manufacturer of yarn cannot sell his yarn dearer this week than last, merely because one of his wheels broke or a belt tore this week. The general costs of spinning have not been changed in any way by this accident in some individual factory. Here, as in all determinations of value, the average decides. Experience shows the average occurrence of such accidents and the average volume of the maintenance and repair work necessary during the average life of the fixed capital invested in a given branch of business. This average expense is distributed over the average life and added to the price of the product in corresponding aliquot parts; hence it is replaced by means of its sale.” (p 179)

Capital seeks to regularise such expenditure as much as possible, for example, as stated above, via insurance, but it attempts to do so via planned maintenance and servicing too. In large enterprises, it was the practice, until the 1980's, to have in-house maintenance departments, to undertake such work. But, under the neo-fordist regimes, introduced in the 1980's, which brought in various forms of flexible specialisation, many of these were closed down, and the work transferred to external, usually small, local specialist firms, who were then tied to the contracting large enterprise.

Although repairs are undertaken at indeterminate periods, depending on when they are required, they are closer to being circulating than fixed capital. They are reproduced, on an average, out of the value of the product each year. Marx sets out how capital usually achieves this in its book-keeping, however, by lumping it together with wear and tear. So, for example, if a machine is estimated to last for 15 years, its lifespan is instead calculated on the basis of 10. Instead of 6.66% of its value being written down each year, and transferred to the end product, it is calculated as 10%. The additional sum, each year, then covers the necessary cost of repairs.

Repairs arising from accidents are not part of wear and tear, and the cost of these is not then reproduced in the value of the end product. It is a total loss to capital. In order to share out the risk, insurance is taken out. The insurance premium is paid for out of the surplus value. In a sense, it is like any other type of unproductive consumption paid for out of surplus value by the capitalist.

So, on the one hand, the money reserve can be, and is, used for the expansion and intensification of production, rather than just to repair and replace fixed capital, on the other, surplus value is used to replace fixed capital, and to cover the costs of insurance, depreciation etc. The process of replacing fixed capital is often indistinguishable from the process of its extensions and intensification.

“In point of fact only the smallest part of the capital needed for replacement consists of the money reserve fund. The most substantial part consists in the extension of the scale of production itself, which partly is actual expansion and partly belongs to the normal volume of production in those branches of industry which produce the fixed capital. For instance a machine factory must arrange things so that the factories of its customers can annually be extended and that a number of them will always stand in need of total or partial reproduction.” (p 181)

Within this process, some capitalists, even within the same branch of production will be more fortunate than others. Some will have machines that break down less frequently than others. Yet, it is only the average cost of repairs that will be passed on to the value of the end product.

“But the addition to the price of the commodities resulting from wear and tear and from costs of repairs is the same and is determined by the average. The one therefore gets more out of this additional price than he really added, the other less. This circumstance as well as all others which result in different gains for different capitalists in the same line of business with the same degree of exploitation of labour-power tends to enhance the difficulty of understanding the true nature of surplus-value.” (p 181)

The distinction between expenditures that are for maintenance, for repairs, or for replacement, tends to be flexible. It is ultimately a matter of accounting, but the flexibility is used to obtain financial benefits by charging expenditure to either the capital or revenue accounts. In the 1990's, Local Government used this flexibility to advantage, for example, as a means of achieving required spending cuts on its revenue account. Expenditure for repairs and maintenance on things like playgrounds was taken out of the revenue account and placed in the Capital Account.

Marx details with various testimony, the practice on the railways that even with the “new” replacement engines and carriages, they would frequently utilise existing wheels, boilers etc. from rolling stock that was being scrapped, and so it was accounted for out of revenue, as though it were a repair rather than a replacement.

“The same with coaches:

“In the course of time the stock of engines and vehicles is continually repaired. New wheels are put on at one time, and a new body at another. The different moving parts most subject to wear are gradually renewed; and the engines and vehicles may be conceived even to be subject to such a succession of repairs, that in many of them not a vestige of the original materials remains.... Even in this case, however, the old materials of coaches or engines are more or less worked up into other vehicles or engines, and never totally disappear from the road. The movable capital therefore may be considered to be in a state of continual

reproduction; and that which, in the case of the permanent way, must take place altogether at a future epoch, when the entire road will have to be relaid, takes place in the rolling stock gradually from year to year. Its existence is perennial, and it is in a constant state of rejuvenescence.” (Lardner, op. cit., pp. 115-16.)” (p 183)

Taking a branch of industry, or social production as a whole, this process of continual replacement of fixed capital occurs in the same way that Lardner describes for a railway. For the most durable forms of fixed capital, like canals, bridges, etc. the amount of wear and tear may be infinitesimally small, because they are expected to last for such a long time. For these kinds of structure, then it is not this wear and tear whose value is mostly transferred to the end product, but their necessary repairs, undertaken annually etc.

In *Volume I, Chapter 3*, it was shown how money is divided in society into a hoard and money in circulation. Money is in circulation when it is being used as a means of purchase or means of payment. But, there are always periods when money has been received, but is not immediately used again for purchase or payment. So, it forms part of a hoard.

The value of fixed capital transferred to the end product as wear and tear, is reproduced in that product, and assumes a money form. It then is stored in a reserve fund to be used to replace that fixed capital at the end of its working life. So far as it is stored, in this reserve fund, it forms a part of the money hoard in society. When it is used, to replace the fixed capital, it goes out as one lump sum, into circulation once more. But, no sooner has this occurred than the replacement fixed capital begins transferring its value piecemeal to the end product – this value itself then being circulated – whilst its money equivalent once more returns to be built up into a new hoard.

“With the development of the credit system, which necessarily runs parallel with the development of modern industry and capitalist production, this money no longer serves as a hoard but as capital; however not in the hands of its owner but of other capitalists at whose disposal it has been placed.” (p 185)

Chapter 9 - The Aggregate Turnover of Advanced Capital, Cycles of Turnover

The advanced capital of a business consists of fixed and circulating capital. Of the circulating capital, this consists of both constant, in the form of raw and auxiliary materials, and variable capital, i.e. labour-power. Because the technical composition of capital means that a certain quantity of labour-power is required to process a given quantity of material, the turnover time of the circulating capital will tend to be homogeneous, i.e. a certain amount is laid out for material, and at the same time, a certain amount is laid out for labour-power to process it. Both are transformed simultaneously in the production process, into the end product. It becomes commodity-capital, which becomes money-capital, which is used to replace the material and labour-power consumed.

But, the fixed capital is not homogeneous. Not only does it last much longer than the circulating capital, but different types of fixed capital last much longer than others. It is not just a quantitative difference that exists, but a qualitative difference, because whilst the circulating capital is continuously reproduced with each circuit, the fixed capital is not. A portion of its value passes into the end product, and is reproduced in money form, but the fixed capital itself is only replaced at one time. In order to reduce everything down to merely a quantitative difference, so that an aggregate turnover time can be calculated, this qualitative difference has to be removed.

The circuit, $P \dots P$, the circuit of productive-capital, is not the basis for this, because it is a circuit of like for like reproduction (including expansion). But, some of the fixed capital, at least, is not reproduced physically at the end of a year.

The circuit $M - M$, however, does enable things to be reduced to purely a quantitative level, because it does show the return of the capital-value, transferred to the end product, as wear and tear, in its money form. So, if £10,000 has been advanced to buy a machine, and it transfers 10% of its value, in wear and tear, to the end product, $M - M$ would show 10,000 - 1,000, meaning that 10% of the advanced capital was turned over in a year. Or, put another way, the advanced capital completed 0.1 turnovers in a year.

By the same token, but in reverse, it is clear that the circulating capital completes several turnovers in a year, so that,

“... even if by far the greater part of the advanced productive capital consists of fixed capital whose period of reproduction, hence also of turnover, comprises a cycle of many years, the capital-value turned over during the year may, on account of the repeated turnovers of the circulating capital within the same year, be larger than the aggregate value of the advanced capital.” (p 187)

Its important to note here that what Marx is calculating is not the actual money laid out, but the capital-value in money form. He is using $M - M$, rather than $P..P$, only to be able to make that calculation. What is still at issue, what is actually being turned over is still physical capital, not money-capital. If, the machine suffers some form of depreciation, so that its value falls to £5,000, the fact that £10,000 in money had originally been laid out for it is irrelevant. What $M - M$ is considering is the actual capital-value advanced, and returned. Now, the capital advanced at the start of this circuit, is £5,000 – the new capital value of the machine. If it continues to lose 10% of its value in wear and tear, then it will transfer now, £500, rather than £1,000 to the end product. That will be realised in the sale of the end product, so that £500 will then flow back as money, i.e. $M - M$, becomes £5,000 - £500. The advanced capital-value continues to turn over at the rate of 0.1 times a year.

As Marx states,

“In calculating the aggregate turnover of the advanced productive capital we therefore fix all its elements in the money-form, so that the return to that form concludes the turnover. We assume that value is always advanced in money, even in the continuous process of production, where this money-form of value is only that of money of account. Thus we can compute the average.” (p 187)

Note Marx's terminology here. Firstly he begins by making clear that what he is talking about is “*the advanced productive capital*”. To make clear it is not the advance of the money-capital used to purchase that productive capital, that Marx is talking of, he then says that what he is doing is only to “*fix all its elements in the money-form*”. Finally, to make clear that his analysis here is one based on the actual capital-value advanced, and not on the money-capital advanced, the historic price, he makes clear that the use of money here, is merely a convenience of calculation, and that he is using it essentially only in its role as “*money of account*”.

This is important in relation to the arguments put forward by proponents of historic cost models, because, once again, Marx is making clear that central to his analysis of this process of reproduction of capital, of which the rate of profit, and rate of turnover, are important aspects, it is current value and not past money prices that is central. His analysis of reproduction here continues to be one of the physical reproduction of the capital consumed, and that can only be viewed in value terms, in order to deal with any changes that occur in capital-values outside the process of the self-expansion of capital.

“Suppose the fixed capital is £80,000 and its period of reproduction 10 years, so that £8,000 of it annually return to their money-form, or it completes one-tenth of its turnover. Suppose further the circulating capital is £20,000, and its turnover is completed five times per year. The total capital would then be £100,000. The turned-over fixed capital is £8,000, the turned-over circulating capital five times £20,000, or £100,000. Then the capital turned over during one year is £108,000, or £8,000 more than the advanced capital. 1 + 2/25 of the capital have been turned over.” (p 187-8)

So, what is being calculated here is the turnover time of the capital-value advanced, not the turnover time of the actual money-capital advanced. What returns at the end of each turnover is an amount of value, equal to that advanced, (if we discount the surplus value) and sufficient to reproduce the capital physically consumed.

“As the magnitude of the value and the durability of the applied fixed capital develop with the development of the capitalist mode of production, the lifetime of industry and of industrial capital lengthens in each particular field of investment to a period of many years, say of ten years on an average. Whereas the development of fixed capital extends the length of this life on the one hand it is shortened on the other by the continuous revolution in the means of production, which likewise incessantly gains momentum with the development of the capitalist mode of production. This involves a change in the means of production and the necessity of their constant replacement, on account of moral depreciation, long before they expire physically. One may assume that in the essential branches of modern industry this life-cycle now averages ten years. However we are not concerned here with the exact figure. This much is evident: the cycle of interconnected turnovers embracing a number of years, in which capital is held fast by its fixed constituent part, furnishes a material basis for the periodic crises. During this cycle business undergoes successive periods of depression, medium activity, precipitancy, crisis. True, periods in which capital is invested differ greatly and far from coincide in time. But a crisis always forms the starting-point of large new investments. Therefore, from the point of view

of society as a whole, more or less, a new material basis for the next turnover cycle.” (p 188-9)

Marx is dealing here with the normal business cycle, but, on a similar basis, Marx also did some preliminary analysis of the role of the much larger and longer-term investments in fixed capital, that affect a longer cycle that today we refer to as the long wave. At the same time, changes in the structure of capital, and the role today of technology, such as the microchip, means that a shorter three year cycle has developed, linked to the upgrade cycle for these base technologies.

As described previously, some of the circulating capital, in the form of raw material and auxiliary materials, has to be held in the form of a stock, in order that production can proceed continuously. So, although in a week, a workforce of 100 may transform 10,000 kilos of cotton into yarn, the capitalist may buy in 100,000 kilos, so the capital value of 10,000 kilos is advanced each week whilst the balance of the 100,000 kilos is held in stock.

Marx describes how these differences of when payments were made for wages, materials etc. were confused by some economists, for turnover periods. It is not the different periods over which such payments are made that determines the turnover-time, however, but the time required for the advanced capital-value to be returned to its money form and thence to the reproduction of the advanced productive-capital. For example, workers may be paid monthly in arrears, but the goods they produce may be completed and sold on a daily basis. This also illustrates why Marx bases the rate of turnover on the circulating rather than the fixed capital. The value of the consumed circulating capital must always be thrown immediately back into circulation, because without it, production cannot continue. However, the nature of the fixed capital is such that it must continue to function until such time as it is worn out. The value of wear and tear, returns along with the value of the consumed circulating capital, at the end of each turnover period, but only needs to be thrown back into circulation when the fixed capital is worn out. The fixed capital thereby poses no limitation on the continuity of the production process, as the circulating capital does.

This illustrates another mistake of the *Temporal Single System Interpretation*, which fetishises money-capital. The rate of profit, as Marx sets it out, is calculated on the advanced capital value of the productive-capital, not on the historical payment of monetary amounts. So, where here the workers are paid a month in arrears, no monetary payment has, in fact been made. Yet, an amount of capital-value has been advanced in the form of the variable capital, consumed in the production of commodities. If variable capital of £100 per day is advanced, then over a month a total of £3,000 will have been laid out as variable capital, and will have been metamorphosed first into commodity-capital, and then into money-capital, possibly completing several such turnovers, even before any actual payment of wages is made at the end of the month!

The fact that a certain amount of cotton is held in stock does not change the turnover-time of the advanced capital-value, because that continues to proceed through the production process and circulation process as before. If £10,000 was advanced in the form of cotton, and is enough to last 10 weeks, then in the intervening 9 weeks, no capital for additional cotton is required. The advanced capital each week continues to be £1,000, and each week, that £1,000 is returned in money form as the yarn is sold. As with the advance of variable capital, the advance of capital for the cotton here, Marx makes clear, is the advance of capital value, not the actual payment of money-capital. As with wages, the particular capitalist may only make actual payment for the purchased materials long after the capital value of those materials has been advanced in production, and gone through its turnover.

Similarly, where production requires that the product be left to mature, for example wine fermenting, the fact that labour is not being expended during this period does not mean that the labour expended on its production, is not still stuck in the production and circulation process. The turnover of the labour cannot be completed until the product itself is sold.

That is one reason why credit is introduced and plays an important role in removing those obstacles.

“The credit system, to which Scrope here refers, as well as commercial capital, modifies the turnover for the individual capitalist. On a social scale it modifies the turnover only in so far as it does not accelerate merely production but also consumption.” (p 192)

Chapter 10 - Theories of Fixed and Circulating Capital. The Physiocrats and Adam Smith

Marx here examines the way fixed and circulating capital was analysed by the *Physiocrats*, and how their analysis was picked up by Adam Smith. For the *Physiocrats*, it is only agricultural capital that is productive. It is that which provides the food and raw materials that other workers need to live on, and which industry needs to produce. It is only the surplus provided here that enables the rest of society to engage in other activities.

This view was, of course, wrong, and the detailed reason why will be dealt with much later in examining "*Theories of Surplus Value*." However, allowing for that peculiarity, as Marx points out, Quesnay is right to note that the distinction between what he calls "*avances primitives*" and "*avances annuelles*", is one that only exists within productive-capital.

"The difference between these two kinds of advances does not arise until advanced money has been transformed into the elements of productive capital. It is a difference that exists solely within productive capital. It therefore never occurs to Quesnay to classify money either among the original or the annual advances. As advances for production, i.e., as productive capital, both of them stand opposed to money as well as the commodities existing in the market. Furthermore the difference between these two elements of productive capital is correctly reduced in Quesnay to the different manner in which they enter into the value of the finished product, hence to the different manner in which their values are circulated together with those of the products, and hence to the different manner of their replacement or their reproduction, the value of the one being wholly replaced annually, that of the other partly and at longer intervals." (p 193-4)

Because Quesnay and the *Physiocrats* were concerned with agriculture, this division between annual advances and advances for longer periods arose naturally from the turnover of the capital over the year. But, in their further analysis, they carried this division over as a description of capital involved in industry too.

It was from there that this division is picked up in the analysis of Adam Smith.

*"With him it no longer applies to one special form of capital, the farmer's capital, but to every form of productive capital. Hence it follows as a matter of course that the distinction derived from agriculture between an annual turnover and one of two or more years' duration is superseded by the general distinction into different periods of turnover, one turnover of the fixed capital always comprising more than one turnover of the circulating capital, regardless of the periods of turnover of the circulating capital, whether they be annual, more than annual, or less than annual. Thus in Adam Smith the **avances annuelles** transform themselves into circulating capital, and the **avances primitives** into fixed capital. But his progress is confined to this generalisation of the categories. His implementation is far inferior to that of Quesnay."* (p 194)

Marx accuses Smith of a crude empiricism that leads from the start to a lack of clarity. So, Smith states,

"There are two different ways in which a capital may be employed so as to yield a revenue or profit to its employer." (Wealth of Nations, Book II, Chap. I, p. 189, Aberdeen edition, 1848.) (p 194)

But, as Marx says, this is neither true nor tells us anything about the division of *productive-capital* into fixed and circulating capital. In fact, there are as many different ways of utilising

capital to turn a profit as there are different branches of industry to invest in. Then there are those uses of capital such as merchant capital or money-dealing capital that are not productive and yet turn a profit for the owner of the capital.

Smith himself goes on to describe the use of capital in agriculture, manufacture and commerce, but, in doing so, moves backwards, even from the understanding of the *Physiocrats* that the distinction of fixed and circulating capital is a distinction only in relation to productive capital.

*“More. He uses merchant’s capital as an illustration in a problem which concerns exclusively differences within the **productive** capital in the product and value-creating process, which in turn cause differences in its turnover and reproduction.” (p 195)*

Smith: *““The capital employed in this manner yields no revenue or profit to its employer, while it either remains in his possession or continues in the same shape.” [Vol. II, p. 254.]” (p 195)*

But, its not clear what “*this manner*” means. If it means it produces no profit until its product is sold, this takes us no further forward. As demonstrated earlier, money-capital can be neither fixed nor circulating. It only becomes so when it is transformed into productive capital. Likewise, the productive capital, when it becomes the end product, i.e. commodity-capital, is no longer fixed or circulating. Both those forms have become subsumed within it.

Smith: *““The goods of the merchant yield him no revenue or profit till he sells them for money, and the money yields him as little till it is again exchanged for goods. His capital is continually going from him in one shape, and returning to him in another, and it is only by means of such circulation, or successive exchanges, that it can yield him any profit. Such capitals therefore may very properly be called circulating capitals.” [Vol. II, p. 254.]” (p 196)*

But, this blurs the distinction correctly made by the *Physiocrats*, because it confuses the capital involved in the process of circulation with circulating capital, as a form of productive capital.

*“These are not different kinds into which the industrial capitalist divides his capital, but different forms over and over again assumed and stripped off successively by the same advanced capital-value during its **curriculum vitae**. Adam Smith lumps this together — and this is a big step back compared to the *Physiocrats* — with the distinctions in form which arise in the sphere of circulation of capital-value, in its circular course through its successive forms, while the capital-value exists in the form of **productive** capital; and they arise because of the different ways in which the different elements of productive capital take part in the formation of values and transfer their value to the product.” (p 196)*

Smith: *“Secondly, it (capital) may be employed in the improvement of land, in the purchase of useful machines and instruments of trade, or in suchlike things as yield a revenue or profit without changing masters, or circulating any further. Such capitals therefore may very properly be called fixed capitals. Different occupations require very different proportions between the fixed and circulating capitals employed in them. ... Some part of the capital of every master artificer or manufacturer be fixed in the instruments of his trade. This part, however, is very small in some, and very great in others. ... The far greater part of the capital of all such master artificers (such as tailors, shoemakers, weavers) however is circulated, either in the wages of their workmen, or in the price of their materials, and to be repaid with a profit by the price of work.” (p 197)*

For Smith here, profit is more or less assumed to arise merely as a result of the price charged for the product being greater than its cost of production, which begs the question

of how this is possible without providing the solution, which only Marx was able to produce. For Smith, the profit arose out of the process of exchange itself – the change of masters.

But, Marx points out that using Smith's earlier definition of circulating capital, as that in the process of circulation, the machine would have to be defined as circulating capital, because for the machine maker, it forms part of his commodity-capital.

“Consequently with Adam Smith things can function as fixed capital (as instruments of labour, elements of productive capital), or as “circulating” capital, commodity-capital (as products thrust out of the sphere of production into that of circulation), all depending on the position they occupy in the life-process of capital.” (p 198)

Marx points out, however, that Smith then seems to abandon his definition of fixed and circulating capital based on whether it is employed in production or selling and writes,

“Different occupations require very different proportions between the fixed and circulating capitals employed in them.” (p 198)

In other words, he then reverts to a definition of fixed and circulating capital based on these divisions within productive capital.

Smith's other use of fixed and circulating is a distinction in which the “*circulating*” capital is one that changes masters, and it is in this process of exchange that profit arises. The impossibility of that being a source of profit in general, was discussed at length in *Volume I*. But, this idea of circulating capital being that which changes masters makes no sense either. Marx gives the example of a copper mine. The copper itself is a product of nature. The worker who mines it continues to belong to himself, and is not transferred to a new master. His labour itself does not form any material component of the end product. But also, the coal used to power the mine's steam engine, and all the other auxiliary materials, which do not enter materially in the end product, would have to be defined, on Smith's definition, as “*fixed*” capital, because they do not change masters!

If we take yarn and the cotton that composes it, the cotton as an element of productive capital, does not change masters. It remains in the possession of the productive capitalist, who does not exchange it, but processes it.

So, these materials do not circulate any more than the machines on Smith's basis. In fact, a portion of these raw materials and auxiliary materials, as well as labour-power, must always be “*fixed*” in Smith's sense, precisely because they are productive capital, and are engaged in the production process, which appears as an interruption in the process of circulation – be that circulation of commodities or of money.

“And all the elements of productive capital, whether fixed or circulating, equally confront, as productive capital, the capital of circulation, i.e., commodity-capital and money-capital.” (p 200)

Smith: *““The capital employed in this manner yields no revenue or profit to its employer, while it either remains in his possession or continues in the same shape.” [Vol. II, p. 254.]” (p 201)*

But, this statement about fixed capital, confuses the appearance that the value of the commodity has increased, as a consequence of its exchange with the reality that it has increased in the process of production. The process of exchange can only ever bring about exchange of the same commodities and their monetary equivalents, their transfer into other hands. Only the production process can create new products and new value. The process

of circulation is required for productive-capital to exist, because the industrial capitalist must exchange money for elements of productive-capital, but this signifies something qualitatively different to the mere exchange of commodities and money, C – M – C, which characterises merchant capital.

In short, in the process of circulation, the same commodities are metamorphosed alternatively into money, and then other commodities, by changing from hand to hand, but in the process of production, the commodities that make up the productive-capital, remain in the same hands, and their metamorphosis into new commodities is a real physical transformation.

The important distinction between fixed and circulating capital, moreover, is not as Smith also argues, that fixed capital only wears out by degrees. That is true, Marx says, of similar means of production under all modes of production. This fact is only the point of departure for the real distinction. That is that, as a result of this fact, a portion of the fixed capital's value remains fixed within it, whilst another part circulates along with the product.

*“To this different behaviour of material elements corresponds however the **transmission of value** to the product, and to this in turn corresponds the replacement of value by the sale of the product. That and that alone is what constitutes the difference in question. Hence capital is not called fixed because it is fixed in the instruments of labour but because a part of its value laid out in instruments of labour remains fixed in them, while the other part circulates as a component part of the value of the product.” (p 201-2)*

Smith: *“If it (the stock) is employed in procuring future profit, it must procure this profit either by staying with him (the employer), or by going from him. In the one case it is a fixed, in the other it is a circulating capital.” [p. 189.] (p 202)*

Marx once again points out that this conception of profit, essentially from the perspective of the individual capitalist, as stemming from their selling price being higher than their buying price, is crude compared with his more scientific analysis elsewhere. In fact, as Marx has demonstrated, if commodities exchange at their values, then it is impossible for a profit to arise if the product merely reproduces the prices of the commodities used in its production. Simply introducing a time dimension cannot change that.

“Not only the price of materials and that of the labour-power is replaced in the price of the product, but also that part of value which is transferred by wear and tear from the instruments of labour to the product. Under no circumstances does this replacement yield profit. Whether a value advanced for the production of a commodity is replaced entirely or piecemeal, at one time or gradually, by the sale of that commodity, cannot change anything except the manner and time of replacement. But in no event can it transform that which is common to both, the replacement of value, into a creation of surplus-value.” (p 202)

The mistake is to confuse the fact that profit only appears, is only realised, when the commodity is sold, for the reality that the surplus value is created in the process of production. The appearance creates the illusion that it is the exchange that creates the surplus rather than the act of production.

As Marx says, in this respect, Smith's position was a step back from the understanding developed by Quesnay.

“Quesnay, on the other hand, had derived these differences from the process of reproduction and its necessities. In order that this process may be continuous, the value of the annual advances must annually be replaced in full out of the value of the annual product, while the value of the investment capital need be replaced only piecemeal, so that

it requires complete replacement and therefore complete reproduction only in a period of, say, ten years (by a new material of the same kind). Consequently Adam Smith falls far below Quesnay.” (p 202-3)

There is an obvious problem which Smith also needs to address which is if profit arises out of exchange, and his definition of fixed capital is that which is not exchanged, but remains in production, in the hands of its original master, how does this capital produce profit. Smith simply argues that fixed capital makes profit by remaining in production, whilst circulating capital makes profit by circulating.

At root, Smith's confusion is one between fixed and circulating capital on the one hand, and productive and circulation capital on the other, though he chops and changes his definitions between them. The arguments Smith uses for defining capital as fixed can be used to describe productive capital, and those he uses to describe circulating capital to describe circulation capital. But, in the end the definitions are all jumbled together.

*“In opposing circulating capital to fixed, no emphasis is placed on the fact that this opposition exists solely because it is that constituent part of productive capital which must be **wholly** replaced out of the value of the product and must therefore fully share in its metamorphoses, while this is not so in the case of the fixed capital. Instead the circulating capital is jumbled together with those forms which capital assumes on passing from the sphere of production to that of circulation, as commodity-capital and money-capital. But both forms, commodity-capital as well as money-capital, are carriers of the value of both the fixed and the circulating component parts of productive capital. Both of them are capital of circulation, as distinguished from productive capital, but not circulating (fluent) capital as distinguished from fixed capital.” (p 203)*

Marx points out that this false distinction between fixed and circulating capital, rather than the distinction between constant and variable capital also then acts to obscure the real source of surplus value.

Smith: *“That part of the capital of the farmer which is employed in the instruments of agriculture is a fixed, that which is employed in the wages and maintenance of his labouring servants is a circulating capital.*

He makes a profit of the one by keeping it in his own possession, and of the other by parting with it. The price or value of his labouring cattle is a fixed capital in the same manner as that of the instruments of husbandry; their maintenance” (that of the labouring cattle) “is a circulating capital in the same manner as that of the labouring servants. The farmer makes his profit by keeping the labouring cattle, and by parting with their maintenance.

“Both the price and the maintenance of the cattle which are bought in and fattened, not for labour but for sale, are a circulating capital. The farmer makes his profit by parting with them.” [Vol. II, pp. 255-56.]” (p 204)

Marx says, that Smith begins by correctly distinguishing fixed and circulating capital, in relation to the difference in circulation of productive capital. He is also correct to say that the difference is one that applies to the value and not the physical aspect of the capital, i.e. it is a part of the value of the fixed capital that remains fixed, whilst another part circulates, whereas all the value of the circulating capital circulates.

But, then Smith's attempt to explain profit on the basis of exchange, of the capital having a change of masters, leads him astray. Smith's answer to the question posed earlier of how

can the fixed capital produce a profit if it is not exchanged appears to be it can only do so in consequence of the circulating capital.

“No fixed capital can yield any revenue but by means of a circulating capital. The most useful machines and instruments of trade will produce nothing without the circulating capital which affords the materials they are employed upon, the maintenance of the workmen who employ them.” (P. 188.)” (p 204)

But, the application of this idea, when he says,

“...in the same manner as that of the instruments of husbandry; their maintenance” (that of the labouring cattle) “is a circulating capital in the same manner as that of the labouring servants. The farmer makes his profit by keeping the labouring cattle, and by parting with their maintenance.” (above)

is clearly false. As Marx says,

“The farmer keeps the fodder of the cattle, he does not sell it. He uses it to feed the cattle, while he uses the cattle themselves as instruments of labour. The difference is only this: The fodder that goes for the maintenance of the labouring cattle is consumed wholly and must be continually replaced by new cattle fodder out of the products of agriculture or by their sale; the cattle themselves are replaced only as each head becomes incapacitated for work.” (p 204)

It is not the fact that the farmer sells the fattened cattle that makes them, or the fodder, circulating capital. In fact, as shown earlier, as commodity-capital, the fattened cattle are neither fixed nor circulating capital, because that distinction only applies to productive capital.

As productive-capital, i.e. at that point where they are being fattened, prior to becoming commodity-capital, waiting for sale, they are raw material, a physical component of the end product, and so circulating capital, as is the auxiliary material (fodder) used in their production process.

The fact that the end product has the same physical form as the raw material, i.e. cattle, is not relevant. The fattened cattle is a different commodity than the unfattened cattle that entered the production process.

Smith: *“The whole value of the seed too is properly a fixed capital. Though it goes backwards and forwards between the ground and the granary, it never changes masters, and therefore it does not properly circulate. The farmer makes his profit not by its sale, but by its increase.” [Vol. II, p. 256.]” (p 205)*

Marx comments,

“At this point the utter thoughtlessness of the Smithian distinction reveals itself. According to him seed would be fixed capital, if there would be no “change of masters,” that is to say, if the seed is directly replaced out of the annual product, is deducted from it. On the other hand it would be circulating capital, if the entire product were sold and with a part of its value seed of another owner were bought. In the one case there is a “change of masters,” in the other there is not. Smith once more confuses here circulating and commodity-capital. The product is the material vehicle of the commodity-capital, but of course only that part of it which actually enters into the circulation and does not re-enter directly into the process of production from which it emerged as a product.

Whether the seed is directly deducted from the product as a part of it or the entire product is sold and a part of its value converted in the purchase of another man's seed — in either case it is mere replacement that takes place and no profit is made by this replacement. In the one case the seed enters into circulation as a commodity together with the remainder of the product; in the other it figures only in book-keeping as a component part of the value of the advanced capital. But in both cases it remains a circulating constituent of the productive capital. The seed is entirely consumed to get the product ready, and it must be entirely replaced out of the product to make reproduction possible.” (p 205-6)

Marx refers back to the distinction he had made in *Capital I, Chapter 8*, between raw and auxiliary material, which loses its form, in the labour process, and the instruments of labour, which do not.

“The corpses of machines, tools, workshops, etc., are always separate and distinct from the product they helped to turn out.” (Buch I, Kap. VI, S. 192.)” (p 206)

But, the distinction applies whether this labour process is one undertaken under capitalism or under production purely for personal consumption, but this is falsified by Smith.

“He does so 1) by introducing here the totally irrelevant definition of profit, claiming that some of the means of production yield a profit to their owner by preserving their form, while the others do so by losing it; 2) by jumbling together the alterations of a part of the elements of production in the labour-process with the change of form (purchase and sale) that is characteristic of the exchange of products, of commodity circulation, and which at the same time includes a change in the ownership of the circulating commodities.” (p 206)

Turnover of capital presumes the circulation of capital, $C' - C'$, or P..P, i.e. that the commodity-capital is sold, and the proceeds turned into productive-capital once more, replacing that consumed. The fact that, in some instances, a capitalist producer uses some of their own product to directly replace raw material or auxiliary material, used in their own production process, does not change this reality, or the nature of the productive-capital.

Seed, produced by a farmer, that is used to replace the seed used in its own production, is still circulating not fixed capital, because the original seed used in the process was completely used up, and its value wholly transferred to the end product. None of the original seed remained at the end of that process, none of its value remained fixed, waiting to be transferred in some subsequent production.

The same is true of coal produced by a mine, some of which goes to replace coal used to power a steam engine, at the same mine, to pump out water, that enabled the replacement coal to be produced. The coal used for that purpose is circulating not fixed capital, despite the fact that it does not change hands. It is wholly consumed in the production process, and all its value transferred.

“Adam Smith tells us now what circulating and fixed capital consist of. He enumerates the things, the material elements, which form fixed, and those which form circulating capital, as if this definiteness were inherent in these things materially, by nature, and did not rather spring from their definite function within the capitalist process of production.” (p 207)

But, as Marx points out, in the same chapter, Smith refers to a dwelling, saying it can act as capital for its owner, providing him with revenue, and yet from the perspective of society, does not, because it does not increase society's revenue or wealth at all.

“Here, then, Adam Smith clearly states that the property of being capital is not inherent in things as such and in any case, but is a function with which they may or may not be

invested, according to circumstances. But what is true of capital in general is also true of its subdivisions.” (p 207)

Moreover, it is function which determines whether a particular form of capital fulfils the role of fixed or circulating capital. Cattle used for labouring (oxen pulling ploughs) or, for example, dairy cattle producing milk, form part of the fixed capital. Only a part of their value is transferred into the product they help produce, the rest remaining fixed within them, to be transferred piecemeal to future production. Cattle used simply for fattening to be sold, are raw material, and thereby circulating capital. The fact that the latter may take several years to fatten and be sold, also does not change their nature as circulating capital. At no point do they transfer a part of their value into the end product, whilst a part of their value remains fixed within them. They are sold, and at that point, the whole of their value is transferred to the end product, and reproduced in their exchange value.

“On the other hand the same thing may now function as a constituent part of productive capital and now belong to the fund for direct consumption. A house for instance when performing the function of a workshop, is a fixed component part of productive capital; when serving as a dwelling it is in no wise a form of capital. The same instruments of labour may in many cases serve either as means of production or as means of consumption.” (p 207)

Marx then again points out Smith's confusion, because, having set out this list of fixed and circulating capital, he once again confuses that definition with that for circulation capital, i.e. commodity and money capital.

Smith: *“The circulating capital consists ... of the provisions, materials, and finished work of all kinds that are in the hands of their respective dealers, and of the money that is necessary for circulating and distributing them, etc.” (p 208)*

Smith: *“... The third and last of the three portions into which the general stock of the society naturally divides itself, is the circulating capital, of which the characteristic is, that it affords a revenue only by circulating or changing masters. It is composed likewise of four parts: first of the money, secondly, of the stock of provisions which are in the possession of the butcher, the grazier, the farmer ... from the sale of which they expect to derive a profit ... Fourthly and lastly, of the work which is made up and completed, but which is still in the hands of the merchant and manufacturer. And, thirdly, of the materials, whether altogether rude, or more or less manufactured, of clothes, furniture, and buildings, which are not yet made up into any of those three shapes, but which remain in the hands of the growers, the manufacturers, the mercers and drapers, the timber-merchants, the carpenters and joiners, the brick-makers, etc.” (p 208)*

All of these constitute capital in circulation, not circulating capital. Circulating and fixed capital are forms of productive-capital. Money-capital exists prior to being metamorphosed into productive-capital. The stock of provisions held by the butcher etc. and that in the hands of the merchant, constitute commodity-capital, and so are neither fixed nor circulating capital.

“The product of the cotton spinner, yarn, is the commodity-form of his capital, is commodity-capital as far as he is concerned. It cannot function again as a constituent part of his productive capital, neither as material of labour nor as an instrument of labour. But in the hands of the weaver who buys it it is incorporated in the productive capital of the latter as one of its circulating constituent parts. For the spinner, however, the yarn is the depository of the value of part of his fixed as well as circulating capital (apart from the surplus-value).” (p 209-10)

In the other category, Smith mixes up those elements of circulating capital, such as the raw materials, including the semi-finished goods, that are used in the production process, and those goods in the hands of the 'mercers', 'drapers' and so on, that constitute commodity-capital.

In this list, Marx notes, Smith does not include labour-power. Smith confuses circulating capital with commodity-capital and money-capital. But, labour-power is not capital at all. The worker is not a capitalist. He sells his commodity labour-power, at its value, but not as a capitalist. He derives no surplus value from it. In fact, as set out in *Volume I*, it is this fact, that a class exists, the workers, who have to pay the full cost of production for any article, including the unpaid labour-time, which enables surplus value to be produced and realised. The capitalists on the other hand, acquire those products not at the full cost, in labour-time, required for their production, but at the cost in labour-time of the inputs used for their production. The capitalists pay the full value of those inputs, but it is precisely because the workers work for a longer period than is required to cover their own reproduction, that in the production process, a surplus value is created.

So, using Smith's definition of circulating capital, as either commodity-capital or money-capital, labour-power is neither, and so cannot be circulating capital. Only when labour-power has stopped circulating as a commodity, been bought by the capitalist, and is being used in the production process, does it become capital – productive-capital. But, then it is capital in the hands of the capitalist, and does not change from his hands, so, on Smith's definition would now have to be considered fixed capital!

Marx writes,

“The “acquired and useful abilities” (p. 187) which Smith mentions under the head of fixed capital are on the contrary component parts of circulating capital, since they are “abilities” of the wage-labourer and he has sold his labour together with its “abilities.”” (p 211)

Smith's necessity of dividing all capital into being either fixed or circulating stems from his division of all social wealth into a consumption fund and into capital – fixed and circulating. This contrasts to Marx's analysis, which identifies money-capital and commodity-capital as capital involved in the process of circulation, and productive-capital comprising fixed and circulating capital.

“Inasmuch as under capitalist production the entire mass of social products circulates in the market as commodity-capital, with the exception of that part of the products which is directly used up again by the individual capitalist producers in its bodily form as means of production without being sold or bought, it is evident that not only the fixed and circulating elements of productive capital, but likewise all the elements of the consumption-fund are derived from the commodity-capital. This is tantamount to saying that on the basis of capitalist production both means of production and articles of consumption first appear as commodity-capital, even though they are intended for later use as means of production or articles of consumption, just as labour-power itself is found in the market as a commodity, although not as commodity-capital.” (p 212)

Smith: *“Of these four parts three — provisions, materials, and finished work, are either annually or in a longer or shorter period, regularly withdrawn from it and placed either in the fixed capital, or in the stock reserved for immediate consumption. Every fixed capital is both originally derived from, and requires to be continually supported by, a circulating capital. All useful machines and instruments of trade are originally derived from a circulating capital which furnishes the materials of which they are made and the*

maintenance of the workmen who make them. They require, too, a capital of the same kind to keep them in constant repair.” [p. 188.]” (p 212)

This is thoroughly confused, as Marx demonstrates. Of course, everything not provided by nature, that is bought under capitalism, be it for individual or productive consumption, be it raw material or a machine, is bought as a commodity and has circulated in the market as the commodity-capital of some capitalist.

“But it does not follow from this by any means that every fixed capital stems originally from some circulating capital; that follows only from the Smithian confusion of capital of circulation with circulating or fluent, i.e., non-fixed capital. Besides, Smith actually refutes himself. According to him himself, machines, as commodities, form a part of No. 4 of the circulating capital. Hence to say that they come from the circulating capital means only that they functioned as commodity-capital before they functioned as machines, but that materially they are derived from themselves; so is cotton, as the circulating element of some spinner’s capital, derived from the cotton in the market. But if Adam Smith in his further exposition derives fixed capital from circulating capital for the reason that labour and raw material are required to build machines, it must be borne in mind that in the first place, instruments of labour, hence fixed capital, are also required to build machines, and in the second place fixed capital, such as machinery, etc., is likewise required to make raw materials, since productive capital always includes instruments of labour, but not always material of labour. He himself says immediately afterwards:

“Land, mines, and fisheries, require all both a fixed and a circulating capital to cultivate them;”

(thus he admits that not only circulating but also fixed capital is required for the production of raw material)

*“and” (new error at this point) “their produce replaces with a profit, not only those capitals, but **all** the others in the society.” (p. 188.)*

This is entirely wrong. Their produce furnishes the raw material, auxiliary material, etc., for all other branches of industry. But their value does not replace the value of all other social capitals; it replaces only their own capital-value (plus the surplus-value). Adam Smith is here again in the grip of his physiocratic reminiscences.” (p 213-4)

Fixed capital, such as a machine only has use-value if it is sold as a machine. So looked at from one perspective, its destiny is set. But, it cannot be considered fixed capital on that basis. For one thing, a machine can be used in a non-capitalist manner, but also, as Marx points out, the fact that it may occupy a fixed position in a factory does not stop this machine being exported.

“It may be exported from the country in which it was produced and sold abroad directly or indirectly for raw materials, etc., or for champagne. In that case it has functioned only as a commodity-capital in the country in which it was produced, but never as fixed capital, not even after its sale.” (p 214)

But, things like buildings, which cannot be exported, are no more fixed capital simply because they are immovable. Take a house. For the capitalist builder, its sale is a source of profit. For Smith, it changes hands and so is circulating capital, but, for the buyer, it can only constitute any kind of capital if it is used in the production process. But, in that case, according to Smith, it is fixed capital. But, for most houses, they are not used in the production process, but only for living in. In that case, they are not capital of any sort, but

part of society's consumption fund, *"although they constitute an element of the social wealth of which capital is only a part."* (p 214)

Where things are physically fixed in their location, ownership of them may not be. Shares in a railway company can be sold all over the world. For Smith then, the fact that these shares are mobile, and that the owner of them can make a *"profit"* from their sale, would make them circulating capital. But, the railway itself if it is not to lie unused has to operate as fixed capital. A can sell a factory to B, but the factory itself still operates for B as it did for A, as fixed capital.

"Therefore, while the locally fixed instruments of labour, which cannot be detached from the soil, will nevertheless, in all probability, have to function as commodity-capital for their producer and not constitute any elements of his fixed capital (which is made up as far as he is concerned of the instruments of labour he needs for the construction of buildings, railways, etc.), one should not by any means draw the contrary conclusion that fixed capital necessarily consists of immovables." (p 215)

As stated previously, a ship is movable but is fixed capital. But, other things which are fixed in location constitute circulating capital.

"Such are for instance the coal consumed to drive the machine in the process of production, the gas used to light the factory, etc. They are circulating capital not because they bodily leave the process of production together with the product and circulate as commodities, but because their value enters wholly into that of the commodity which they help to produce and which therefore must be entirely replaced out of the proceeds of the sale of the commodity." (p 215)

As stated earlier, Smith does not classify labour-power as circulating capital, but he does argue that the means of subsistence for the worker does constitute circulating capital. That is clearly wrong because for the sellers of those means of subsistence, they constitute commodity-capital, and for the workers who buy them, they are only commodities and not capital at all. For the capitalist who employs the workers, the means of subsistence do not form capital, because he does not buy them. He pays wages to his workers so that they can do so.

The *Physiocrats* correctly argued that wages were paid out of circulating capital – *avances annuelle*, but they do not count the labour-power bought with those wages as productive-capital, rather they count the means of subsistence given to the farm labourers. That is consistent with their view that the value of the end product is equal to the value of everything that went into its production. That is the value added by labour is only equal to the value of the means of subsistence given to those workers, just as the value added by a horse is equal to the food etc. provided for it. As Marx sets out in the *Grundrisse*, this is true of slave labour. A slave, like any other pack animal, constitutes fixed capital, and, therefore, constant not circulating, variable capital. A slave, like an animal or a machine, therefore, can produce a surplus product, but not surplus value. Only wage labour produces surplus value, and that is precisely due to the fact that the wage labour enters the market as a free agent to sell their labour-power, and to buy commodities at their value.

"in the relations of slavery and serfdom....The slave stands in no relation whatsoever to the objective conditions of his labour; rather, labour itself, both in the form of the slave and in that of the serf, is classified as an inorganic condition of production along with other natural beings, such as cattle, as an accessory of the earth."

(*Grundrisse*, p 489)

*“In production based on slavery, as well as in patriarchal agricultural-industrial production, where the greatest part of the population directly satisfies the greatest part of its needs directly by its labour, the sphere of circulation and exchange is still very narrow; and more particularly in the former, the slave does not come into consideration as engaged in exchange at all. But in production based on capital, consumption is mediated at all points by exchange, and labour never has a **direct** use value for those who are working. Its entire basis is labour as exchange value and as the creation of exchange value.*

Well. First of all

*the wage worker as distinct from the slave is himself an independent centre of circulation, someone who exchanges, posits exchange value, and maintains exchange value through exchange. **Firstly:** in the exchange between that part of capital which is specified as wages, and living labour capacity, the **exchange value** of this part of capital is posited immediately, before capital again emerges from the production process to enter into circulation, or this can be conceived as itself still an act of circulation. **Secondly:** To each capitalist, the total mass of all workers, with the exception of his own workers, appear not as workers, but as consumers, possessors of exchange values (wages), money, which they exchange for his commodity. They are so many centres of circulation with whom the act of exchange begins and by whom the exchange value of capital is maintained. They form a proportionally very great part -- although not quite so great as is generally imagined, if one focuses on the industrial worker proper -- of all consumers. The greater their number -- the number of the industrial population -- and the mass of money at their disposal, the greater the sphere of exchange for capital. We have seen that it is the tendency of capital to increase the industrial population as much as possible.”*

(Grundrisse, Chapter 8)

For all direct producers, as owners of the means of production, as set out in *Volume 1, Chapter 5*, the value of the commodities they produce is equal to the cost of that production to them. For a direct producer, who is also a slave owner, the cost of maintaining the slave is part of that cost. But, the market price of the commodity in a pre-capitalist economy is also equal to this cost, so no surplus value is produced! For example, measured in labour-time, the value of producing 100 kilos of wheat might be 100 hours seeds, 100 hours subsistence for slave, 100 hours labour by direct producer. The value of the product is then 300 hours, even if the slave has worked for 200 hours. If the direct producer sells it at its value, they will only get back what it has cost them to produce.

But, in such an economy where the only buyers in the market are themselves owners of the means of production that is the situation. If direct producer A above tries to sell their wheat for 400 hours to cover the actual time worked by the slave rather than paid for, then what they gain as a seller they will lose as a buyer. Direct producer B, who has the same costs for producing potatoes, will likewise sell their potatoes that only cost 300 hours to produce for 400. A and B will each have overcharged one another 100 hours, and cancelled out their gain. It would be as if they had sold at 300 to begin with. Surplus value can only be produced and realised where capital exchanges with revenue. No surplus value arises where capital exchanges with capital, or revenue exchanges with revenue. In other words, surplus value can only arise where capital meets wage labour, where capital buys labour-power as a commodity, and wages buy commodities from capital. If workers worked for capital, but provided all their own means of subsistence directly, using their own means of production, capital could not realise surplus value.

But, under capitalism, a class of non-owners exists, who are nevertheless buyers of commodities. Workers have to buy commodities at a price equal to the labour-time required

for production, and that price includes not just the price of the labour-time that is paid for, but that also which is not paid for. This is the basis of surplus value, and why as Marx describes in the *Grundrisse*, above, exchange value only assumes its mature form when wage labour preponderates, and wage workers form the bulk of consumers. It is this fact that is also the basis of capital's "*Civilising Mission*", which is, Marx says, inherent in its nature rather than something externally imposed.

Because, capital continually revolutionises production, it continually expands that production faster than the market can absorb it. That manifests as overproduction of capital both in partial and general form. In order to overcome that overproduction, capital continually, therefore, has to develop new types of use values that can be produced and sold to workers at values that enable surplus value to be realised.

"The simple concept of capital has to contain its civilizing tendencies etc. in themselves; they must not, as in the economics books until now, appear merely as external consequences." (ibid)

The *Physiocrats*, Engels says in his *Supplement to Volume III*, were rather like Joseph Priestley who produced oxygen, but did not understand what he had uncovered, calling it "*de-phlogisticated air*". The *Physiocrats* uncovered the source of surplus value in production, but did not understand what they had uncovered. It was only Marx that later "*discovered*" surplus value, by properly understanding and explaining what they had uncovered. The *Physiocrats* were prevented from understanding the source of surplus value because of their theory in which it is only agricultural labour that was productive, and that it is not the labour that produces surplus value but arises because "*of the special activity (assistance) of nature in this branch*". (p 216)

Smith classifies the means of subsistence as circulating capital because he confused capital involved in circulation, i.e. commodity-capital with circulating capital.

"But the physiocratic conception too lurks in Smith's analysis, although it contradicts the esoteric — really scientific — part of his own exposition." (p 216)

Capital, advanced for production, can only take the form of products of past labour. That includes labour-power, which has been produced by the workers reproducing themselves. Part of that is through them consuming the means of subsistence. The latter, do not, of course, differ, either in their use value, or value, from the raw materials used in production, or the food provided to animals.

"The means of subsistence cannot themselves expand their own value or add any surplus-value to it. Their value, like that of the other elements of the productive capital, can re-appear only in the value of the product. They cannot add any more to its value than they have themselves." (p 217)

In other words, here, the value of the labour-power. Wages are part of the circulating capital not for any reason attached to the means of subsistence bought with those wages, but simply because of the way this part of the advanced capital-value is to be replaced, i.e. by the fact that its entire value is transferred in one go to the end product, and is then realised on sale, to be returned once more in the purchase of replacement labour-power of equal magnitude.

"The purchase and repurchase of labour-power belong in the process of circulation. But it is only within the process of production that the value laid out in labour-power is converted (not for the labourer but for the capitalist) from a definite, constant magnitude into a variable one, and only thus the advanced value is converted altogether into capital-value,

into capital, into self-expanding value. But by classing, like Smith, the value expended for the means of subsistence of the labourers, instead of value laid out in labour-power, as the circulating component of productive capital, the understanding of the distinction between variable and constant capital, and thus the understanding of the capitalist process of production in general, is rendered impossible. The determination that this part of capital is variable capital in contrast to the constant capital, spent for material creators of the product, is buried beneath the determination that the part of the capital invested in labour-power belongs, as far as the turnover is concerned, in the circulating part of productive capital. And the burial is brought to completion by enumerating the labourer's means of subsistence instead of his labour-power as an element of productive capital. It is immaterial whether the value of the labour-power is advanced in money or directly in means of subsistence. However under capitalist production the latter can be but an exception." (p 217-8)

Marx describes how this error prevents Smith and his followers from understanding the source of surplus value, and how they come to have such problems in distinguishing between labour (measure of value) and labour-power (commodity).

"By thus establishing the definition of circulating capital as being the determinant of the capital value laid out for labour-power — this physiocratic definition without the premise of the physiocrats — Adam Smith fortunately killed among his followers the understanding that that part of capital which is spent on labour-power is variable capital. The more profound and correct ideas developed by him elsewhere did not prevail, but this blunder of his did." (p 218)

Chapter 11 - Theories of Fixed and Circulating Capital. Ricardo

Ricardo discusses fixed and circulating capital, as part of his explanation of why prices differ from values. His analysis lacks clarity and continues some of the confusion of Smith. So, for example, he basically calls labour circulating capital and the instruments of labour that “*support labour*”, fixed capital.

“On the one hand the circulating capital is here lumped together with the variable capital, i.e., with that part of productive capital which is laid out in labour. But on the other hand doubly erroneous definitions arise for the reason that the antithesis is not derived from the process of self-expansion of value — constant and variable capital — but from the process of circulation (Adam Smith’s old confusion).” (p 219)

But, Ricardo also distinguishes between these instruments of labour according to their durability, and places this distinction on the same level as the distinction between constant and variable capital. However, the former only determines how the value of constant capital is transferred to the end product, whilst the latter explains the source of surplus value.

“If instead of seeing through the internal machinery of the capitalist process of production one considers merely the accomplished phenomena, then these distinctions actually coincide. In the distribution of the social surplus-value among the various capitals invested in different branches of industry, the differences in the different periods of time for which capital is advanced (for instance the various degrees of durability of fixed capital) and the different organic compositions of capital (and therefore also the different circulations of constant and variable capital) contribute equally toward an equalisation of the general rate of profit and the conversion of values into prices of production.” (p 220)

That pre-empts Marx’s solution to the problem Ricardo sought to resolve, i.e. the fact that prices differed from exchange values. Marx also discusses Ricardo's mistakes in this respect, in much greater detail in *Theories of Surplus Value, Part II*.

Looked at from the circulation process, there is instruments of labour (fixed capital) on one side, and labour and materials (circulating capital) on the other. Looked at from the production process and expansion of capital, there is constant capital (instruments of labour and materials) on one side, and variable capital (labour-power) on the other.

Marx says, from the perspective of the organic composition of capital, it doesn't matter whether the constant capital is made up of lots of instruments of labour and few materials, or few instruments of labour and lots of material. What is significant is the proportion of constant capital to labour-power.

This is not inconsistent with, but could be read as not exactly tallying with what he said in *Volume I*. There he makes clear that what is important is the technical composition of capital, i.e. the physical quantity of constant capital as against the physical amount of labour-power. In *Chapter 25* he writes,

“The composition of capital is to be understood in a two-fold sense. On the side of value, it is determined by the proportion in which it is divided into constant capital or value of the means of production, and variable capital or value of labour power, the sum total of wages. On the side of material, as it functions in the process of production, all capital is divided into means of production and living labour power. This latter composition is determined by the relation between the mass of the means of production employed, on the one hand, and

the mass of labour necessary for their employment on the other. I call the former the value-composition, the latter the technical composition of capital.

Between the two there is a strict correlation. To express this, I call the value composition of capital, in so far as it is determined by its technical composition and mirrors the changes of the latter, the organic composition of capital. Wherever I refer to the composition of capital, without further qualification, its organic composition is always understood."

So, it is the technical composition that is determinate. That is so, because of its implication for the employment of labour-power. As he says in defining what he means by the expansion of capital,

"Growth of capital involves growth of its variable constituent or of the part invested in labour power..."

Accumulation of capital is, therefore, increase of the proletariat." (ibid)

So, when Marx says it doesn't matter whether the constant capital is made up of lots of instruments of labour or lots of material, he is still stressing that it is this physical relation between constant and variable capital, not the value relation that is significant. In terms of the value of the commodity, it makes no difference whether the value of constant capital contained in it represents a lot of material, or a lot of wear and tear of fixed capital. That is particularly notable in relation to primary production, in mining, for example, where no raw material is used in production, and where the technical composition of capital is specifically related to the amount of fixed capital used as machines etc.

For example, a large number of instruments implies a large number of workers, even if each worker uses many instruments. They may require relatively little material by comparison, if the large range of instruments signifies a complicated labour process. On the other hand, an equally large number of workers might process a large amount of material using just one or two instruments, where the labour process is more straightforward. In either case, it is the technical relation between the physical amount of constant capital, and variable capital that determines how many workers are employed, and to what extent that number will rise as capital expands. As Marx puts it,

"Growth of capital involves growth of its variable constituent or of the part invested in labour power. A part of the surplus-value turned into additional capital must always be re-transformed into variable capital, or additional labour fund. If we suppose that, all other circumstances remaining the same, the composition of capital also remains constant (i.e., that a definite mass of means of production constantly needs the same mass of labour power to set it in motion), then the demand for labour and the subsistence-fund of the labourers clearly increase in the same proportion as the capital, and the more rapidly, the more rapidly the capital increases..." (ibid)

By the same token, in looking at fixed and circulating capital, it doesn't matter whether the latter is made up of much materials and little labour-power or vice versa. But, in Ricardo's analysis, raw material and auxiliary material appear neither as fixed nor circulating capital.

"It disappears entirely; for it will not do to class it with fixed capital, because its mode of circulation coincides entirely with that of the part of capital laid out in labour-power. And on the other hand it should not be placed alongside circulating capital, because in that event the identification of the antithesis of fixed and circulating capital with that of constant and variable capital, which had been handed down by Adam Smith and is tacitly retained, would abolish itself. Ricardo has too much logical instinct not to feel this, and for this reason that part of capital vanishes entirely from his sight." (p 220-21)

Marx reiterates a point made in *Volume I* that although it is stated that the capitalist advances capital for wages, the reverse is true. Wages are always paid in arrears. The worker advances his labour-power to the capitalist, by working for a day, week, month or whatever, before being paid. On some occasions the worker might be given an advance on their wages in the form of a loan, but this is then deducted from the wages when they are paid at the end of the period.

The fact that the capitalist, in turn, might not get back the capital they have advanced, as variable and other productive capital, for some time, does not affect this. The seller of a commodity, here the worker selling labour-power, doesn't care what the buyer does with it after. The capitalist can't buy a machine cheaper just because it will take them a longer rather than a shorter time to get its value back.

Variable capital, paid as wages, buys labour-power, a commodity whose value is constant and equal to the value of the means of subsistence required for its reproduction. But, this labour-power has the unique ability not only to reproduce this value, of its own reproduction, but to produce a surplus value over and above it. But, this unique characteristic is hidden when labour is viewed instead simply from the perspective of circulation, and only distinguished from other types of capital as being circulating rather than fixed capital. As circulating capital, it is no more capable of producing surplus value than its other components such as raw and auxiliary materials.

As a consequence, Ricardo cannot provide any analysis of the source of surplus value, and so ignores it. As Marx describes in *Theories of Surplus Value*, when it comes to profit, Ricardo simply assumes the existence of an average rate of profit a priori, without explaining where it comes from.

"Similarly the fact is ignored that the part of the value added to the product by the capital laid out in wages is newly produced (and therefore really reproduced), while the part of the value which the raw material adds to the product is not newly produced, not really reproduced, but only preserved in the value of the product, conserved, and hence merely reappears as a component part of the value of the product." (p 222)

But, then, looked at from this perspective, both of these types of capital, fixed and circulating, can only transfer their value to the end product. The only distinction is that the former transfers it piecemeal. But, in either case it is impossible, on this basis, for a surplus value to arise. The source of the surplus value is obliterated.

"It is therefore understandable why bourgeois Political Economy instinctively clung to Adam Smith's confusion of the categories "constant and variable capital" with the categories "fixed and circulating," and repeated it parrotlike, without criticism, from generation to generation for a century." (p 223)

The *Physiocrats* avoided this confusion because, for them, surplus value was not a product of capital but of the special role that nature plays in assisting agricultural labour. So, this is completely separate from their views on the different types of capital, which they can then differentiate in accordance with the period for which it is advanced.

The essential point about variable capital is that the capitalist exchanges a constant sum to buy a commodity, labour-power, that creates a variable sum. Marx reiterates the point that it does not matter whether this constant sum paid out, is in the form of money wages, or in the form of means of subsistence provided to the workers. Taking workers as a whole, and capital as a whole, capital as a whole does pay workers as a whole in commodities. The workers get back a portion of the commodities they have produced. Money wages only

function as a means of effecting this distribution, because different capitals are in possession of the commodities that workers require.

Fixed capital that is more durable will last longer than that which is less durable, and so will give up its use value and value more slowly. But, the quality of durability is not what makes capital fixed rather than circulating. Steel used as a raw material is equally as durable as the machines that process it. Brass used as a raw material even more so. Diamonds are one of the most durable substances, and yet are usually raw material rather than fixed capital.

The fact that a machine or other instrument of labour is used in repeated processes of itself requires that it be durable. It is not that durability that determines whether something is fixed rather than circulating, but its function in the process.

“The real substance of the capital laid out in wages is labour itself, active, value-creating labour-power, living labour, which the capitalist exchanges for dead, materialised labour and embodies in his capital, by which means, and by which alone, the value in his hands turns into self-expanding value.” (p 225)

In other words, the capital is not the money the capitalist hands over as wages, but the living labour-power bought with them. The wages themselves represent not capital, but dead labour both considered as money, or the commodities bought with it by the worker.

“But this power of self-expansion is not sold by the capitalist. It is always only a constituent part of his productive capital, the same as his instruments of labour; it is never a part of his commodity-capital, as for instance the finished product which he sells.” (p 225)

In the production process, this labour-power that is the basis of the self-expansion, does not confront the fixed capital as circulating capital, alongside the materials, but confronts both the instruments of labour and the materials. It confronts them as variable capital.

“Or, if mention is to be made here of a material difference, so far as it affects the process of circulation, it is only this: It follows from the nature of value, which is nothing but materialised labour, and from the nature of active labour-power, which is nothing but labour in process of materialisation, that labour-power continually creates value and surplus-value during the time it functions; that what on the part of labour-power appears as motion, as a creation of value, appears on the part of its product in a state of rest, as created value.” (p 226)

The capital-value of the labour-power no longer exists as productive-capital. It is consumed in the production process. Provided that the consequence of that production process is that the labour-power has created a new value that exceeds that of the consumed labour-power, it will reproduce the value of the labour-power, and also produce a surplus value. That new value, along with the value of the materials and wear and tear of fixed capital, then appear in the end product, which now exists as commodity-capital.

“In order to repeat the process, the product must be sold and new labour-power constantly bought with the proceeds and incorporated in the productive capital. This then gives to the part of capital invested in labour-power, and to that invested in material of labour, etc., the character of circulating capital as opposed to the capital remaining fixed in the instruments of labour.” (p 226)

If, instead of recognising this fundamental opposition of constant and variable capital, the defining characteristic is fixed as opposed to circulating capital, then the capital laid out as wages is no longer active, living labour, but is the means of subsistence bought with those

wages, because the labour is no longer the means by which capital expands, but like raw materials only transfers its value whole to the end product, and that value is equal to its cost of reproduction.

Ricardo says,

“According as capital is rapidly perishable and requires to be frequently reproduced, or is of slow consumption, it is classed under the heads of circulating or fixed capital.” (p 227)

But, the demarcation between durability is vague. Moreover, many of those things that comprise the workers consumption – a house, their furniture, tools etc. - are just as durable as similar things, which in the workplace would be considered fixed capital.

*“Thus we have once more happily arrived in the camp of the Physiocrats, where the distinction between **avances annuelles** and **avances primitives** was one referring to the time of consumption, and consequently also to the different times of reproduction of the capital employed. Only, what with them constitutes an important phenomenon of social production and is described in the **Tableau Économique** in connection with the process of circulation, becomes here a subjective and, in Ricardo’s own words, superfluous distinction.” (p 227)*

On Ricardo's basis the fundamental distinction between constant and variable capital is once more obliterated , and along with it any hope of understanding the source of surplus value.

“This wholly contradicts Ricardo’s doctrine of value, likewise his theory of profit, which is in fact a theory of surplus-value. In general he considers the distinction between fixed and circulating capital only to the extent that different proportions of both of them in equally large capitals invested in different branches of production influence the law of value, particularly the extent to which an increase or decrease of wages in consequence of these conditions affects prices. But even within this restricted investigation he commits the gravest errors on account of his confusing fixed and circulating with constant and variable capital.” (p 228)

Ricardo's analysis of this effect on prices is necessarily flawed because like Smith, he confuses variable with circulating capital.

Chapter 12 - The Working Period

Different products require different amounts of time to produce. Some products require essentially one labour process, for their completion, whereas others require several labour processes, undertaken over a long period, to form one continued process.

For example, a cotton spinner produces yarn, every day, using the same process. Every day, the productive-capital is converted into commodity-capital that can be sold and reconverted into productive-capital. On the other hand, a locomotive manufacturer might require several months to complete a single engine. Every day, the workers come into work and may work for the same length of time as the cotton spinners. They may even be paid on a similar basis, and consume the same means of subsistence. But, every day, the locomotive workers perform a different labour process than that of the previous day, as they complete a different part of the engine.

As a consequence, it takes several months before the productive-capital is transformed into commodity-capital, and so before it can be sold and transformed again into productive-capital.

The distinction between fixed and circulating capital is irrelevant here. That is short labour processes require large amounts of fixed capital that gives up only a small part of its use value and value during the process, and relatively small amounts of circulating capital. But, long labour processes may require relatively little in the way of fixed capital, but large amounts of circulating capital. For example, cotton spinning might require a large amount of spinning machines, but yarn streams from them by the hour. But, a house might take several weeks to complete, yet the workers only require hand tools.

Moreover, even in the same line of production, different amounts of time will be required. It will take longer to build a factory than a house, for instance.

“The difference in the duration of the productive act must evidently give rise to a difference in the velocity of the turnover, if invested capitals are equal, in other words, must make a difference in the time for which a certain capital is advanced.” (p 233)

Compare the situation of the spinner and the locomotive manufacturer. Suppose both have the same organic composition of capital, and both can sell their output as soon as its completed. Suppose, the cotton spinner sells their output by the week, and the locomotive maker sells theirs after 12 weeks. Each week, they spend £1,000 on constant capital, and £1,000 on variable capital. There is a 100% rate of surplus value.

Week 1

Cotton Spinner: $c\ 1000 + v\ 1000 + s\ 1000 = C\ 3000$

Locomotive Maker: $c\ 1000 + v\ 1000 + s\ 1000 = C\ 3000$.

However, at the end of this week, the cotton spinner sells their output. From the proceeds they now have the capital to replace the productive-capital consumed. The locomotive manufacturer does not. They have to cover the next week's capital advance from their own pocket or by borrowing from the bank. If we look at how much capital is actually advanced by each then at the end of week 2:

Week 2

Cotton Spinner: $c\ 1000 + v\ 1000 + s\ 1000 = C\ 3000$

Locomotive Manufacturer: $c\ 2000 + v\ 2000 + s\ 2000 = C\ 6000$

But, this output for the locomotive manufacturer still cannot be sold. The capital actually advanced by the cotton spinner remains £1,000 constant capital, and £1,000 variable capital, because each week it is reproduced out of the proceeds of the sale of yarn. But, the locomotive maker will have to advance additional capital each week. At the end of the 12 weeks, although the cotton spinner will have paid out £12,000 in constant capital, and £12,000 in variable capital, the same as the locomotive maker, they will only have had to advance £1,000 for each, because every week that capital has returned to them to be laid out once more.

The locomotive maker, however, each week, has had to dig into their own pocket to obtain additional capital. So, the real situation facing each is:

Cotton Spinner: £1,000 (constant) + £1,000 (variable) = £2,000 advanced, to produce £12,000 surplus value. Their rate of profit is $12,000/2,000 = 600\%$.

Locomotive Producer: £12,000 (constant) + £12,000 (variable) = £24,000 advanced to produce £12,000 surplus value. Their rate of profit is $12,000/24,000 = 50\%$.

“The expenditure of the one is made for one week, that of the other is the weekly expenditure multiplied by twelve. All other circumstances being assumed as equal, the one must have twelve times as much circulating capital at his disposal as the other.” (p 233)

Of course, the same relation applies whether we assume that the same amount of constant and variable capital is laid out or not. What is determinate is the rate of turnover.

Marx introduces a new concept here. That is the “*Working Period*”. It is the labour-time required for the completion of a particular use value. So, a metre of linen might require one hour to produce, but a locomotive 6,000 hours. For the workers, in either case, one hour's labour is one hour's labour, separate from any other, but for the locomotive, the 6,000 hours constitute one continuous labour process, even though it has been spread over 12 weeks.

The working period for the metre of linen is one hour, and for the locomotive 6,000 hours.

“When we speak of a working-day we mean the length of working time during which the labourer must daily spend his labour-power, must work day by day. But when we speak of a working period we mean the number of connected working-days required in a certain branch of industry for the manufacture of a finished product. In this case the product of every working-day is but a partial one, which is further worked upon from day to day and only at the end of the longer or shorter working period receives its finished form, is a finished use-value.” (p 234)

One consequence is that the effects of interruptions in production due to crises etc., have very different effects on different industries. If production of yarn is stopped – because cotton, from the US slave states, is blockaded for instance – the result is that tomorrow's yarn production does not occur. However, if a shipbuilder cannot obtain steel, then it is not just that tomorrow's work has to cease. All of the previous work and materials have been wasted, because the ship can only be sold in its completed form. Even if the buyer agrees to wait, and if eventually steel is provided, in the intervening period, some of the existing work will have deteriorated.

The significance of the distinction between fixed and circulating capital is also brought out here. The turnover time of the capital is dependent upon the working period of the product. But, for fixed capital, as opposed to circulating capital, it transfers its value to the end product over several working periods.

“Whether a steam-engine transfers its value daily piecemeal to some yarn, the product of a discrete labour-process, or for three months to a locomotive, the product of a continuous act of production, is immaterial as far as laying out the capital required for the purchase of the steam-engine is concerned. In the one case its value flows back in small doses, for instance weekly, in the other case in larger quantities, for instance quarterly. But in either case the renewal of the steam-engine may take place only after twenty years. So long as every individual period within which the value of the steam-engine is returned piecemeal by the sale of the product is shorter than the lifetime of the engine itself, the latter continues to function in the process of production for several working periods.” (p 235)

If a machine lasts for ten years, it does not really matter whether the value of its wear and tear is returned in the sale of the product at the end of a week, month or year, because that capital-value is not required for another ten years. It only has to be advanced again when the machine is replaced.

But, that is not the case with the circulating capital. It is wholly consumed during the working-period, and has to be replaced in full. The longer the working period, the more circulating capital has to be advanced.

For the locomotive production then,

“The labour-power bought for a definite week is expended in the course of the same week and is materialised in the product. It must be paid for at the end of the week. And this investment of capital in labour-power is repeated every week during the three months; yet the expenditure of this part of the capital during the week does not enable the capitalist to settle for the purchase of the labour the following week. Every week additional capital must be expended to pay for labour-power, and, leaving aside the question of credit, the capitalist must be able to lay out wages for three months, even if he pays them only in weekly doses. It is the same with the other portion of circulating capital, the raw and auxiliary materials. One layer of labour after another is piled up on the product. It is not alone the value of the expended labour-power that is continually being transferred to the product during the labour-process, but also surplus-value. This product, however, is unfinished, it has not yet the form of a finished commodity, hence it cannot yet circulate. This applies likewise to the capital-value transferred in layers from the raw and auxiliary materials to the product.” (p 235)

The turnover time, however, is not just a function of the working period, or time of production, because products are not sold immediately after they are produced. The turnover time is the sum of the time of production and the time of circulation.

“At the less developed stages of capitalist production, undertakings requiring a long working period, and hence a large investment of capital for a long time, such as the building of roads, canals, etc., especially when they can be carried out only on a large scale, are either not carried out on a capitalist basis at all, but rather at communal or state expense (in earlier times generally by forced labour, so far as the labour-power was concerned). Or objects whose production requires a lengthy working period are fabricated only for the smallest part by recourse to the private means of the capitalist himself. For instance, in the building of a house, the private person for whom it is built makes a number of partial advance payments to the building contractor. He therefore actually pays for the

house piecemeal, in proportion as the productive process progresses. But in the advanced capitalist era, when on the one hand huge capitals are concentrated in the hands of single individuals, while on the other the associated capitalist (joint-stock companies) appears side by side with the individual capitalist and a credit system has simultaneously been developed, a capitalist building contractor builds only in exceptional cases on the order of private individuals. His business nowadays is to build whole rows of houses and entire sections of cities for the market, just as it is the business of individual capitalists to build railways as contractors.” (p 237)

Marx describes the consequence of this for house building in London with reference to testimony from builders. Instead of building to order, they built on speculation for the market, using credit, so that they were leveraged up to fifty times their own resources.

“Then, if a crisis comes along and interrupts the payment of the advance instalments, the entire enterprise generally collapses. At best, the houses remain unfinished until better times arrive; at the worst they are sold at auction for half their cost.” (p 238)

Production that requires very prolonged working periods, and normally requires very large scale production, does not properly come under capitalist production until the era of the monopoly of private capitalist property has ended (*“the expropriation of the expropriators”* as Marx described it in *Volume I*). It is only when this monopoly of private capital gives way to socialised capital in the form of the joint stock companies, that the resources become available for this scale of production.

“It goes without saying that whether the capital advanced in production belongs to him who uses it or does not has no effect on the velocity or time of turnover.” (p 238)

The more productivity rises, the more the working period is shortened. But, in general, along with this, to achieve the higher productivity, goes an increase in the amount of fixed capital, employed as machines etc.

“On the other hand the working period in certain branches of production may be diminished by the mere extension of cooperation. The completion of a railway is expedited by setting afoot huge armies of labourers and thus tackling the job in many spots at once. The time of turnover is lessened in that case by an increase of the advanced capital. More means of production and more labour-power must be united under the command of the capitalist.” (p 239)

That in itself requires that whatever the total size of the available social capital, more of it is concentrated in single capitals, rather than being scattered throughout the economy.

“Inasmuch as credit promotes, accelerates and enhances the concentration of capital in one hand, it contributes to the shortening of the working period and thus of the turnover time.” (p 239)

For some products, no change in productivity can shorten the working period. Marx quotes, W. Walter Good,

“In regard to quicker returns, this term cannot be made to apply to corn crops, as one return only can be made per annum. In respect to stock, we will simply ask, how is the return of two- and three-year-old sheep, and four- and five-year-old oxen to be quickened.” (p 239)

But, Marx says, the need to raise money to pay for rent and taxes then leads to livestock being slaughtered too early, *“to the great detriment of agriculture.” (p 239)*

In the end, that leads to higher meat prices. In more recent times, however, science has provided means of fattening cattle and other livestock more quickly. Larger, more capitalised farms are also able to deal with longer production times. For example, in Brazil new types of corn can now be cropped three times a year, where once only one main crop and a smaller secondary crop was possible.

“Naturally, it is impossible to deliver a five-year-old animal before the lapse of five years. But what is possible, within certain limits, is getting animals ready for their destination in less time by changing the way of treating them. This is precisely what Bakewell accomplished. Formerly English sheep, like the French as late as 1855, were not fit for the butcher until four or five years old. According to the Bakewell system, sheep may be fattened when only one year old and in every case have reached their full growth before the end of the second year. By careful selection, Bakewell, a Dishley Grange farmer, reduced the skeleton of sheep to the minimum required for their existence.” (p 241)

Finally, because all of these different methods of shortening the working period apply in all branches of industry, the relative differences between them may be unaffected or even grow wider.

Chapter 13 - The Time of Production

“Working time is always production time, that is to say, time during which capital is held fast in the sphere of production. But vice versa, not all time during which capital is engaged in the process of production is necessarily working time.” (p 242)

Take forestry. The working period consists of that time required to clear the land to be planted, to prepare it, to plant seedlings, to erect fencing etc. It also consists of the time required to cut down mature trees, to transport them to the saw-mill, strip them, and cut them. But, between these two labour processes – that in respect of the working period constitute one continuous process – there could be an interval of 100 years! During that time, labour may not be needed at all, or only occasionally, and in small amounts. During that time, however, the production process continues, because the trees grow as part of a natural, organic process.

Consequently, the production-time here, is considerably longer than the working period. Its not just natural processes that this applies to. It applies to various chemical processes too. Wine needs time to ferment, pottery to dry etc.

“But the product is not finished, not ready, hence not fit to be converted from the form of productive into that of commodity-capital until the production period is completed. Consequently the length of the turnover period increases in proportion to the length of the production time that does not consist of working time.” (p 243)

If the production time is not fixed, as a result of natural processes, the turnover time can be reduced by shortening the production-time. An example is the introduction of chemical bleaching.

“The most magnificent illustration of an artificial abbreviation of the time of production taken up exclusively with natural processes is furnished by the history of iron manufacture, more especially the conversion of pig iron into steel during the last 100 years, from the puddling process discovered about 1780 to the modern Bessemer process and the latest methods introduced since. The time of production has been brought down tremendously, but the investment of fixed capital has increased in proportion.

A peculiar illustration of the divergence of the production time from the working time is furnished by the American manufacture of shoe-lasts. In this case a considerable portion of the unproductive costs arises from having to hold the timber at least eighteen months before it is dry enough to work, so as to prevent subsequent warping. During this time the wood does not pass through any other labour-process. The period of turnover of the invested capital is therefore not determined solely by the time required for the manufacture of the lasts but also by the time during which it lies unproductive in the shape of drying wood. It stays 18 months in the process of production before it can enter into the labour-process proper. This example shows at the same time that the times of turnover of different parts of the aggregate circulating capital may differ in consequence of conditions which do not arise within the sphere of circulation but owe their origin to the production process.” (p 243)

Wherever natural materials have been replaced with synthetic materials, this is a way of reducing the time of production.

The contrast between working period and time of production is greatest in agriculture because of the limitations imposed by nature. Especially where climate means that the

growing period is limited, this also imposes limits on when the working period is concentrated, i.e. for ploughing, sowing, and then reaping.

In Europe, that has traditionally meant that a lot of agricultural workers were seasonal. Either they were agricultural workers who took on other jobs in slack periods, or else they were casual workers – students, migrants etc., brought in at peak periods.

“The more unfavourable the climate, the more congested is the working period in agriculture, and hence the shorter is the time in which capital and labour are expended. Take Russia for instance. In some of the northern districts of that country field labour is possible only from 130 to 150 days throughout the year, and it may be imagined what a loss Russia would sustain if 50 out of the 65 millions of her European population remained without work during the six or eight months of the winter, when agricultural labour is at a standstill.” (p 244)

Parts of agriculture can overcome this, and organise production on a more regular and consistent basis. For example, dairy production can be undertaken so that milk, butter, cheese etc. can be produced in regular quantities at regular times. The introduction of silage means that dairy cattle can be maintained throughout the year. Similar developments occur for factory farming poultry etc.

But, it was the nature of Russian agriculture that meant that peasants needed other employment during the rest of the year.

“Apart from the 200,000 peasants who work in the 10,500 factories of Russia, local domestic industries have everywhere developed in the villages. There are villages in which all the peasants have been for generations weavers, tanners, shoemakers, locksmiths, cutlers, etc. This is particularly the case in the gubernias of Moscow, Vladimir, Kaluga, Kostroma, and Petersburg. By the way, this domestic industry is being pressed more and more into the service of capitalist production. The weavers for instance are supplied with warp and woof directly by merchants or through middlemen.” (p 244-5)

It provides the natural basis for this combination of agriculture with these subsidiary industries. It provides an entry point for capital, first in the form of merchant capital.

“When capitalist production later accomplishes the separation of manufacture and agriculture, the rural labourer becomes ever more dependent on merely casual accessory employment and his condition deteriorates thereby. For capital, as will be seen later, all differences in the turnover are evened out. Not so for the labourer.” (p 245)

Its not just the circulating capital that is bunched up into these periods, determined by nature. The fixed capital is only used in these periods too. Working animals have to be fed and maintained, however, throughout the year. The cost of their maintenance, even during these periods, when they are not being used, to pull the plough etc., therefore, forms a necessary cost, which must be transferred to the value of the end product. It is, in this respect, like the cotton waste that forms a necessary part of yarn production.

This sets aside these kinds of branches of production from other forms of production, where the working period and production time coincide. Other forms of fixed capital, for example, a steam traction engine, introduced to replace working cattle, would be the same. During parts of the year, it would be unused, and so suffer depreciation. But, unlike the depreciation of a machine in a factory, which represents a capital loss, this depreciation is a natural and unavoidable part of the production process. As a result, it does not constitute a capital loss, but is transferred to the value of the end product.

“Hence the product is in general increasing in price, since the transfer of value to it is not calculated according to the time during which the fixed capital functions but according to the time during which it depreciates in value. In branches of production such as these, the idling of the fixed capital, whether combined with current expenses or not, forms as much a condition of its normal employment as for instance the loss of a certain quantity of cotton in spinning; and in the same way the labour-power expended unproductively but unavoidably in any labour-process under normal technical conditions counts just as well as that expended productively. Every improvement which reduces the unproductive expenditure of instruments of labour, raw material, and labour-power also reduces the value of the product.” (p 246)

This is different from the depreciation of machinery generally, for the reason Marx sets out here. In general, depreciation is a function of time, and non-use. In general, depreciation can be minimised by maximum use, e.g. seven day, shift working. So, depreciation then is simply a capital loss, just as much as if the machine had been damaged or stolen. It does not get passed on to the value of the end product. It is the specific conditions that impose non-use that, in agriculture, means it is transferred to the value of the end product. However, in agriculture, as elsewhere, the capital loss, due to “*moral depreciation*” still imposes such a capital loss. In other words, if the value of the fixed capital is reduced because a new type of machine is introduced, or because the labour-time required for its production falls, then this does constitute a capital loss rather than contributing to the value of the end product.

In order to use the fixed capital more effectively, there is an incentive to try to spread out the working period during the whole year.

*“All methods by which in agriculture on the one hand the expenditures for wages and instruments of labour are distributed more evenly over the entire year, while on the other the turnover is shortened by raising a greater variety of crops, thus making different harvests possible throughout the year, require an increase of the circulating capital advanced in production, invested in wages, fertilisers, seed, etc. This is the case in the transition from the three-field system with fallow land to the system of crop rotation without fallow. It applies furthermore to the **cultures dèrobées** of Flanders.*

*‘The root crops are planted in **culture dèrobée**; the same field yields in succession first grain, flax, colza, for the wants of man, and after they are harvested root crops are sown for the maintenance of cattle. This system, which permits the keeping of horned cattle in the stables, yields a considerable amount of manure and thus becomes the pivot of crop rotation.’” (p 246-7)*

Marx quotes Thomas Hodgskin to the effect of the long production time in agriculture.

“They cannot bring their commodities to market in less time than a year. For that whole period they are obliged to borrow of the shoemaker, the tailor, the smith, the wheelwright, and the various other labourers, whose products they cannot dispense with, but which are completed in a few days or weeks.” (p 246)

But, in forestry that is even more pronounced. He quotes Kirchof (F. Kirchhof, *Handbuch der landwirthschaftlichen Betriebslehre*, Dessau, 1852, p 58)

“With forests producing certain species of trees the complete turnover takes as much as 150 years. Besides, a properly managed timber-growing establishment itself demands a supply of standing timber which amounts to ten to forty times the annual yield. Unless a

man has therefore still other sources of income and owns vast tracts of forest land, he cannot engage in regular forestry.” (p 248)

Explaining why this means it is a business that has often been conducted by the State, Marx notes,

“The long production time (which comprises a relatively small period of working time) and the great length of the periods of turnover entailed make forestry an industry of little attraction to private and therefore capitalist enterprise, the latter being essentially private even if the associated capitalist takes the place of the individual capitalist. The development of culture and of industry in general has evinced itself in such energetic destruction of forest that everything done by it conversely for their preservation and restoration appears infinitesimal.” (p 248)

Marx compares the situation in forestry, described by Kirchof, with that in stock raising. That is, the amount of timber, or the amount of livestock, that is going through the production process, i.e. trees growing, cattle being fattened, has to be many times the amount that is annually being sold. That is because it takes so long for a tree to grow etc.

On the one hand, a forest or a herd, appear as fixed capital, that give up a part of their use value each year, i.e. the trees felled, or cattle slaughtered. But, in reality, the trees and the livestock constitute both raw material and instruments of labour. They are raw material, in the sense that each tree or animal passes through the production process, and its value is realised in the end product in one go, rather than piecemeal.

Both trees and animals are instruments of labour in the sense that they are the means of propagating more trees and animals.

“Although this capital is a capital fixed in the process of production for a long time, and thus prolongs the turnover of the total capital, it is not a fixed capital in the strict definition of the term.

What is here called a supply — a certain amount of standing timber or livestock — exists relatively in the process of production (simultaneously as instruments of labour and material of labour); in accordance with the natural conditions of its reproduction under proper management, a considerable part of this supply must always be available in this form.” (p 248)

Another part of the capital, which turns over more slowly, in this way, is that stock of materials required for the production process, but which cannot all be used immediately.

“In this class belongs for instance manure before it is hauled to the field, furthermore grain, hay, etc., and such supplies of means of subsistence as are employed in the production of cattle.” (p 248-9)

Marx again quotes Kirchof on the problems this can cause.

““A considerable part of the working capital is contained in the farm’s supplies. But these may lose more or less of their value, if the precautionary measures necessary for their preservation in good condition are not properly observed. Lack of attention may even result in the total loss of a part of the produce supplies for the farm. For this reason, a careful inspection of the barns, feed and grain lofts, and cellars becomes indispensable, the store rooms must always be well closed, kept clean, ventilated, etc. The grain and other crops held in storage must be thoroughly turned over from time to time, potatoes and beets must be protected against frost, rain and rot.” (Kirchof, p. 292.)” (p 249)

What was said previously, in *Chapter 6*, about the need for a supply of productive-capital, applies here. The larger the capital, or the more protracted the process of circulation, i.e. difficulties in obtaining commodities from the market, the larger the supply that must be maintained. For some large farms, they are unable to produce all of the materials they require, e.g. animal feed, themselves and have to buy it in from other farms.

Chapter 14 - The Time of Circulation

The turnover time is the sum of the time of production and of circulation. All of the foregoing have shown the effects of fixed and circulating capital, the working period etc. on the time of production. But, similarly, changes in the time of circulation also affects the turnover time.

“One of the sections of the time of circulation — relatively the most decisive — consists of the time of selling, the period during which capital exists in the state of commodity-capital. The time of circulation, and hence the period of turnover in general, are long or short depending on the relative length of this selling time.” (p 252)

There can be considerable differences in this selling period, not just between different industries/commodities, but also between individual producers within the same industry. For example, it takes, on average, much longer to sell a motor car than it does a chocolate bar. The longer it takes to sell commodities, the more it may be necessary to invest additional capital in appropriate storage facilities, so that commodities do not deteriorate in the intervening period.

“One cause which acts permanently in differentiating the times of selling, and thus the periods of turnover in general, is the distance of the market in which a commodity is sold from its place of production. During the entire trip to the market, capital finds itself fettered in the state of commodity-capital.” (p 253)

Improvements in communication, and transport, reduce the amount of time required, and thereby reduce the turnover time, but, they do not alter the differences in time consequent upon the different distances to be travelled. Canals speed up the transport of coal for instance, but, on average, it is still going to take twice as long to transport it 100 miles as 50 miles.

“But the relative difference may be shifted about by the development of the means of transportation and communication in a way that does not correspond to the geographical distances. For instance a railway which leads from a place of production to an inland centre of population may relatively or absolutely lengthen the distance to a nearer inland point not connected by rail, as compared to the one which geographically is more remote. In the same way the same circumstances may alter the relative distance of places of production from the larger markets, which explains the deterioration of old and the rise of new centres of production because of changes in communication and transportation facilities.” (p 253)

In other words, suppose there is a large cotton producing area, based at A. It sells its goods to a series of nearby small towns, B – E. But, a railway is built from A to a large city M. Now, its goods can be sent quickly and cheaply to a much bigger market. By the same token, B-E may have produced foodstuffs and other products sold to A. But, now, the railway means that producers of goods are encouraged to set up in M, and sell their goods to A. This is why, if HS2 were it to go ahead, would benefit London far more than any other city or area.

In addition, and especially as transport and communications improve, the cost per mile is less over longer than shorter distances. That has found its most advanced form in the Internet. It costs, essentially, no more to download a song, film, game, piece of software etc. produced in California, to a computer in Sydney, than it does to one in Los Angeles.

The Internet also demonstrates how improvements in transport and communications increase the rate of turnover without any changes in production time. The Internet means that, even with the production time remaining the same, the selling time is reduced to near zero.

The improvements in transport and communication also have other effects. For example, with regular shipments made possible as multiple ships follow each other across the ocean, just as multiple trains follow each other from city to city, a regular supply of goods can be fed into markets, thereby removing the need to hold large stocks. In part, its such improvements that have made “*Just In Time*” systems possible, which in themselves increase the rate of turnover of capital, by reducing the time of circulation.

Alongside the development of faster forms of transport, and more regular transport, also comes greater capacity of transport. Ships become bigger, trains become longer, and able to haul more weight and so on. The Internet has followed exactly the same course. The same has also happened with mobile communication.

“Hence the return of capital likewise is distributed over shorter successive periods of time, so that a part is continually transformed into money-capital, while the other circulates as commodity-capital. By spreading the return over several successive periods the total time of circulation and hence also the turnover are abridged. The first to increase is the frequency with which the means of transportation function, for instance the number of railway trains, as existing places of production produce more, become greater centres of production. The development tends in the direction of the already existing market, that is to say, towards the great centres of production and population, towards ports of exports, etc. On the other hand these particularly great traffic facilities and the resultant acceleration of the capital turnover (since it is conditional on the time of circulation) give rise to quicker concentration of both the centres of production and the markets. Along with this concentration of masses of men and capital thus accelerated at certain points, there is the concentration of these masses of capital in the hands of a few.” (p 254)

At the same time, the changes noted previously occur as some centres of production develop as a result of new transport facilities, whilst others decline. A similar thing can be seen today with those companies that have been able to develop an on-line presence and those that have not. Business models based on town centre retailing have declined as e-tailing has risen.

“All branches of production which by the nature of their product are dependent mainly on local consumption, such as breweries, are therefore developed to the greatest extent in the principal centres of population. The more rapid turnover of capital compensates here in part for the circumstance that a number of conditions of production, building lots, etc., are more expensive.” (p 255)

But, the development of transport also exerts a dialectical influence. The more transport develops, the more each firm is led to seek to expand its market ever further afield. In other words, at the same time that this development reduces the time of circulation it also lengthens it! The more firms seek to ship their goods not just to local markets, but to markets all over the globe, the more absolutely, and relatively, of their capital is tied up in the form of commodity-capital, in the process of being shipped and sold in those markets. Alongside this creation of a world market also goes the increasing amount of capital required for transport, and all the attendant provision of ports, stations etc.

As well as the selling time, the extent of transit time for commodities also affects the buying time. That is the time required to obtain the money, and be able to use it to replace the

productive-capital. Just how much the Internet, and modern financial services have speeded up this process, and thereby raised the rate of turnover, and consequently rate of profit, can be judged by the example Marx gives.

“Suppose a commodity is shipped to India. This requires, say, four months. Let us assume that the selling time is equal to zero, i.e., the commodities are made to order and are paid for on delivery to the agent of the producer. The return of the money (no matter in what form) requires another four months. Thus it takes altogether eight months before a capital can again function as productive capital, renew the same operation. The differences in the turnover thus occasioned form one of the material bases of the various terms of credit, just as overseas commerce in general, for instance in Venice and Genoa, is one of the sources of the credit system, properly speaking.” (p 255-6)

If we assume that the production time of these goods was one month, that is a total turnover time of nine months, or put another way, the capital turns over 1.33 times a year. Without any change in the production time, this same commodity if it were sold over the Internet, could today, with modern payment systems, developed by the financial services industry, have a circulation time approaching zero. Instead of the capital turning over 1.33 times a year, it would turn over 12 times a year. The consequence of that on the rate of profit is dramatic. The rate of profit is calculated as $s.n/(c+v)$. If $s = 1000$ and $(c+v) = 10,000$, then it would originally have been $1000 \times 1.33/10,000 = 13.33\%$. However, it becomes $1000 \times 12/10,000 = 120\%$!

According to a *World Bank Report*, using data from the *McKinsey Report*, the productivity in 1965 of dock labour (prior to containerisation) was 1.7 tons per hour. Post containerisation, in 1970, that had risen to 30 tons per hour. The average ship size went from 8.4 GRT to 19.4 GRT, insurance costs fell from £0.24 to £0.04, and capital tied up in transit halved from £2 per ton to £1 per ton. Today, 90% of goods are transported by container, in an integrated road, rail and sea system. As the report suggests, the reduction in cost, and increase in speed, has also had a significant effect in stimulating the circulation of commodity-capital in the process.

Marx notes that, alongside this, a further problem is that the longer the selling time, the greater the risk of prices changing in the intervening period. It is not just credit that develops to deal with this situation. The financial services industry developed to provide other solutions to this problem, e.g. the development of futures markets, whereby sellers could enter into contracts to sell a given quantity of a commodity at some future date, at a given price. Likewise, buyers enter into similar contracts to buy. Alternatively, they may take on futures options, whereby they pay a premium to have the option to buy or sell a given commodity at a particular date, but do not have to exercise that option, if prices have changed adversely.

The turnover time can also be increased as a consequence of capitalist development, on an ever larger scale. For example, if a buyer only wants a few metres of linen this might be produced in a day, sold to them, and the productive-capital reproduced shortly after. However, if as a result of capitalist development, a large merchant requires 10,000 metres of linen, then, even with the greater productivity, this might require two weeks to produce and ship to them. Payment will only be made when the full shipment is received. The development of neo-fordist production systems, such as flexible specialisation can be a way around this problem, because they use new technology to obtain the benefits of Fordist mass production, with the advantages of flexibility provided by small batch production.

A portion of the advanced capital must always be in the form of money-capital because it can never go immediately from being received as payment to being paid out for the purchase of productive-capital. Its like a lake. It always has a certain amount of water in it, but its not all the same water. Water flows into it constantly, but water also constantly flows out. Firms have to retain money-capital as bank deposits and petty cash because, although money constantly flows in, it also constantly flows out.

Moreover, because the ratio at which money flows in, and flows out, is not constant, firms have to hold money to make up the difference. They create cash flow forecasts to predict when more money will flow in than flow out, so that balances can be run down, and vice versa, so that they can be increased.

Similarly, as seen previously, where supply is not regular or reliable, or where it takes a long time to secure, because, for example, of long transit times, a large stock must be bought, which means that capital is tied up in the stock, which is only a potential productive capital.

Marx quotes another similar example.

“In London for example great auction sales of wool take place every three months, and the wool market is controlled by them. The cotton market on the other hand is on the whole restocked continuously, if not uniformly, from harvest to harvest. Such periods determine the principal dates when these raw materials are bought. Their effect is particularly great on speculative purchases necessitating advances for longer or shorter periods for these elements of production, just as the nature of the produced commodities acts on the speculative, intentional withholding of a product for a longer or shorter term in the form of potential commodity-capital.” (p 258)

Again, more developed capital markets can help smooth out such problems. Speculators can be allowed to gamble on future prices, but actual buyers of those commodities can thereby enter into contracts to purchase the amounts of these commodities they need on a month by month basis, at a price certain, rather than having to lay out a large amount of capital at one time to secure a supply at a given price.

Those producers, with sufficient capital, can withhold their commodities from the market when prices are low, in the hope of higher prices later. This is not profitable, however, where the costs of storage are high, where the commodity may deteriorate, or where, as with livestock, it has to be fed etc.

Again, although futures markets have been criticised for supposedly causing higher prices by withholding (cornering) the market for particular products, its unlikely that this is the case. If speculators buy up a particular commodity and hoard it, rather than immediately selling it at the due date, it is normally because they expect actual market prices to rise in the future. By pushing up the future price, they actually thereby encourage producers now to increase their production, so reducing the potential future shortage, and spike in prices. Moreover, if speculators sit on commodities they have bought, pushing up current spot prices, that is only likely to encourage producers themselves to unload their current production directly on to the market, to take advantage of those higher prices. Spot prices would then fall, and the speculators lose money. With stocks having been reduced, speculators might also find they then faced higher future prices to replace their current supplies. The example of what happened to the Hunt Brothers on *Silver Thursday* demonstrates the dangers for such speculators.

Chapter 15 - Effect of the Time of Turnover on the Magnitude of Advanced Capital

The effect of different rates of turnover of capital has been touched upon previously. In the next two chapters, Marx goes into the effects in more detail. The consequences of changes in the rate of turnover is often ignored by economists. That is a big mistake, as Marx demonstrates. It is especially a mistake, today, when rapid technological, and methodological, changes bring about significant reductions in both the time of production and time of circulation.

Marx begins with an example that includes several simplifying assumptions. So, he takes a commodity where the wear and tear of fixed capital is excluded, and where also surplus value is excluded. In other words, the value of the commodity is made up entirely of circulating capital. That is a certain amount of constant capital, in the form of raw and auxiliary materials, and a certain amount of variable capital, i.e. labour-power.

The time of production is nine weeks, and each week £100 is consumed in constant and variable capital. So, the value of the commodity is £900. It doesn't matter whether this is a single commodity, such as a carriage, or whether it is a batch of some identical commodities, e.g. 10,000 metres of linen, provided it is sold in one bundle.

But, in addition to the production time, this commodity also requires three weeks time of circulation. It doesn't matter whether this is because that is how long it takes to sell, on average, or because it is the transit time, or because it is the time to receive payment. What does matter is that it requires this additional three weeks before money is available from the sale to be used to buy replacement productive-capital. So, the total turnover time is 12 weeks. The capital required to ensure continuous production, therefore, is not £900, but £1,200. Marx examines other alternatives.

Firstly, at the end of nine weeks, production could cease for three weeks, until payment was made and replacement productive capital bought. But, capitalist production is based on continuous production. Money laid out, on fixed capital, would lie fallow during this period, if production was not occurring, and it would be depreciating in value.

Alternatively, the firm could spread its £900 capital over the twelve weeks, spending £75 a week, instead of £100. But, this reduction, in the scale of production, may not be possible. Firstly, using existing fixed capital for a shorter period of the day, or less intensively, is not really any different from it lying idle for three weeks. It will still be depreciating in value, because that is a function of time not use. But, its productivity will fall because it will produce a smaller output in a given time. Secondly, it may simply be too inefficient to use the fixed capital on such a reduced basis. Finally, it may not be possible to get round this by reducing the fixed capital. In *Volume I*, it was demonstrated that a minimum size of business is established, for each industry, below which production cannot be efficiently undertaken. The more capital develops, the larger that minimum size of business becomes.

Marx also excluded, for the purpose of this simplifying example, other extraneous circumstances. For example, if raw material prices rise, after the commodity has been sent to market, its value will not reflect that, and its sale will not make possible the reproduction of the productive-capital. So, less material and labour-power would then be bought.

Similarly, if markets are overstocked, market prices will fall below exchange values/prices of production, and so the productive-capital will not be reproduced. By contrast, in a boom,

market prices may rise above exchange value/price of production, and so there will be a surfeit of circulating capital that will be used to cover employment of additional workers, over-time, purchase of additional materials, employment of spare fixed capital and so on.

For simplicity, Marx assumes that production and circulation proceed on a regular and uniform basis.

It can be seen that, whether the scale of operation is reduced, or else the capital is increased, to allow continuous production, on the same scale, both are determined by the ratio of the circulation time to the production time. £900 of capital used to cover 12 weeks instead of 9, has to be reduced from £100 a week to £75 a week, a 25% reduction, just as the 3 weeks circulation time is 25% of the total turnover time.

If instead, the £900 capital is increased to £1,200, a £300 increase, that is 25% of the total capital. Put another way, it is a third of the original capital, just as the circulation time, is a third of the production time.

At the end of 9 weeks, £900 of productive-capital has become £900 of commodity-capital, but cannot be used to replace productive-capital for another three weeks. So, an additional capital of £300 is employed as productive-capital to ensure continuous production on the same scale.

Its clear that the 9 week working period, and the 12 week turnover time do not coincide, so that when money from the sale of commodities from the first working period, is received, the second working period will already be 3 weeks old. So, of the £900 received, only £600 will be required to complete the second working period. This will leave £300, which can buy productive-capital to cover the first 3 weeks of the third working period, and so on.

Marx gets a bit muddled up here. For example, he writes,

“Third period of turnover. At the close of the 9th week of the second period of turnover there is a new reflux of £900. But the third working period has already commenced in the 7th week of the previous period of turnover and 6 weeks have already elapsed. The third working period, then, lasts only another 3 weeks. Hence only £300 of the returned £900 enter into the productive process.” (p 264)

In fact, its clear that, at the end of each turnover period, £600 is required to finance the the last two-thirds of the previous turnover, leaving a third to finance the first third of the next turnover. The table below, I think gives the correct illustration of the flow of funds, of how each working period is financed.

Marx takes the turnover period (9 weeks production time + 3 weeks circulation time) and, therefore, establishes the turnover periods in weeks 12, 24, 36, 48. For example, he writes,

“At the close of the 6th. week of the second period of turnover the second working period is up.” (p 264)

That is week, 18. But, in fact, because the working periods and circulation periods overlap, the turnover period for the additional capital starts in week 10, when the second working period begins, not in week 13. The capital expended in the second working period is returned in week 21 not week 24. Put another way, in turnover period 1 (weeks 1 -12) only 75% of the capital laid out is turned over (900/1200). This is made clearer in the next example that Marx gives.

In this example, the production time, and the circulation time, are both 5 weeks (p 265).

Here, it is clear that the turnover period overlaps, because the capital is returned at the end of each 5 week production period, not 10 week turnover period. However, what is returned on each occasion is only 50% of the total capital laid out (500/1000), just as in the previous example, on each occasion 75% of the total capital laid out was returned.

Assuming a 50 week year, on the basis of the example above, the capital would turn over ten times, if there were no circulation time, i.e. at the end of 5 weeks, the product would be sold, and used to replace the productive-capital. The total value of the product would also equal in a year £5,000 (£500 x 10). However, the capital advanced is not £500, but £1,000, because £500 has to cover the circulation period. Dividing the value of the output by this advanced capital - £1,000 – then gives us the number of times it has been turned over during the year, which equal five. That is because the turnover-time is ten weeks, not five. It is equal to the working period plus the circulation time.

That is the case, because, in each payment above, only half the advanced capital is returned. It is as though, each payment, were only half a turnover, just as in the first example, each payment was just 75% of a turnover. It appears as a full turnover, because all the capital advanced for the actual working period preceding it, is returned.

So, in the above, £500 is laid out in each working period, and when payment is made in week 10, 15, 20 and so on, it is £500. Similarly, in the first example, £900 was advanced in each working period, and when payment was received in week 12, 21, 30, and 39, it was also £900.

So, if we were to look at things from the standpoint of the actual turnover periods, based on the production time plus the circulation time, we would have, in each of these periods, except the first, a return of the whole capital advanced, i.e. £1,200 for example 1, and £1,000 for example 2. Put another way, for example 1, in each of these turnover periods, we would have 1 1/3 times the capital advanced in the working period returned, and in example 2, we would have double the capital advanced in each working period returned.

If we assumed a 48 week year, for example 1, that would give us 4 turnovers per year. So, the total value of capital laid out would equal 4 x £1,200 = £4,800. Looking at the value of the output, it equals £100 per week, so £100 per week x 48 weeks = £4,800.

“In our table, in which we have assumed a circulation time of 5 weeks, the total value of the commodities produced per year would also be £5,000, but one-tenth of this, or £500, would always be in the form of commodity-capital, and would not return until after 5 weeks. At the end of the year the product of the tenth working period (the 46th to the 50th working week) would have completed its time of turnover only by half, and its time of circulation would fall within the first five weeks of the next year.” (p 265)

Marx then gives a third example, where the working period is 6 weeks and the circulation period 3 weeks. £100 is advanced each week. We would then have.

With a 9 week turnover period, this gives 6 turnovers in the 54 weeks. In each turnover period, except the first, £900 is returned = output of 1.5 working periods.

Put another way,

“In other words during 9 working periods (54 weeks) a total of 600 times 9 or £5,400 worth of commodities are produced. At the end of the ninth working period the capitalist has £300

in money and £600 in commodities which have not yet completed their term of circulation.”
(p 266)

Its only in example 2 that the original capital, for working period 1, plus the second capital, advanced for working period 2, coincide with the capital returned at the end of the turnover period, and that is because the same period of time was set for the working period and the circulation time. In all other cases, they will overlap so that a portion will be returned to finance some of the next working period, leaving an amount left over, equal to the additional capital, to finance part of the following working period.

“The capital operating during the circulation time of the commodity-capital is not identical, in this case, with the capital II originally advanced for this purpose, but it is of the same value and forms the same aliquot part of the total capital advanced.” (p 266)

The capital advanced as productive-capital lies idle, as commodity-capital, during the circulation period. So, in example 2,

“Therefore the entire time during which capital I lies idle here amounts to one half of the year. It is the additional capital II that appears during this time having, in the case before us, also in its turn lain idle half a year. But the additional capital required to ensure the continuity of production during the time of circulation is not determined by the aggregated amount, or sum total, of the times of circulation during the year, but only by the ratio of the time of circulation to the period of turnover.” (p 266-7)

For instance, in example 1, it was equal to 25%, and, in example 3, a third. In example 1, 25% of total capital was required as additional capital, and, in example 3 a third of total capital required as additional capital.

The examples given do not deal with situations where the time of production is greater than the working period, for example, wine production. The additional capital cited is only to fill in the duration of the circulation time. During the production time, in excess of the working period, no additional capital is required or means of production and labour-power. Marx says,

“Interruptions arising from the specific conditions of production are to be eliminated in another way, which need not be discussed at this point.” (p 267)

But, for example, a farmer lays out capital for seed and labour-power to sow it. In the following few months of production time, while it is growing, they do not need to lay out additional capital, for seed and labour-power, as was the case in the previous examples. In such circumstances, however, the farmer may lay out capital for other means of production and labour-power for the production of other commodities.

Of the productive-capital advanced, over the working period, some will be constant capital and some variable capital, but the proportions of each, physically available, will vary over the period. For example, the workers will not be paid wholly in arrears. If they are paid weekly, in arrears, money-capital for nine weeks will have to be on hand so that it is paid out each week. This does not change the total amount advanced over the nine weeks.

Similarly, raw materials will have to be available from the beginning. Depending on conditions, the whole nine week supply may need to be bought in advance, even though only a portion is advanced in production, each week. Or, a portion may be bought say every three weeks. Again, this does not change the actual amount advanced over the nine weeks.

“The additional capital is divided exactly like the original. But it is distinguished from capital I by the fact that (apart from credit relations) in order to be available for its own working period it must be advanced during the entire duration of the first working period of capital I, into which it does not enter. During this time it can already be converted, at least in part, into constant circulating capital, having been advanced for the entire period of turnover.” (p 268)

In other words, if the working period is nine weeks and the turnover period is 12 weeks, the three weeks additional capital will be required from the start, even though its only needed from week 10. Because material will already need to be on hand for week 10, it may be used, alongside the original capital, to buy material in week 1, especially where an advantage is obtained from buying a larger quantity, or in order to save on transport costs.

“If social capital is viewed in its entirety, a more or less considerable part of this additional capital will always be for a rather long time in the state of money-capital. But as for that portion of capital II which is to be advanced for wages, it is always converted only gradually into labour-power, as small working periods expire and are paid for. This portion of capital II, then, is available in the form of money-capital during the entire working period, until by its conversion into labour-power it take part in the function of productive capital.” (p 268)

The longer the circulation time as a proportion of the total turnover time, the greater proportion of capital must be held as money-capital.

“The same thing also takes place — as far as it concerns both the advance in the form of a productive supply and in that of a money-supply — when the separation of capital into two parts made necessary by the time of circulation, namely into capital for the first working period and replacement capital for the time of circulation, is not caused by the increase of the capital laid out but by a decrease of the scale of production. The amount of capital tied up in the money-form grows here still more in relation to the scale of production.” (p 268-9)

The additional capital ensures that working periods are continuous, so that an equal portion of the advanced capital is always engaged productively. In the second example, £500, or 50%, of the total advanced capital, is continuously employed productively, i.e. over each five week period. It produces then $10 \times £500 = £5,000$ in the year.

“But if the capital of £500 were regularly interrupted in its productive activity by a 5-week circulation time, so that it would again become capable of production only after the close of the entire 10-week turnover period, we should have 5 turnovers of ten weeks each in the 50 weeks of the year. These would comprise five 5-week periods of production, or a sum of 25 productive weeks with a total product worth 5 times £500 or £2,500, and five 5-week periods of circulation, or a total circulation time of likewise 25 weeks. If we say in this case that the capital of £500 has been turned over 5 times in the year, it will be clear and obvious that during half of each period of turnover this capital of £500 did not function at all as a production capital and that, all in all, it performed its functions only during one half of the year, but did not function at all during the other half.” (p 269)

But, as illustrated previously, it is not £500 that is the advanced capital, but £1,000 - £500 original capital, and £500 additional capital, to cover the circulation period, so that production is continuous.

“In our illustration the replacement capital of £500 appears on the scene during those five periods of circulation and the turnover is thus expanded from £2,500 to £5,000. But now the advanced capital is £1,000 instead of £500. 5,000 divided by 1,000 is 5. Hence, there are five turnovers instead of ten. And that is just the way people figure. But when it is said

that the capital of £1,000 has been turned over five times during the year, the recollection of the time of circulation disappears from the hollow skulls of the capitalists and a confused idea is formed that this capital has served continuously in the production process during the five successive turnovers. But if we say that the capital of £1,000 has been turned over five times this includes both the time of circulation and the time of production. Indeed, if £1,000 had really been continuously active in the process of production, the product would, according to our assumptions, have to be £10,000 instead of £5,000. But in order to have £1,000 continuously in the process of production, £2,000 would have to be advanced. The economists, who as a general rule have nothing clear to say in reference to the mechanism of the turnover, always overlook this main point, to wit, that only a part of the industrial capital can actually be engaged in the process of production if production is to proceed uninterruptedly. While one part is in the period of production, another must always be in the period of circulation. Or in other words, one part can perform the function of productive capital only on condition that another part is withdrawn from production proper in the form of commodity- or money-capital. In overlooking this, the significance and role of money-capital is entirely ignored.” (p 269-70)

I. The Working Period Equal to the Circulation Period

This occurs, in reality, only as an exception. Marx says, its a good starting point, because it illustrates relations in the simplest way. It allows us to present the original and the additional capital, as though they are two completely separate capitals, like two separate firms. Capital 1 operates in the first working period, and then lies fallow, whilst it circulates, and Capital 2 operates in the second working period, then lying fallow, in circulation, whilst Capital 1 is in the next working period. So, there is never any overlap between the two.

“With the exception of the first period, either of the two capitals is therefore advanced only for its own period of turnover.” (p 270-1)

Marx sets out the relations for such a situation in a series of tables, which I will come to later. However, he assumes a turnover period of 9 weeks, meaning a working period of 4.5 weeks, and the same for the circulation period. This seems to me to be unnecessarily complicated, so before detailing that, let me try to set out the basic principles instead using a turnover period of 4 weeks, 2 weeks for the working period, 2 weeks for circulation.

Marx sets out two basic laws, which these examples are intended to demonstrate.

“1) the number of working periods of the total capital advanced is equal to the sum of the value of the annual product of both advanced portions of capital divided by the total capital advanced, and 2) the number of turnovers made by the total capital is equal to the sum of the two amounts turned over divided by the sum of the two advanced capitals. Here too we must consider both portions of capital as if they performed turnover movements entirely independent of each other.” (p 274-5)

So, in a 52 week year, Capital 1, will have working periods in weeks, 1-2, 5-6, 9-10,...49-50. Amounting to 13 working periods. Capital 2 will have working periods in weeks 3-4, 7-8, 11-12, ... 51-52. Again amounting to 13 working periods. Looking at Marx's two propositions above, the total capital advanced by Capital 1, if we assume £100 per week is advanced, amounts to £200 in each working period. It advances no capital in the circulation periods, weeks 3-4, and so on. The same is true for Capital 2.

So, Capital 1 lays out £2,600 in a year, and Capital 2 lays out the same amount. A total of £5,200 is laid out in a year, and because we have assumed no surplus value, this is also the value of the output. If we divide the value of this total output, by the total advanced by

both capitals we get the number of working periods. Both Capital 1 and 2 advance £200 each = £400. $\text{£5,200} / \text{£400} = 13$, which, in fact, we already know to be the number of working periods. This is tautologically true in this instance because of the assumptions that have been made, but the further examples will demonstrate it is true when other assumptions are made.

If we look now at the second proposition, in relation to turnover, we know that the turnover period is 4 weeks – 2 weeks working period and 2 weeks circulation time. Capital 1, turns over in weeks 4,8,12,...52. In other words 13 complete turnovers. However, Capital 2 turns over in weeks 6,10, 14,...54. But, week 54 is in the following year. So, Capital 2 only completes 12 turnovers. At week 52, it has completed its working period, and the capital has become commodity-capital, in circulation. But, at this point, it is only half way through its 13th turnover. It has turned over 12.5 times.

The total amount turned over by Capital 1 is $13 \times \text{£200} = \text{£2,600}$. The amount turned over by Capital 2 is 12.5 times $\text{£200} = \text{£2,500}$. The total amount turned over is then $\text{£2,600} + \text{£2,500} = \text{£5,100}$. Using proposition 2, we then have $\text{£5,100} / \text{£400}$ (the total advanced capital) = 12.75.

So, if we think of these two capitals as two firms constituting an industry, the capital of that industry would have turned over 12.75 times, and would have had 13 working periods. We can extend this principle to represent the total social capital. The reason this is important, is because of what has been said previously about the influence of the rate of turnover on the rate of profit, which, in turn, influences the rate of capital accumulation, i.e. the pace of growth.

But, similarly, looking at things from the perspective of the number of working periods is also important, because it is only during the working period, i.e. production, that surplus value is created. The more working periods, the more frequently surplus value is produced. The surplus value is only realised in the circulation period.

The circulation period is also important for another reason. In reality, if we look at Capital 1 and 2, not as two separate capitals, but as Capital 2, being an additional capital to Capital 1, that allows production to be continuous, we see another feature. Now, capital is returned not every 4 weeks, but every two weeks, apart from the first working period. Capital 1, sells its output in week 4, bringing in £200. But, Capital 2, sells its output in week 6, bringing in another £200. From that point, capital returns every 2 weeks. Moreover, if we take any 4 week period, after week 4, we will see that £400, or the whole advanced capital, is returned – turned over. In short, after the first turnover period is up, capital is returned at periods equal in length not to the turnover period, but the working period. The further examples will show this is the case not just where the working period and circulation period are equal in length.

Having set Marx's example out on this simpler basis, let's apply this to Marx's actual example.

In 51 weeks (taken as the year), Capital 1 goes through 6 working periods, ending in week 49.5. It advances £100 per week = £450 in a 4.5 week working period. So, its output in a year equals $6 \times \text{£450} = \text{£2,700}$. Note, it does not produce even a portion of output in weeks 49.5 – 51, because this is its circulation period, where we are assuming that the capital lies fallow. Similarly, it does not advance any capital during that period.

Capital 2, goes through $5\frac{1}{2}$ working periods. That is its last working period begins in week 49.5, and ends in week 54. At week 51, it has gone through 1.5 weeks of a 4.5 week

working period, i.e. $\frac{1}{3}$ of a working period. So, its output in the year equals $5\frac{1}{3} \times £450 = £2,400$. In total, £5,100 of output is produced.

The aggregate capital advanced by Capital 1 and 2 is £450 (Capital 1) and £450 (Capital 2) = £900. Using the propositions previously set out, then, we have the number of working periods. That is $£5,100/£900 = 5\frac{2}{3}$.

“Hence the total advanced capital of £900 has functioned $5\frac{2}{3}$ times throughout the year as productive capital. It is immaterial for the production of the surplus-value whether there are always £450 in the production process and always £450 in the circulation process, or whether £900 function $4\frac{1}{2}$ weeks in the process of production and the following $4\frac{1}{2}$ weeks in the process of circulation.” (p 273)

We can then look at how things stand from the perspective of the turnover of the advanced capital.

Looking at the capital returned it is less than the value of the output produced, for the simple reason that the turnover period extends beyond the working period. So, Capital 1 receives a return of capital in weeks 9,18,27 etc., and Capital 2 receives a return of capital in weeks, 13.5, 22.5 and so on. Capital 1 turns over $5\frac{2}{3}$ times in 51 weeks, because it only completes the sixth turnover in week 54. Capital 2 only turned over $5\frac{1}{6}$ times, because it only completes its sixth turnover in week 58.5.

So, the actual capital turned over is $5\frac{2}{3} \times £450 + 5\frac{1}{6} \times £450 = £2550 + £2,325 = £4,875$.
So, the aggregate capital turns over $4875/900 = 5\frac{5}{12}$ times.

This is mathematically always true, in the sense that, if we assume continuous capitalist production, and recognise that the working period and the circulation period form one whole of the circuit of capital, the capital in circulation is in whatever form proportionally through its period of turnover. Of course, the fact that this capital is part way through a period of turnover, does not mean that a proportion of it actually has been turned over, in the sense that it has returned in the form of money-capital, ready to be used again.

The output of a working period might be, for instance a machine, here with an exchange value of £900. But, the £900 is likely only to be actually returned in one lump sum. If the circulation period is 4.5 weeks, it is unlikely to be the case that in each of these weeks, the buyer of the machine will return £200 to the seller. Of course, that may happen, the seller might receive stage payments from the buyer of some big piece of equipment, or for a house etc.

On the other hand, although a working period might last for 4.5 weeks, that might only be in the sense that this is the amount of time required to process a given amount of material. That might be the case where commodities are produced to order; for example, a large wholesaler places orders for regular large quantities, or it might simply be that this is the period required for some historically determined optimum long production run. For example, car manufacturers used to have such long runs that made best use of the jigs and other machinery set up for producing particular models, rather than having to stop production to change the set up to produce some other model. But, it may also be the case that, where production is truly homogeneous, i.e. only one identical commodity is continuously produced, in huge quantities, the working period is merely a convenient mathematical abstraction of the time required to produce a given quantity of that commodity, which may or may not be related to the usual quantities shipped to the market.

Especially, in the latter case, therefore, where quantities are being continually sent to market, and payment received, it may well be the case that the capital returned represents a proportion of the advanced for a given working period. For example, a company may produce 10,000 ball bearings, or metres of linen per month, or a potbank might produce 10,000 cups per month. It may limit its output to this quantity, because it knows this is, on average, the amount it can sell in that time. But, all of that output is unlikely to be sold in one go. Buyers will place orders etc., throughout the month. So, although the circulation time might be 1 month, a proportion of the month's output will be being sold every day, so that a proportion of the capital will be continually being returned throughout the month.

So, the fact that Capital 1 is said to be $\frac{2}{3}$ of the way through a turnover, simply reflects the fact that the capital has been employed, produced value, and is not currently available for employment as productive capital, but will be after another 3 weeks.

Similarly, for Capital 2, which does not begin its turnover until week 4.5 (as may well be the case with different businesses that begin operating at different times), when it arrives at week 51, its capital will be in a number of different forms.

Its 6th working period starts at week 49.5. At the end of week 51, it is then $\frac{1}{3}$ of the way through its working period. So, $\frac{1}{3}$ of its capital will have been advanced for labour-power, and materials. Two-thirds will be in the form of money-capital, or materials waiting to be used in production.

“The same calculation of averages that we employed above for I and II suffices also here to bring down the turnover years of the various independent portions of the social capital to one uniform turnover year.” (p 274)

II. The Working Period Greater than the Period of Circulation

Here the working period and turnover period overlap. For example, if the working period is six weeks, and the turnover-time is nine weeks, the working period will be weeks, 1 - 6, 7 - 12, 13-18 and so on, whilst the turnover periods will be weeks 1 - 9, 10 - 18, 19 - 27 and so on. In order to make up the difference, additional Capital 2 has to be employed. So, we could treat these again as though they were two separate capitals. Capital 1 has a working period of 6 weeks, and then lies fallow for three weeks, when it circulates. During those three weeks, Capital 2 operates, but then itself lies fallow for the six weeks when Capital 1 is producing.

This is set out in the next tables that Marx provides.

But, as Marx says, this is, in reality, a false picture because, here, Capital 2 has no real separate existence from Capital 1. The working period is six weeks, but Capital 2 only has sufficient capital to operate for three weeks, on the basis of the scale of production assumed. Its period of circulation is listed as being for 6 weeks, even though it is only 3 weeks, the same as that for Capital 1. The additional 3 weeks, is actually time when it is forced to lie fallow, for lack of capital to advance.

This is the same situation as that described in the first example, at the beginning of the chapter. In reality, whilst the additional capital allows production to continue, during the circulation period, of Capital 1, it is not sufficient to continue production for the whole working period.

When Capital 1 completes its turnover, it realises sufficient value to enable the working period of Capital 2 to be completed, and leaves sufficient capital free to commence a new

working period. The capital free to do so, is equal to the size of Capital 2. That is the same as previously described here:

This demonstrates two of the propositions alluded to. Firstly, it demonstrates that capital is returned every 6 weeks, equal to the working period, not the turnover period, and secondly, that the amount of capital freed up, in each of these returns, is equal to the additional Capital 2, required to cover the circulation period – here £300.

£600 of Capital 1, is returned at the end of its turnover period – week 9. £300 of this supplements the £300 of Capital 2 that starts operation in week 7, so that production can continue for six weeks, up to the end of week 12. The other £300 is freed up, and starts the second working period of Capital 1, which begins in week 13. The £300 of Capital 1, that supplemented Capital 2, is returned alongside the £300 of Capital 2, when its turnover is completed at the end of week 15.

Consequently, £600 of capital is turned over every six weeks, after week 9, i.e. weeks 9, 15, 21, 27, 33, 39, 45, 51. That is 8 turnovers. But, at week 51, there is also the output of weeks 49 - 51. That is worth £300, but has completed only $\frac{1}{3}$ of its turnover. So, in 51 weeks, £4,900 has been turned over – $8 \times £600 = £4,800 + \frac{1}{3} \times £300 = £100 = £4,900$.

The aggregate capital is £900 (£600 Capital 1 plus £300 Capital 2), so the number of turnovers of the aggregate capital is $£4,900 / £900 = 5\frac{4}{9}$ times.

Looking at the total output it is £5,100, i.e. 51 weeks \times £100. The difference in this figure, and the value of the turned over capital – £200 – is equal to the output in weeks 49 - 51, which had not completed its turnover. Using the previous formula the number of working periods, amounts to $£5,100/£900 = 5\frac{2}{3}$.

Marx then shows that these rules apply where a different length of working period applies. He describes the case where the working period is 5 weeks, and the circulation period 4 weeks, and one where it is 7 weeks, and the circulation period 2 weeks.

In the first case, £400 of Capital 2, makes up weeks 6 - 9, when Capital 1 is circulating. At the end of week 9, £500 returns to Capital 1. Capital 2 only has sufficient capital to cover 4 weeks of a 5 week working period. So, £100 of the capital returned to Capital 1, goes to supplement Capital 2, to cover the fifth week. That leaves £400 free for Capital 1, to commence its own next working period. £400 continues to be set free every 5 weeks.

In the second case, £700 is advanced by Capital 1, and £200 by Capital 2.

“In that case the first period of turnover lasts from the 1st. to the 9th. week; its first working period from the 1st to the 7th week, with an advance of £700, its first circulation period from the 8th. to the 9th. week. End of the 9th. week, £700 flow back in money-form.

The second period of turnover, from the 8th. to the 16th. week, contains the second working period of the 8th. to the 14th. week. The requirements of the 8th. and 9th. weeks of this period are covered by capital II. End of the 9th. week, the above £700 return. Up to the close of this working period (10th.-14th. week), £500 of this sum are used up; £200 remain free for the next working period. The second circulation period lasts from the 15th. to the 16th. week. End of the 16th. week £700 return once more. From now on, the same thing is repeated in every working period. The need for capital during the first two weeks is covered by the £200 set free at the close of the preceding working period; at the close of

the second week £700 return; but only 5 weeks remain of the working period, so that it can consume only £500; therefore £200 always remain free for the next working period.

We find, then, that in the given case, where the working period has been assumed to be greater than the circulation period, a money-capital will at all events have been set free at the close of each working period, which is of the same magnitude as capital II advanced for the circulation period. In our three illustrations capital II was £300 in the first, £400 in the second, and £200 in third. Accordingly, the capital set free at the close of each working period was £300, £400 and £200 respectively.” (p 278-9)

III. The Working Period Smaller than the Circulation Period

Marx assumes a turnover time of 9 weeks. £100 of capital is laid out each week. The working period is 3 weeks, and circulation period 6 weeks. That means that now, 3 capitals rather than 2 are required, to ensure continuous production.

This is similar to the previous situation where there were two equal capitals, which did not overlap.

Marx sets this out in the following tables.

Because they do not overlap, none of these capitals has to make up the rest of a working period for any other, and so none has left over, freed capital, after having done so. Each of them can be traced to the end of the year as self-contained capitals.

Over 51 weeks the total output is $51 \times £100 = £5,100$. The capital advanced by the three capitals is $3 \times £300 = £900$. The number of working periods of the aggregate capital is then $5100/900 = 5\frac{2}{3}$.

The amount actually turned over by the three capitals is:

Capital 1 $5\frac{2}{3} \times £300 = £1,700$

Capital 2 $5\frac{1}{3} \times £300 = £1,600$

Capital 3 $5 \times £300 = £1,500$

Total $£900 \times 5\frac{1}{3} = £4,800$

Marx then details another example where the working period is 4 weeks and the circulation period 5 weeks. This breaks down again into three capitals; Capital 1 and 2 £400 each and Capital 3 £100.

These are detailed in the following tables.

I have extended them to a full year as opposed to the 3 turnovers that Marx sets out. I've also adjusted the labelling of week numbers to conform with Marx's previous method for consistency.

Once again, the total output is 51 weeks $\times £100 = £5,100$, and the aggregate capital is £900. That gives $5\frac{2}{3}$ working periods.

Looking at the capital turned over, that is

Capital 1 $£400 \times 5\frac{2}{3} = £2,266.67$

Capital 2 $\text{£}400 \times 5^2/9 = \text{£}2,088.89$

Capital 3 $\text{£}100 \times 4^7/9 = \text{£}477.78$

Total = $\text{£}900 \times 5.37 = \text{£}4,833.34$

Here, the three capitals do overlap. Capital 3 has no independent existence, because its £100 is not enough to cover a working period of 4 weeks. An amount of capital = £300 has to be added to Capital 3 to complete the working period. Having done so, it sets free £100 from Capital 1, equal to the value of Capital 3. That commences the next working period.

“In all cases investigated it was assumed that both the working period and the circulation period remain the same throughout the year in any of the businesses here examined. This assumption was necessary if we wished to ascertain the influence of the time of circulation on the turnover and advancement of capital. That in reality this assumption is not so unconditionally valid, and that it frequently is not valid at all does not alter the case in the least.” (p 282)

The capital analysed here was only the working capital, rather than the fixed capital, and for good reason. As discussed previously, a portion of fixed capital is transferred as wear and tear, to the end product, throughout the production process, and returned from circulation, as is that of the circulating capital. However, unlike the circulating capital, the fixed capital is not dependent upon the continual return. The circulating capital can only be reproduced when the capital is returned. But, fixed capital continues to function even as its value is reduced, and only needs to be reproduced when it is worn out.

*“The difference is merely this: In proportion to the varying length of a single **working period** of each period of turnover of the circulating capital, the fixed capital gives up a greater or smaller part of its original value to the product of that working period, and proportionally to the duration of the circulation time of each period of turnover this value-part of the fixed capital given up to the product returns quicker or slower in money-form. The nature of the subject we are discussing in this section — the turnover of the circulating portion of productive capital — derives from the very nature of this portion.” (p 282-3)*

IV. Conclusion

A) An aggregate capital can be divided into separate individual capitals that do not overlap in two cases, i) where the working period and circulation period are of the same duration, ii) where the circulation period is longer than the working period, but by a whole number multiple of it, so that an aggregate capital is divided into a number of equal sized capitals, i.e. if the working period is 2 weeks and the circulation period is $n \times 2$ weeks, then there will be $n + 1$ capitals of equal size. There is then no overlap of capitals, and no portion of any capital set free.

B) Where the working period is longer than the circulation period, or where the circulation period is longer than the working period, but not by a simple multiple of it, the aggregate capital cannot be divided into independent, equal sized capitals. Each capital's working period and turnover period overlaps with the others interlinking them. As a result, with each return, a portion of capital is set free, after the first turnover. The amount of capital set free is always equal to the size of the additional capital required to complete the turnover of the aggregate capital.

C) Looked at from the perspective of the aggregate social capital, the release of capital must be the rule, because equal working periods and circulation periods that are a simple

multiple of the working period must be rare exceptions.

“A very considerable portion of the social circulating capital, which is turned over several times a year, will therefore periodically exist in the form of released capital during the annual turnover cycle.” (p 284)

What does this mean, given that we know that, in reality, these different components of the aggregate capital are not divided into separate distinct capitals that only operate during their working period, and lie dormant during their circulation period? Because, the released capital is equal to the amount required to make up the difference in time between the working period/s and the turnover time, it means that a proportion of the aggregate capital must always be set free from being engaged in the production process itself.

“It is furthermore evident that, all other circumstances being equal, the magnitude of the released capital grows with the volume of the labour-process or with the scale of production, hence with the development of capitalist production in general. (p 284)

That is so, Marx says, for two reasons. One because the scale of production increases, and two because the circulation time increases. The first is invariably true.

“In the first case for instance we had to invest £100 per week. This required £600 for a working period of 6 weeks, £300 for a circulation period of 3 weeks, totalling £900. In that case £300 are released continually. On the other hand if £300 are invested weekly, we have £1,800 for the working period and £900 for the circulation period. Hence £900 for the circulation period. Hence £900 instead of £300 are periodically set free.” (p 284)

The second is not. The same processes that raise productivity in production, also raise it in circulation. Moreover, the introduction of other means, such as credit, to be discussed later, also reduce the period of circulation.

D) Viewed abstractly, it doesn't matter whether a capital of £900 works for 6 weeks, and then lies fallow for 3 weeks of the circulation period, or whether £600 of that capital works for 6 weeks, whilst the other £300 works for the other 3 weeks.

But, in practice it does. Capitalism is premised on continuous production. Stopping production after 6 weeks would mean fixed capital depreciated, for instance. Indeed, this is why capital dislikes any kind of stoppage, be it during a part of the day (e.g. overnight), week (weekend breaks), or year (holidays). It tries to avoid such stoppages via shift working, continental shifts and weekend working, and by staggered holidays.

“This continuity is itself a productive power of labour. “ (p 285)

A large part of the released capital, i.e. that required to make up the turnover time, will be in the form of money capital. That is naturally so, as it is held ready to buy labour power.

Assuming £100 is laid out per week, and a 6 week working period, and 3 week circulation time, at the end of week 9, £600 returns, only £300 of which is required to complete the second working period.

Marx says,

“At the end of the second working period, £300 are therefore released.” (p 285)

In a sense, this is wrong, because it is really half way through the second working period that it is released. At that point, it is already surplus to requirements, to complete the

working period. Once the second working period has ended, and the third is just starting, the £300 is already required for it. In fact, it may already have had to be used to purchase materials, so that it can begin seamlessly.

If, for whatever reason, production was to cease, at the end of a working period, there would be sufficient capital available to do so. The capital set free, in that case, does not have to wait until the end of the working period before it is employed.

As soon as the capital is returned, it could be used to establish some other form of business, or the capital could be used for some other form of investment.

“In what state are these £300? We shall assume that $\frac{1}{3}$ is invested for wages and $\frac{2}{3}$ are for raw and auxiliary materials. Then £200 of the returned £600 exist in the form of money for wages and £400 in the form of productive supply, in the form of elements of the constant circulating productive capital. But since only one half of this productive supply is required for the second half of the second working period, the other half exists for 3 weeks in the form of a surplus productive supply, i.e., of a supply exceeding the requirements of one working period. But the capitalist knows that he needs only one half, or £200, of this portion (£400) of the returned capital for the current working period. It will therefore depend on market conditions whether he will immediately reconvert these £200, in whole or in part, into a surplus productive supply, or keep them entirely or partially in the form of money-capital in anticipation of a more favourable market. On the other hand it goes without saying that the portion to be laid out for wages (£200) is retained in the form of money.” (p 285)

Labour-power cannot be hoarded, but only used when required, and the capitalist will not lay out money for wages in advance of that labour being performed.

“The capital released in the form of money-capital must therefore be at least equal to the variable portion of capital invested in wages. At a maximum, it may comprise the entire released capital. In reality it fluctuates constantly between this minimum and maximum.” (p 286)

Suppose the circulation period is shortened because prosperity means that goods are sold faster, and payments settled more quickly. If it falls from 3 weeks to 2, the £600 will be returned in week 8. But, the additional capital will have been operating from week 7, and still have enough left to last another week.

Moreover, when part of the £600 supplements it from the end of week 9, that together with the £300 will be returned in week 12. The result is that more capital is set free and finds its way into the money market.

“There are then, on the money-market £600 for one week and £300 for 4 instead of 3 weeks. As this concerns not one capitalist alone but many and occurs in various periods in different businesses, more available money-capital makes its appearance in the market. If this condition lasts for some time, production will be expanded wherever feasible. Capitalists operating on borrowed money will exercise less demand on the money-market, which eases it as much as increased supply; or finally the sums which have become superfluous for the mechanism are thrown definitely on the money-market.” (p 286)

The consequence is a fall in interest rates, and the opposite condition results in interest rates rising.

The fall in the turnover time, due to a reduction in circulation time, means a portion of capital becomes superfluous. The working period can continue anew with just £800 rather

than £900. The other £100 is then set free to enter the money market.

Marx distinguishes this plethora of capital from that which arises in the “*melancholy period*”, which follows the end of a crisis. In the latter, the rate of profit may rise, as the opening of a new cycle sees demand rise, whilst capital may be, at first, reluctant to invest, until it is sure that conditions really are improving.

By contrast, the reduction in the circulation time reduces the amount of capital that has to be advanced, irrespective of the scale of production or prices. The opposite is true where the circulation time increases. That means it takes longer for the advanced capital to return, and so additional capital has to be advanced, to ensure that production is continuous. Alternatively, the scale of production has to be cut back.

“This additional capital can be obtained only from the money-market. If the lengthening of the period of circulation applies to one or several big branches of business, it may exert pressure on the money-market, unless this effect is paralysed by some counter-effect. In this case it is likewise evident and obvious that this pressure, like that plethora before, had nothing whatever to do with a movement either of prices of the commodities or the mass of existing circulating medium.” (p 287)

At this point, Engels reminds us that *Volume II* has been put together by himself on the basis of the notebooks left by Marx, and that, therefore, unlike *Volume I*, it is not the complete and polished work of Marx. Engels points out that, although Marx was well grounded in algebra, and left numerous examples of commercial computations, these were not the same as the commercial arithmetic that Engels himself was familiar with, in his practical role as a businessman.

Marx had then, Engels says, got a bit muddled up and bogged down in some of these calculations, some of which had been left unfinished or else were wrong. Engels repeats the point I made earlier.

“No matter what may be the ratio between the working period and circulation time, hence between capital I and capital II, there is returned to the capitalist, in the form of money, after the end of the first turnover and thereafter at regular intervals equal to the duration of one working period, the capital required for one working period, i.e., a sum equal to capital I.

If the working period is 5 weeks, the circulation time 4 weeks, and capital I £500, then a sum of money equal to £500 returns each time at the end of the 9th, 14th, 19th, 24th, 29th week, etc.”(p 288)

However, I'm not sure I agree with Engels' dismissal of Marx's concern with the 'release' of money-capital, though I think Marx might have set out his ideas more clearly, had he lived long enough to set it out in a complete and polished manner.

The notion of 'released' money-capital does seem confused in the way it is presented, but I think that what Marx was trying to demonstrate was the way in which social capital, in the aggregate, has to produce a quantity of money-capital that is necessarily surplus to the requirements of production, and so is continually supplied into the money market, before being fed back out again into productive investment. I think that what Marx was doing was working towards a basis for understanding the movements of that money market, and of interest rates. It also seems central to his idea that a portion of this social capital is continually in the process of formation as new capitals, i.e. as capital invested in new lines of production.

Either way, as Engels points out,

“The essential point in the text is the proof that on the one hand a considerable portion of the industrial capital must always be available in the form of money and that on the other hand a still more considerable portion must temporarily assume the form of money.” (p 289)

V. The Effects of a Change of Prices

There are a number of ways in which a change of prices can have an effect, where there is no change in the working period or circulation period.

- i. A change in market price may reflect a change in the value of the commodity, or it may simply be the result of a change in demand and supply.
- ii. A change in the value of the commodity may be due to a change in the productivity in its production, or it may be a result of a change in the value of the constant capital used in its production.
- iii. It is necessary to distinguish between the effects of a change in prices on newly invested capital, and on reproduced capital.

Suppose that the value of constant capital and variable capital, used in the production of a commodity X is halved. Where, in the previous examples, a circulating capital of £100 per week had to be advanced, this now falls to £50. Assuming the same 9 week turnover period, a capital could now start business with only £450, whereas previously £900 was required.

The immediate consequence of this is that £450 of money-capital that was previously required, has been released. This £450 could be used to double the scale of operation, or it could be utilised in some other branch of production, or it could circulate within the money market, via which it may become productive-capital or else be used for speculative purposes, buying bonds, shares or other assets in the secondary markets. To the extent that this released money-capital circulates, it represents an increased supply of money-capital, putting downward pressure on interest rates.

If the scale of production remains the same, then the value of that production also falls in half. Consequently, at the end of the turnover period, in week 9, instead of £900 of capital being returned, only £450 is returned. But, this is now sufficient to purchase the necessary productive-capital at its lower price.

By contrast, if the price of the circulating capital rose by half instead of £100 per week, £150 per week of capital would be required. With the same turnover period, a capital of $9 \times £150 = £1,350$ rather than £900 is required for a capital to commence business. This money-capital has to be withdrawn from the money market, thereby bringing about an increase in the demand for money-capital and putting upward pressure on interest rates.

*“If all the capital available on this market were then already engaged, there would be increased competition for available capital. If a portion of it were unemployed, it would **pro tanto** be called into action.” (p 290)*

If the price/value of the commodities used to produce commodity X remain the same, it is still possible for the market price to rise or fall, however. That is because the market price is determined by supply and demand. A sudden increase in demand or fall in supply will push prices up and vice versa.

If the price of X falls, then the £600 of capital value, thrown into production, and now in the form of commodity-capital, may only return £500. £100 of the capital advanced, does not return.

“It is lost in that process. But since the value, or price, of the elements of production remains the same, this reflux of £500 suffices only to replace 5/6 of the capital of £600 constantly engaged in the process of production. It would therefore require an additional money-capital of £100 to continue production on the same scale.” (p 291)

If the producers of X believe that the fall in its price is only temporary, they may throw this additional capital into the process. If they think it reflects a more permanent change in sentiment, and reduction in demand, they may simply respond to the fall in the capital returned to them, by reducing the scale of their operation.

Instead of throwing £600 of capital into production, they may throw only £500. Output will fall by a sixth. The fall in supply will then raise the price of X to its former level, but less capital will now be used for its production, and less of it will be demanded or supplied. For example, if originally the £600 produced 600 units, selling at £1, now £500 will produce 500 units selling at £1. This is the way in which, under capitalism, the market acts as the mediating force that allocates available social labour-time, to the production of social needs, in accordance with the law of value.

The fall in market price of X represented a loss to its producers, but represented an equal gain to its buyers. The sellers sold it a sixth below its value, whereas the buyers bought it a sixth below its value. In consequence, whereas the sellers need to acquire additional capital, the buyers have capital released. If the buyers of X are workers, the fact they buy these wage goods below their value, may act to reduce the value of labour-power, thereby effecting a shift in favour of their employers.

By contrast, the market price of X might rise, due to a change in demand and supply. The £600 of capital laid out, producing 600 units, might now return £700. But, only £600 are required to reproduce the capital consumed in production. Now, when it is returned at the end of week 9, £100 is released. Depending upon whether producers believe this is permanent or not, they may use the released £100 to expand production, or alternatively it may simply be thrown into the money market.

However, just as a fall in its price meant a loss to the producer of X, that falls outside the production process, so the opposite here applies.

“One-seventh of this price, or £100, does not originate in the process of production, is not advanced in this process, but derives from the process of circulation.” (p 290)

But, again, this fact that it originates in circulation is itself reflected in the fact that what is a gain for the seller is an equal loss for the buyer. The buyer has to expend an additional £100, whereas the seller releases £100.

First case: Unchanged Scale of Production, Unchanged Prices of the Elements of Production and of Products, and a Change in the Period of Circulation and Thus of Turnover.

If the period of circulation falls from 3 weeks to 2 weeks, then the period of turnover falls from 9 weeks to 8 weeks. Previously, £900 was required to cover 9 weeks, now only £800 is required to cover 8 weeks. £100 of money-capital is released.

The working period remains 6 weeks, and similarly, in 51 weeks, the total output remains £5,100. The number of working periods necessarily rises, however, for this aggregate capital to $5100/800 = 6\frac{3}{8}$.

Although, the £100 released is in the form of money-capital, this does not mean that it is simply a reduction in the amount of the advanced capital that was originally in the money form. In other words, as previously described, a firm's capital is always divided into the three forms that make up the three circuits of capital. A certain proportion is in the form of money-capital, waiting to purchase means of production and labour-power, another portion is already in the form of productive capital, and the final portion is in the form of commodity-capital, waiting to be sold.

So, if the original £900 were divided into £300 money-capital, £300 productive-capital, and £300 commodity-capital, this reduction in the turnover time, releasing £100 of money-capital does not mean that these proportions are reduced to £200, £300 and £300 respectively. That is because a proportion of the capital released is in the form of productive-capital, and commodity-capital which then necessarily is held as money-capital.

Suppose we have the 9 week turnover described previously. £100 of capital is laid out weekly, over a 6 week working period. Let's assume of the £100, £80 is spent on means of production and £20 on wages. This division obviously applies also to the £300 of additional capital required during the 3 week circulation period. But, if the circulation period falls from 3 weeks to 2 weeks, whilst the working period and the scale of production remain constant, its clear that instead of £300 of additional capital being required, only £200 is required.

So, instead of £240 being laid out for means of production during this period, and £60 for wages, the figures are £160 and £40. But, at any point over the turnover period, a certain proportion of capital will be held in its three different forms.

The wages always have to be paid in money form. So, at the end of the turnover period, of the £600 received, there is £120 to cover wages for the next working period, which has to be held in the money-form, because the wages are not paid in advance.

By contrast, £480 of it could be used immediately to buy means of production, some of which is then engaged in production, and the rest forms a productive supply, waiting to be used. But, likewise, a proportion of this £480 could be retained as money-capital, only being used to buy means of production closer to when they are required.

However, as set out previously, because the circulation time has now fallen from 3 weeks to 2 weeks, the additional capital required for means of production has fallen by £80 from £240 to £160, and for wages by £20 from £60 to £40.

So, out of the £600 returned, the amount required for the next working period falls from £480 to £400 for means of production, and from £120 to £100 for wages. £400 of money-capital goes to buy means of production, whilst £100 remains in the money form to cover wages. The further £100 of money-capital is thereby released, and can go into the money market.

The tables below illustrate the situation described in Part 19. Its assumed that all the capital is present from Day 1, and that all the means of production required for the entire turnover period are bought in week 1.

At the start of week 1, £20 has been allocated for wages, and £720 has gone to buy all the means of production for 9 weeks. £160 of the £900 capital remains in the form of money-

capital to cover wages for the next 9 weeks. At the start of week 7, production has created £600 of output, which now exists as commodity-capital and has been sent into circulation. It remains as commodity-capital for the next 3 weeks until it is sold at the end of week 9. In the meantime, an additional £100 of commodity-capital is produced during each of those 3 weeks.

At the start of week 10, the £600 of commodity-capital sent into circulation is sold, and has been turned into money-capital, £480 of which has gone to buy means of production to cover the next 6 week working period, and £20 of which has gone to pay for labour-power for that week. At the start of week 10, the output of weeks 7 - 9, £300, exists as commodity-capital. Production continues through week 12, at which point the capital is turned over again.

That can be compared to where the turnover period is 8 weeks, as the circulation period is reduced to 2 weeks.

Here the amount held as money-capital falls by £20 in each week, compared with the previous situation, whilst the amount of commodity-capital reaches a maximum of £700 rather than £800. This reflects the fact that here wages have to be advanced for 1 week less. Moreover, the amount of means of production is also reduced by £80 in each week, for the same reason. Had it been the case that the means of production required only for the working period had been bought from Day 1, as was done at the start of the second turnover that would obviously have changed the amount of money capital held, as opposed to the amount of means of production for each week.

“Now only £800 are necessary to carry out the same productive process. The £100 thus released in money now form a new, employment-seeking money-capital, a new constituent part of the money-market. True, they have already previously been periodically in the form of released money-capital and of additional productive capital, but these latent states were themselves the requisites for the execution of the process of production, because they were the requisites for its continuity. Now they are no longer needed for that purpose and for this reason form new money-capital and a constituent part of the money-market, although they by no means form either an additional element of the available social money-supply (for they existed at the beginning of the business and were thrown by it into the circulation), or a newly accumulated hoard.” (p 292)

This last point is important. This is not additional capital that has been produced, which can only arise from additional surplus-value, but is merely additional capital available for use, i.e. the more efficient use of capital in one place means a bigger proportion of it is available for use elsewhere.

It doesn't matter whether the capital described in the foregoing example is the private property of some individual capitalist, or if it is capital borrowed from a bank etc. In the latter case, it simply means only £800, rather than £900, would be borrowed. The £100 not then borrowed would, in the same way, mean £100 of money-capital was available for other purposes.

Similarly, if the producer of X gets his materials on credit, from his supplier, he would only need to obtain £400 worth, rather than £480 worth. His supplier would be left with £80 worth of commodity-capital, but by the same token, this could be offered as credit to some other buyer. The producer of X would still have freed up £20 of money-capital because of their reduced need to advance wages for the additional week.

If this shortening of the circulation time means that the additional capital advanced results in less being held in the form of a productive supply, but production remains on the same scale, then it's clear that what must happen is that smaller amounts are bought more frequently. That is illustrated in the tables above. The same amount of material is consumed in a year, but if a smaller supply/stock of materials is maintained, this can only occur if it is replenished more frequently.

So, above, we see that the additional capital was reduced from £300 to £200, and that broke down into £160 for materials and £40 for wages, i.e. enough for 2 weeks rather than 3 weeks.

Marx gives an example of the purchase of cotton.

"The additional supply for production is now reduced by one-third. It consisted of £240 constituting four-fifths of £300, the additional capital II, but now it is only £160, i.e., additional supply for 2 instead of 3 weeks. It is now renewed every 2 weeks instead of every 3, but only for 2 instead of 3 weeks. The purchases, for instance in the cotton market, are thus more frequent and smaller. The same amount of cotton is withdrawn from the market, for the quantity of the product remains the same. But the withdrawals are distributed differently in time, extending over a longer period. Supposing that it is a question of 3 months or 2. If the annual consumption of cotton amounts to 1,200 bales, the sales in the first case will be:" (p 293)

"But in the second case:"

The contraction of the circulation time and the releasing of £100 of money-capital here is represented by the fact, on the one hand, of a saving of £80 for materials, and £20 for wages, and on the other hand, to a £100 increase in the commodity-capital of the cotton dealer.

"The longer this cotton lies in the latter's warehouse as a commodity, the less it lies in the storeroom of the manufacturer as a productive supply." (p 294)

We see here the theoretical basis for capital's introduction of "Just In Time". As well as the circulation period being shortened, by being able to sell faster, it could also be shortened by being able to buy faster. In other words, it may be the circulating periods of other capitals that supply the producer of X that are shortened.

"For instance if cotton, coal, etc., with the old methods of transport, are three weeks in transit from their place of production or storage to the place of production of capitalist X, then X's productive supply must last at least for three weeks, until the arrival of new supplies. So long as cotton and coal are in transit, they cannot serve as means of production. They are then rather a subject of labour for the transport industry and the capital employed in it; they are also commodity-capital in the process of circulation for the producer of coal or the dealer in cotton. Suppose improvements in transport reduce the transit to two weeks. Then the productive supply can be changed from a three-weekly into a fortnightly supply. This releases the additional advanced capital £80 set aside for this purpose and likewise the £20 for wages, because the turned-over capital of £600 returns one week sooner." (p 294)

If the working period of the materials suppliers is reduced, this also means that materials can be supplied more frequently, and so less needs to be held as a productive supply. By contrast, if the turnover period is prolonged, because of difficulties in obtaining supplies, additional capital has to be advanced.

In the end, this additional capital is capital that has to come from the money market. If it comes from the pocket of the producer of X, it is still capital he could have invested in other ways.

“To make it available, it must be pried loose from its old form. For instance stocks must be sold, deposits withdrawn, so that in this case too the money-market is indirectly affected. Or he must borrow it.” (p 295)

Marx goes on to say,

“But this is indispensable for the part which must be invested in materials of production only if he must pay for them in cash. If he can get them on credit, this does not have any direct influence on the money-market, because the additional capital is then advanced directly as a productive supply and not in the first instance as money-capital. But if the lender throws the bill of exchange received from X directly on the market, discounts it, etc., this would influence the money-market indirectly, through someone else. If, however, he uses this note to cover a debt not yet due for instance, this additional advanced capital does not affect the money-market either directly or indirectly.” (p 295)

This, I think is wrong. The supplier here is extending credit in the form of commodity-capital, but in so doing is increasing their own period of turnover. They are advancing an additional amount of commodity-capital for which they themselves have to advance additional capital to produce. They require additional money-capital so as to produce that extra output.

Second Case. A Change in the Price of Materials of Production, All Other Circumstances Remaining the Same.

Marx examines what happens if everything else is held constant, but the price of materials is halved.

Of the £900 advanced capital, $\frac{4}{5} = £720$, was previously spent on materials, and £180 on wages. If the price of materials falls by 50%, only £360 is required for 9 weeks, or £240 for the 6 week working period.

£180 is still required for wages, so the total capital advanced for 9 weeks, is £180 + £360 or £540. That means £360 of the original £900 capital is now released. If the business is not to be expanded, this released capital now becomes superfluous, and enters the money market, in search of some other venture to finance.

“If this fall in prices were not due to accidental circumstances (a particularly rich harvest, over-supply, etc.) but to an increase of productive power in the branch of production which furnishes the raw materials, then this money-capital would be an absolute addition to the money-market, and to the capital available in the form of money-capital in general, because it would no longer constitute an integral part of the capital already invested.” (p 295-6)

In other words, this money could only act as permanently released capital, if the fall in prices was itself permanent rather than a temporary fluctuation in market prices. If it were the latter, it would be likely to be cancelled out by a future variation in the opposite direction.

But, a fall in price, caused by a fall in value, is itself reflected in the fact that, as a consequence of the fall in the value of materials, goes a fall in the value of the end product.

Less money-capital is advanced to purchase materials, and a smaller corresponding amount is returned from the sale of the end product. Less capital circulates in this sphere (£360) and is spun off to elsewhere.

Third Case. A Change in the Market Price of the Product Itself.

It should be noted that this is a change in its market price not its value. A change in market price arises as a consequence of changes in its demand and supply. A change in its value arises from a change in the socially necessary labour time required for its production.

Suppose a commodity is produced by the average productivity, but, when it is brought to market, for some reason, for example, a change of fashion, demand for it has fallen sharply. Supply exceeds demand and prices fall. Technically, too much labour-time has been spent on its production, but this may be merely a temporary situation. If the product is ice cream, and this week is cold, demand next week, when there is a heatwave, could more than compensate for this week's low demand.

Either way, the fact that the commodity has to be sold at a market price below its exchange value represents a capital loss for the seller. In order to continue production, on the same scale, they will have to make it good with additional capital from their own pocket, or borrowing.

The loss to the seller may be a gain to the buyer. If the price of ice cream falls this week, because of bad weather, the producers and wholesalers may suffer a loss as prices fall. But, vendors who buy up these cheap supplies will benefit if they sell them next week during the height of a heat wave. That is a direct gain for the buyer. But, the buyer may gain,

*“Indirectly, if the change of prices is caused by a change of value reacting on the old product and if this product passes again, as an element of production, into another sphere of production and there releases capital **pro tanto**.” (p 296)*

In this case, the producer of X has sent it to market having expended say £80 in materials and £20 in wages on its production. In the meantime, the value of the materials falls to £70, which can now only be recovered in its price. It falls to £90. If X is used in the production of Y, the producers of Y gain indirectly, because £10 of capital, they previously advanced, has now been released.

But, the producer of X does not really suffer a loss here. The £90 they receive for X is enough to buy the replacement labour-power, and the materials at its new price of £70. They can continue production on the same scale.

The same is true in reverse if prices rise. A rise in market price not related to a change in value, provides a capital gain to the seller, and capital loss to the buyer. But, a higher price could also be due to a change in its value resulting from productivity changes arising after it was sent to market. If its linen, for example, and the price of cotton rises by 50% (say a £10 rise) then the price of linen will rise by £10 also, even though this £10 was never advanced for its production.

The seller of the linen appears to make a £10 gain, but in reality, they need this extra £10 in order to replace the cotton consumed in production. The value of the linen is based not on the money-capital advanced for its production, or the labour-time embodied in the productive capital it bought, but on the labour-time currently required to reproduce it. In fact, value is not intrinsic to a commodity; it is not somehow embodied, and fixed within it.

The commodity is only a shell, which, at any time, acts as a receptacle within which a given portion of society's available social labour-time is kept. Because the latter is constantly changing, the value residing in each commodity is constantly changing too.

“As we have assumed that the prices of the elements of the product were given before it was brought to market as commodity-capital, a real change of value might have caused the rise of prices since it acted retroactively, causing a subsequent rise in the price of, say, raw materials. In that event capitalist X would realise a gain on his product circulating as commodity-capital and on his available productive supply. This gain would give him an additional capital, which would now be needed for the continuation of his business with the new and higher prices of the elements of production.” (p 296)

It can be seen, from these examples, why interest rates have fallen over the last 30 years. Not only have huge rises in productivity brought about a massive rise in the rate and volume of profit, but the same causes have also reduced the value of constant and variable capital, bringing about the kind of “*freeing*” of money-capital into the money market described by Marx above. In addition, those same increases in productivity have brought about a significant reduction in both the working period and circulation period of capital, throwing even greater amounts of “*freed*” money-capital into money markets, continually pushing down the global rate of interest.

Chapter 16 - The Turnover of Variable Capital

I. The Annual Rate of Surplus Value

Assume we have a circulating capital of £2,500 - £2,000 constant capital and £500 variable capital. The working period is 4 weeks, and circulating period 1 week, giving a turnover period of 5 weeks.

£500 per week is laid out. Over 50 weeks that equals $50 \times £500 = £25,000$.

The total capital advanced = £2,500, so the number of turnovers is $25000/2500 = 10$. Both the variable capital and the circulating constant capital can only function when their entire value has been realised in the commodity, transformed into money and used to buy new materials and labour power.

It is this which distinguishes this circulating capital from the fixed capital. The fixed capital, transfers a portion of its value, as wear and tear, which, like the circulating capital, is circulated by the commodity. But, unlike the circulating capital, the fixed capital continues to function in the labour process, without the need for all of its value to be reproduced, and thrown back into it.

The value, circulated by the commodity, includes that created by the labour-power, that transferred from the materials and from the wear and tear of the fixed capital. The money-capital realised in its sale goes in different directions. A portion is hoarded to cover wages for the next working period; a portion may be laid out to buy materials, some of which then form a productive supply; and another portion may form a hoard built up to replace fixed capital when it is worn out.

In the previous chapter, Marx disregarded the fixed capital. In this chapter, he also disregards the circulating constant capital, to focus on the variable capital. That is reasonable because, although materials can form a productive supply, they are only actually advanced as productive capital, as part of the labour process itself. Consequently, in analysing the turnover of productive-capital, it is only that capital so advanced that can be considered, i.e. the circuit P...P. Here, the circulating constant capital is advanced, is processed, and is turned over coincidentally with the labour-power that processes it.

From the assumptions set out earlier, we have a total annual product of £25,000. The advanced capital turns over 10 times. The variable capital is £500, and so the amount of the annual product attributable to labour-power is $£500 \times 10 = £5,000$.

In establishing the principles for analysing the turnover of the capital, surplus value had also been left out of the equation. Now, Marx introduces it into the analysis.

With a 100% rate of surplus value, £100, or one week of labour-power, produces £100 of surplus value. In a working period of four weeks, £400 is produced, and in a fifty week year, £5,000 of labour-power produces £5,000 of surplus value.

But, its clear why the rate of turnover is important here. The firm has spent £5,000 on wages, in the year, but to achieve this, it only had to advance £500 of capital. The other £4,500 of wages paid during the year came not from an advance of capital, but merely from the capital advanced being returned in the sale of the commodity, and laid out once more to buy replacement labour-power. The firm did not need £5,000 of capital to start business, to cover wages, but only £500.

Yet, from the £500 of capital advanced, to buy labour-power, that labour-power has created £5,000 of surplus-value. In other words, the annual rate of surplus value is not 100% but 1000%!

“If we analyse this rate more closely, we find that it is equal to the rate of surplus-value produced by the advanced variable capital during one period of turnover, multiplied by the number of turnovers of the variable capital (which coincides with the number of turnovers of the entire circulating capital).” (p 299)

So, the annual rate of surplus value is $s \times n/v$, where v is the amount advanced for variable capital, s is the surplus value produced by it for the period advanced, and n is the number of times v is turned over in a year.

Similarly, the total amount of surplus value produced in a year, $S, = v \times (r/100)/ n$, where r is the rate of surplus value. For example, $£500 \times 100/100 \times 10 = £5,000$.

Marx labels this first variable capital A. He then assumes another variable capital, B, of £5,000. That is ten times that of A. This capital is expended at the rate of £100 per week to buy labour-power, just as with A. This labour-power is exploited at exactly the same rate as A. So, each week, the £100 advanced for labour-power, produces £100 of surplus value, as did A. The difference here is that the product of B can only be sold at the end of the year. Consequently, instead of the advanced capital being repeatedly returned, so as to be laid out again, this capital turns over just once during the year.

In order to keep producing during the year, and even though only the same amount of labour-power is employed and exploited, B has to be £5,000 as opposed to £500 for A.

In a year, B has produced exactly the same amount as A, £25,000. B has produced exactly the same amount of surplus value as A, £5,000. The capital laid out in wages, for B, is exactly the same as for A, £5,000, and for materials too, £20,000. Yet, the annual rate of surplus value for B is only a tenth that of A. $S \text{ } £5,000 \times n = 1/ v \text{ } £5,000 = 100\%$.

“This phenomenon creates the impression, at all events, that the rate of surplus-value depends not only on the quantity and intensity of exploitation of the labour-power set in motion by the variable capital, but besides on inexplicable influences arising from the process of circulation. And it has indeed been so interpreted, and has — if not in this its pure form, then at least in its more complicated and disguised form, that of the annual rate of profit — completely routed the Ricardian school since the beginning of the twenties.” (p 301)

But, the reason is obvious. A required an advance of capital of only £500 whereas B required an advance of capital ten times the size, of £5,000. If B had been advanced on the same basis as A, then the rate of surplus value would be the same. But, then we would have £5,000 advanced for 5 weeks = £1,000 per week = £50,000 per year. The surplus-value would be £50,000.

“Only the capital actually employed in the labour-power produces surplus-value and to it apply all laws relating to surplus-value, including therefore the law according to which the quantity of surplus-value, its rate being given, is determined by the relative magnitude of the variable capital.” (p 301)

Marx analyses the confusion of Ricardo and his disciples referred to, in *Theories of Surplus Value, Part 2*.

Ricardo tries to explain the divergence of prices from values, having already assumed an average rate of profit, by variations in the proportion of fixed capital, its durability and the effect of changes in wages.

The labour process is measured by time. A working day consists of a certain number of hours of abstract labour. A working period could be considered as a single working day of say 300 hours. It could be made up in a variety of ways. For example, if we are looking at purely abstract labour, it may be made up of thirty, ten hour days, divided into six, five day weeks, or five, six day weeks. Or it could be fifty, six hour days etc. Similarly, the labour-power employed may be complex rather than simple labour. If it is equal to two hours of abstract labour, this complex labour may actually work for six hours per day for only 25 days, yet this will amount to 300 hours of abstract labour.

Provided it is exploited at the same rate as other labour-power, this complex labour would then produce as much surplus value in 25×6 hour days, as simple labour produces in 50×6 hour days etc.

Similarly, if we are considering the labour-power exploited, and the quantity of labour-time, the other variable is the number of workers exploited. The 300 hours could be made up of 50 workers working a six hour day for one day. The amount of variable capital laid out to buy the labour-power of fifty workers to work a six hour day, is the same as to buy the labour-power of one worker to work a six hour day for fifty days.

On that basis.

“The rate of surplus-value and the length of the working-day being the same, variable capitals of equal magnitude are therefore employed, if equal quantities of labour-power (a labour-power of the same price multiplied by the number of labourers) are set in motion in the same time.” (p 302)

Returning to A and B, we have

Etc.

“The variable capital advanced for a definite period of time is converted into employed, hence actually functioning and operative variable capital only to the extent that it really steps into the sections of that period of time taken up by the labour-process, to the extent that it really functions in the labour-process. In the intermediate time, in which a portion of it is advanced in order to be employed later, this portion is practically non-existent for the labour-process and has therefore no influence on the formation of either value or surplus-value. Take for instance capital A, of £500. It is advanced for 5 weeks, but every week only £100 enter successively into the labour-process. In the first week one-fifth of this capital is employed; four-fifths are advanced without being employed, although they must be in stock, and therefore advanced, for the labour-processes of the following 4 weeks.” (p 302)

The relation between the advanced variable capital, and that actually employed, all other things being equal, can only affect the production of surplus value to the extent that it determines how much labour-power can be exploited in a given period of time. In other words, the longer the period of turnover, the more capital must be advanced in proportion to that actually employed. Consequently, a larger capital is then required to productively employ a given number of workers for a given amount of time.

In our example, B had to be ten times the advanced capital of A, in order to employ the same amount of labour-power, for the same amount of time.

“The advanced variable capital functions as variable capital only to the extent and only during the time that it is actually employed, and not during the time in which it remains in stock, is advanced, without being employed. But all the circumstances which differentiate the relation between the advanced and the employed variable capital come down to the difference of the periods of turnover (determined by the difference of either the working period, or the circulation period, or both). (p 303)

Equal quantities of variable capital, however it is expended, (e.g. ten hours of simple labour or five hours of complex labour, one worker working for ten hours or ten workers working for one hour) produce equal amounts of surplus value, if the rate of surplus value is constant.

“If then, equal quantities of variable capital are employed by the capitals A and B in equal periods of time with equal rates of surplus-value, they must generate equal quantities of surplus-value in equal periods of time, no matter how different the ratio of this variable capital employed during a definite period of time to the variable capital advanced during the same time, and no matter therefore how different the ratio of the quantities of surplus-value produced, not to the employed but to the advanced variable capital in general. The difference of this ratio, far from contradicting the laws of the production of surplus-value that have been demonstrated, rather corroborates them and is one of their inevitable consequences.” (p 303)

Examining the rate of surplus value for A and B, over a five week period, A produces £500 of surplus value for £5,000 (even though only £500 are employed) = $500/5000 = 10\%$.

In a year, we calculated that the figures were 1000% and 100% respectively, but these ratios are still the same as for a five week period, i.e. 10:1.

“The annual rate agrees with the actual rate of surplus-value. In this case it is therefore not capital B but capital A which presents the anomaly that has to be explained.” (p 304-5)

The answer is that capital A is never advanced for more than five weeks, whereas capital B is advanced for fifty weeks. So, A is only five times larger than the capital advanced each week, whereas B is fifty times larger. The five week turnover period of A is just one tenth of a year, in which A is turned over ten times. So, although the employed capital is £5,000, the same as B, for the year, the capital advanced is only a tenth of that, £500.

The surplus value is produced according to the amount of variable capital employed, not that advanced. The amount of variable capital employed is the same in the case of both A and B, i.e. £5,000, and so the amount of surplus value produced is also the same. Necessarily, when measured against the variable capital advanced then, the rate for A must be ten times that of B, because B is ten times A.

The ratios of turned over capital to advanced capital can be manipulated in a number of ways. So, for example, the turned over capital can be divided by advanced capital to give number of turnovers. The advanced capital multiplied by number of turnovers to give turned over capital, or turned over capital multiplied by the turnover time as a fraction of a year, e.g. $1/10$, to give the advanced capital.

In the example, the quantity of paid and unpaid labour (necessary and surplus labour) turned over during the year, is the same for both A and B. Because the turnover period for A is five weeks, and £100 per week is employed, A has to have a ratio of 5:1, of its advanced capital to employed capital, whilst B a ratio of 50:1.

Marx here makes a distinction. The rate of surplus value distinguished has been the annual rate of surplus value. But, if we calculate the rate of surplus value on the basis of the surplus value produced, divided by the labour-power employed to produce it, we get a different figure. In other words, the annual rate of surplus value for A is £5,000 surplus value divided by £500 advanced capital. But, what Marx calls the “*real rate of surplus value*” is £5,000 of surplus value divided by £5,000 of labour-power employed to produce it.

NB. This can be confusing, because in *Volume III*, when looking at the calculation of the rate of profit on a similar basis, Marx demonstrates that it is on this latter basis that capitalists calculate the rate of profit, and that this actually understates the real rate of profit massively for the reasons set out above. It is actually the method of calculating the “*annual rate*” above, that provides the basis of calculating a “*real*” rate of profit.

“It follows rather from what has been set forth above that the annual rate of surplus-value coincides only in one single case with the real rate of surplus-value which expresses the degree of exploitation of labour; namely in the case when the advanced capital is turned over only once a year and the capital advanced is thus equal to the capital turned over in the course of the year, when therefore the ratio of the quantity of the surplus-value produced during the year to the capital employed during the year in this production coincides and is identical with the ratio of the quantity of surplus-value produced during the year to the capital advanced during the year.” (p 308)

The annual rate of surplus value is S/v , where S is the total surplus value produced in a year, and v is the advanced variable capital. The real rate of surplus value is S/V , where V is the variable capital employed. V is equal to $v \times n$, where n is the number of times the variable capital is turned over.

So, the annual rate of surplus value can also be written as $(S/V \times v \times n)/v$.

So, if the variable capital is £5,000 as above, and turns over just once in a year, and the real rate of surplus value = 100%, then,

$$100 \times £5,000 \times 1/£5,000 = 100\%.$$

Only in this case, when the advanced variable capital is turned over once a year, will the annual and real rate of surplus value be the same.

If we call the annual rate of surplus value S' and the real rate of surplus value s' then we have,

$$S' = s'vn/v = s'n$$

So, S' can only equal s' where $n = 1$.

In addition, n is the same as the inverted time of turnover. If the turnover time is a tenth of a year, the number of turnovers, n , is ten, i.e. $1/10$ inverted is $10/1$. So, when n is greater than 1, S' is greater than s' , and when n is less than 1, i.e. when the turnover time is greater than a year, S' is less than s' .

Suppose in the previous example, the turnover time is 55 weeks, rather than 50 weeks. The advanced capital, v , is now £5,500 (i.e. enough to cover 55 weeks \times £100). However, in a period of 50 weeks, this advanced capital has turned over only $50/55 = 10/11$ times. Then,

$$S' = (100\% \times \text{£}5,500 \times 10/11) / \text{£}5,500 = 100\% \times 10/11 = 1000/11 = 90^{10}/_{11}\%.$$

Marx gets another bit of this calculation wrong. He says,

“Indeed, if the annual rate of surplus-value were 100%, then during the year 5,500 v would produce 5,500 s, whereas 10/11 years are required for that.” (p 309)

In fact, that should read “whereas 11/10 years are required for that.” In other words, 55 weeks rather than 50 weeks are required. In 50 weeks, the advanced capital, v, of £5,500 only produce £5,000 surplus value, so $5000/5500 = 10/11 = 90^{10}/_{11}\%$.

*“The annual rate of surplus-value, or the comparison between the surplus-value produced during one year and the variable capital **advanced** in general (as distinguished from the variable capital **turned over** during the year), is therefore not merely subjective comparison; the actual movement of the capital itself gives rise to this contraposition. So far as the owner of capital A is concerned, his advanced variable capital of £500 has returned to him at the end of the year, and £5,000 of surplus-value in addition.” (p 310)*

By comparison, capitalist B had to provide £5,000 of capital rather than £500, before they could commence business. Yet, in a year, both only get back the same £5,000 of surplus value.

Capitalist A will have seen his £500 of capital return to him ten times, during the year, along with £500 of surplus value on each occasion. Each time, the £1,000 received, will be used to buy new labour-power as well as to provide for the needs of the capitalist. They may well have used some of the returned capital to buy in means of production that are stored up as a productive supply, as well as some of it being held in bank deposits, as money-capital waiting to be used.

Capitalist B, who's capital turns over just once a year, may, like A, find that this capital, at that point, is partly held as money-capital, partly as productive-capital, partly as commodity-capital.

Capitalist C, who's capital only turns over every 55 weeks, finds that at the end of the year, they too have produced £5,000 of surplus value, like A and B, but they have neither had the return of their capital nor the surplus value it has produced.

The rate of surplus value, in one turnover period, is the surplus value produced in it, divided by the variable capital employed in that period. But, as set out in *Volume I*, capital is never actually spent, but only ever 'advanced'. That is, money that is spent does not return. If I spend money to buy food to eat, I don't expect to see the money again. But, a capitalist that 'advances' capital does expect to see it again, plus a surplus value when they sell the commodities, or the product of the commodities they have bought.

“The entire circular movement described by capital-value, measured by the time from its advance to its return, constitutes its turnover, and the duration of this turnover is a period of turnover. When this period has expired and the circuit is completed, the same capital-value can renew the same circuit, can therefore expand anew, can create surplus-value. If the variable capital is turned over ten times in one year, as in the case of capital A, then the same advance of capital begets in the course of one year ten times the quantity of surplus-value that corresponds to one period of turnover.” (p 310-11)

It is not that ten capitals of £500 are advanced, but that the same £500 capital is able to be advanced ten times, because it returns ten times rather than just once a year.

Marx compares it to the position of the circulation of money. If there is a £1 coin in the economy, on each occasion its used, it buys £1 of commodities. Yet, A might buy £1 of sweets from B, who then uses this same coin to buy an ice cream from C, who then uses it to buy a newspaper from D and so on. The same coin over a year, might change hands 100 times. It will have enabled £100 of transactions to take place. Yet, only this single £1 coin continues to exist, and on each occasion has been worth just £1.

“In the same way capital A indicates at each successive return, and likewise on its return at the end of the year, that its owner has operated always with the same capital-value of £500. Hence only £500 return to him each time. His advanced capital is therefore never more than £500. Hence the advanced capital of £500 forms the denominator of the fraction which expresses the annual rate of surplus-value.” (p 311)

II. The Turnover of the Individual Variable Capital

*“Whatever the form of the process of production in a society, it must be a continuous process, must continue to go periodically through the same phases... When viewed therefore as a connected whole and as flowing on with incessant renewal, every social process of production is, at the same time, a process of reproduction... As a periodic increment of the capital advanced, or periodic fruit of capital in process, surplus-value acquires the form of a **revenue** flowing out of capital.” (p 312)*

Looking at capital A, over a five week period, £500 of variable capital, is laid out. The £500 of money-capital that was transformed into it disappeared. The money form of that capital, as wages, becomes just money. The worker spends it, not as capital, but only as money to buy wage goods. The wage goods themselves, when consumed, by the worker, also disappear.

But, at the end of the five week period, the capital that had assumed its productive form (labour-power) has also disappeared. It has been consumed itself in the production process, and transformed into the end product. The capital now exists in a different form as commodity-capital. But, this capital also now comprises a surplus value of £500. The capital has expanded in the production process, to a value of £1,000, as a consequence of the surplus labour provided by the worker.

But, precisely because of the nature of this production process, as continuous, the commodity-capital does not just contain within itself the equivalent of the labour-power consumed to produce it, it also represents the means by which that labour-power is to be reproduced.

“But by converting the product into money, that portion of its value which is equal to the value of variable capital advanced can once more be exchanged for labour-power and thus again function as variable capital. The fact that the same workmen, i.e., the same bearers of labour-power, are given employment not only by the reproduced capital-value but also by that which has been reconverted into the form is immaterial. It is possible for the capitalist to hire different workmen for the second period of turnover.” (p 313)

So, over ten turnover periods, a capital of £5,000, rather than just £500, is spent on wages, even though only £500 is advanced. £5,000, not £500, will be incorporated into the value of the new product. It will, in addition, produce a surplus value of £5,000.

In each turnover, capitalist A does not work with the same capital as in the previous period, but with a new capital that has been created during the previous period. The value of the capital he worked with, in the previous period, has been returned to him, along with the

surplus value, but the money-capital he starts the circuit with, is not the same money he had at the start of the last circuit. It has been spent and disappeared. Nor is it the same productive capital, bought with that money-capital. That too has been consumed and disappeared in the new product. The workers he now hires, may be different than those employed previously, but even if not, the previous workers also provide new labour-power to that they previously expended. The materials will also be different.

The capital laid out is new capital that has been produced from the sale of the commodities produced in the previous process. It is a replacement for that laid out and consumed in that process. Indeed, it is for this reason that the value of the commodity produced is based on the reproduction costs of the productive-capital, i.e. its current cost of reproduction, rather than the historic money cost of the productive capital previously consumed in its production.

“Therefore what is accomplished by the ten-fold turnover of the advanced variable capital of £500 is not that this capital of £500 can be productively consumed ten times, or that a variable capital lasting for 5 weeks can be employed for 50 weeks. Rather, ten times £500 of variable capital is employed in the 50 weeks, and the capital of £500 always lasts only for 5 weeks and must be replaced at the end of the 5 weeks by a newly produced capital of £500. This applies equally to capitals A and B. But at this point the difference begins.” (p 314)

In the first five weeks, B, like A, has laid out £500 of variable capital. It has bought labour-power, which has been consumed, producing a new commodity, and therefore, new value, worth £1,000 - £500 replacing the £500 of labour-power, and £500 being surplus-value. But, this product is only one tenth complete, so neither the surplus value nor the value of the labour-power can be realised by its sale. Consequently, no new capital is returned to capitalist B, to begin the next 5 week period.

That continues to be the case until the end of the year, when the product is complete, and can be sold. Consequently, unlike capitalist A, B must continually advance additional capital throughout the year. They must have £5,000 of capital available themselves at the start of the year in order to proceed.

Similarly, the wage goods (means of subsistence) consumed by the workers in the first five weeks, have been consumed. A could meet the workers requirements for these commodities, in the first five weeks, provided they had those commodities available as commodity-capital that could be handed to the workers, each week, as wages. If we think of A as a capitalist producing those goods, the original commodity-capital consumed by the workers was reproduced during that five weeks, with a surplus of that production left over. Consequently, at the end of the five weeks, the original commodity-capital value exists again, and is once again available to meet the workers consumption requirements for another five weeks. In addition, capitalist A, has pocketed a surplus value of equal magnitude. If we think of it in physical terms, A has 1000 kilos of potatoes, which form his capital. Its paid out at the rate of 200 kilos a week to his workers. After five weeks, those workers have produced 2000 kilos of potatoes. 1,000 kilos exists again as a variable capital, to pay the workers wages for another five weeks, but the capitalist also has 1,000 kilos of potatoes that constitute surplus value.

But, for B, this is not possible. B produces a product, which the workers need to consume continuously, but, which is only available once a year. So, B has to have a year's supply of this commodity available at the start of the year, in order that his workers can consume throughout the year.

This is important when looking at the total social capital. Every society has to ensure that its workers are able to consume daily, and that value is produced in such a way that they can be paid wages to do so. But, a society that ties up a lot of its capital, like B, in production that takes a long time to come to fruition, will have a problem achieving that. Value will continually be taken out of the economy to cover workers' consumption, and the purchase of other inputs, but value will not be put back into the economy to be transformed into new money-capital to perpetuate the circuit. Economies that invest too heavily in big capital projects, with long completion times, will suffer this problem, and lower growth rates as a consequence.

“Thus, during 50 weeks, both A and B expend an equal amount of variable capital, pay for and consume an equal quantity of labour-power. Only, B must pay for it with an advanced capital equal to its total value of £5,000, while A pays for it successively with the ever renewed money-form of the value-substitute, produced every 5 weeks, for the capital of £500 advanced for every 5 weeks.” (p 315)

So, if the real rate of surplus value for A and B is the same, the annual rates of surplus value for A and B, vary in inverse proportion to the advanced variable capital of each, i.e. the capital that has to be advanced to complete a single turnover.

So, A is $5000/500 = 1000\%$, B is $5000/5000 = 100\%$. $500:5000 = 1:10 = 100\%:1000\%$.

III. The Turnover of the Variable Capital from the Social Point of View

Suppose A and B each employ 100 workers. They are paid £1 per week, making up the £100, laid out as capital by both. The workers work ten hours a day, six days a week, for fifty weeks, making 300,000 hours worked for both A and B, 600,000 hours in total for society.

However, A's workers were paid £500 out of A's capital. Moreover, as stated previously, in order to use these wages, to buy means of subsistence, the latter must exist. If, as in the case previously cited, where the workers produced and consumed potatoes, the workers are paid in advance, the capitalist would need to have a store of potatoes available to give them, before they started work. If they are paid a week in arrears, they must produce enough in that week to cover their consumption, or else again the capitalist must have a sufficient stock to meet their needs.

The fact that they are paid in money rather than potatoes does not change this fundamental requirement. If one hundred workers work 6,000 hours in the week, and are paid £100, they will in this time produce an output worth £200, which is let us say 200 kilos of potatoes. They require 100 kilos per week to reproduce their labour power. They spend their £100 of wages buying these 100 kilos of potatoes, leaving the other 100 kilos, worth £100, in the hands of the capitalist.

In the case of capitalist A, He must have a money capital of £500 available to pay as wages, because his product requires, not one week, but five weeks to produce and sell. But, once the second five week turnover period begins, what the worker receives in wages is not new capital advanced by capitalist A, but only a portion of his own production of value returned to him.

To return to the potato example, the capitalist advances 100 kilos of potatoes to the workers, for the first week, as wages, to sustain them. But, during that week they produce 200 kilos of potatoes. What the capitalist provides them with in week 2, therefore, is only 100 kilos of the very same potatoes the workers had themselves produced the previous

week! That 100 kilos was the value of their labour-power expended during that week, and reproduced from the value of their output, alongside the surplus value. Its important to understand, however, the difference between the position of the variable capital and the constant capital here, and not to understand the value of the variable capital, reproduced from the value of the end product, as in some way simply a transfer of the value of the labour-power. The labour-power does not transfer its value to the product in the way that the constant capital does. The value of the commodity is not comprised of the value of the constant capital, plus the variable capital plus the surplus value. That was the mistake that Adam Smith made in viewing the value of the commodity back to front as made up of these factor costs. It is rather comprised of the value of the constant capital transferred to it, plus the new value created by labour. It is out of this value, that the factor costs, revenues, are then derived.

The labour-power creates *new value*, equal to the labour it performs. It is conceivable, therefore, under some exceptional conditions, that, if the value of labour-power is very high, the new value created could be less than the value of the labour-power, resulting in negative surplus value, i.e. losses. For example, suppose workers work for ten hours per day, and thereby create ten hours of new value. However, because of a crop failure, for example, the price of the food they require soars, so that it requires twelve hours of labour per day to cover the subsistence needs of the worker. The worker will continue to be creating ten hours of new value per day, but the value of their labour-power will have risen to twelve hours, leaving the employing capital with a daily loss equal to two hours. The capitalist will see at the end of the period that their capital has shrunk rather than grown.

Suppose, a farmer has constant capital in the form of seeds equal to 10 tons. They are planted by his workers, who as with the potatoes above, are also paid in kind, with 10 tons of grain held as variable capital by the capitalist. The workers undertake a year's labour, but due to a crop failure, only 15 tons of grain is harvested. The capitalist started out with a capital of 20 tons of grain, but at the end of the year, has a capital of only 15 tons. Their commodity after reproducing the constant capital of 10 tons, and and the variable capital of 10 tons, was not sufficient to reproduce the consumed capital. Although the workers had produced new value, this new value was not enough because of the crop failure to reproduce the value of their labour-power, leaving the capitalist with a loss equal to 5 tons of grain. He would either have to inject additional capital to buy additional grain, or else would have to reduce the scale of his operation.

Marx does not generally analyse such a situation, because the condition for capital as a whole is that workers not only produce this positive new value, but also produce a surplus value on top of it. But, as Marx says, for workers to produce surplus value, they must be not only absolutely productive, but relatively productive. In other words, all purposeful labour is productive of value, the workers above continued to produce 10 hours of new value, and so it is absolutely productive. However, for surplus value to be created, labour must be relatively productive, in other words, it must not just produce positive new value, but this positive new value, must be greater than the value required for its own reproduction.

Marx refers to this in *Theories of Surplus Value*, in describing the correct recognition of this fact by Ricardo as against Adam Smith. Ricardo points out, as against Smith, that it is not the number of people employed by an economy, or its gross product that is significant, but the net product, i.e. the amount of surplus product produced, relative to the numbers employed. Marx extends Ricardo's example, referring to the situation in Germany where a proportion of the population were rotated into providing defence rather than production. If productivity rose, Marx says, less labour was required in production, making more available for defence. By contrast, the population might rise, but if productivity declined,

although more might be produced in total, more is required to feed the larger population, more people might then be required to engage in agricultural production, so that although population and production has risen, fewer people are freed to engage in defence.

The same is true where the worker is paid money wages. After the first turnover period, the value of their labour-power is realised in the value of the commodity they produce. The money form of that value, simply returns to them as wages.

But, for B, the turnover period is a year. After 5 weeks, the value of the labour-power has been transferred into commodity-capital, but has not been realised. So, when B's workers receive their wages after week 5, it is not a return of their own value, but the advance of new additional capital. That cannot happen until the end of the year, when the product is sold. Then, its sale reproduces the value of the labour-power consumed in its production, so that the variable capital then exists to pay wages for the next year.

“The shorter the period of turnover of capital — the shorter therefore the intervals at which it is reproduced throughout the year — the quicker is the variable portion of the capital, originally advanced by the capitalist in the form of money, transformed into the money-form of the value (including, besides, surplus-value) created by the labourer to replace this variable capital; the shorter is the time for which the capitalist must advance money out of his own funds, and the smaller is the capital advanced by him in general in proportion to the given scale of production; and the greater comparatively is the quantity of surplus-value which he extracts during the year with a given rate of surplus-value, because he can buy the labourer so much more frequently with the money-form of the value created by that labourer and can so much more frequently set his labour into motion again.” (p 317)

For any given scale of production, the amount of advanced capital decreases in proportion to the turnover period (or inverse proportion to the number of turnovers). The annual rate of surplus value increases, similarly.

By the same token, for any given amount of advanced capital, the scale of production rises, the higher the rate of turnover.

“It generally follows from the foregoing investigation that the different lengths of the turnover periods make it necessary for money-capital to be advanced in very different amounts in order to set in motion the same quantity of productive circulating capital and the same quantity of labour with the same degree of exploitation of labour.” (p 318)

When the workers withdraw means of subsistence from the market, they put money into it. For the reasons set out previously, however,

“But since the money wherewith the B labourer pays for his means of subsistence, which he withdraws from the market, is not the money-form of a value produced and thrown by him on the market during the year, as it is in the case of the A labourer, he supplies the seller of the means of subsistence with money, but not with commodities — be they means of production or means of subsistence — which this seller could buy with the proceeds of the sale, as he can in the case of A.” (p 318)

B's workers have wages, which they use to buy commodities, but the commodities they produce themselves do not appear in the market for another year. So, B workers may have potatoes produced by A workers, but the money paid as wages to A workers from that sale, may find no wheat, for example, produced by B workers, to buy, for another year. Given that exchange, as we saw at the beginning of *Volume I*, is really the exchange of an amount of labour-time by A, for an equal amount of labour-time from B, it can be seen how this situation can lead to crises and disproportions.

“If we conceive society as being not capitalistic but communistic, there will be no money-capital at all in the first place, not the disguises cloaking the transactions arising on account of it. The question then comes down to the need of society to calculate beforehand how much labour, means of production, and means of subsistence it can invest, without detriment, in such lines of business as for instance the building of railways, which do not furnish any means of production or subsistence, nor produce any useful effect for a long time, a year or more, while they extract labour, means of production and means of subsistence from the total annual production.” (p 318-9)

One of the reasons the USSR collapsed was that it invested huge amounts of social labour-time in this way, that sucked value out of its economy in the short term, but only put it back in the long-term. Its industry was massively geared to heavy capital goods production, with long turnover periods. It also operated as a massive sort of welfare state, as a means of reconciling the fact that the workers were the ruling class, and yet control was in the hands of a workers' bureaucracy. It had large numbers of doctors, scientists, teachers, as well as the hospitals, schools and universities to go with them, and virtually free public transport. Not only did this suck value out of the rest of the economy to provide the necessary means of production for these enterprises, as well as to provide the means of subsistence for those that worked in them, but the costs of building these facilities, and of educating and training those that worked in them, required yet more resources to be sucked out of the economy. Although, all these things put value back in the economy, they do so only over long periods of time.

In short, too few workers were employed in productive activity that put value into the economy in the short term – let alone the problems of that value being diminished because of poor quality etc. - and too many were involved in activities that only returned value in the long term. Democratic rather than bureaucratic planning may make that problem worse rather than better. If asked, most workers would vote for more, better hospitals, schools, teachers, doctors etc. Its not so easy to get across what the real cost of achieving that is. When you are expressing a preference in a vote, rather than actually spending your money, its easy to vote for things you'd like rather than things you can afford.

In fact, when workers express their real preferences for what they wish to consume, i.e. how they vote with their wallets, they frequently demonstrate a higher preference for allocating available social labour-time in the production of motor cars, football and other forms of entertainment, TV's and electronic equipment, more than for education or healthcare.

That is because, when individuals express a preference it is usually a preference for what they think 'society', i.e. everyone else should do. So, individuals might vote for an increase in public transport, because they think everyone else should use it, leaving the roads clear for them! The consequence is that such democratic planning at a detailed level, would almost certainly result in major dislocations because these macro decisions, allocating available social labour-time would inevitably be at variance with the millions of micro decisions of consumers of how they wished to spend their money. It would lead to the emergence of a black market economy, as a means of meeting the needs of consumers that were not being met, as a result of inadequate production, as well as waste of resources in all those areas that were likewise over produced.

Effective planning could only be outline, indicative planning rather than detailed, and would need to develop gradually and organically, based on the growing integration of the individual production plans of the workers' co-operative enterprises.

But, capitalism does not allocate available social labour-time efficiently either. More so in Marx's time than today, when large scale production has become planned and regulated, and when the national economy itself has been subject to similar planning and regulation.

*“On the one hand pressure is brought to bear on the money-market, while on the other, an easy money-market calls such enterprises into being **en masse**, thus creating the very circumstances which later give rise to pressure on the money-market. Pressure is brought to bear on the money-market, since large advances of money-capital are constantly needed here for long periods of time. And this regardless of the fact that industrialists and merchants throw the money-capital necessary to carry on their business into speculative railway schemes; etc., and make it good by borrowing in the money-market.” (p 319)*

This demonstrates the differences and similarities of today compared with Marx's time. Today, we have the easiest money market of all time. Yet, the very largest enterprises, that have billions of dollars on their balance sheets, do not spend it to increase their production, to increase their profits. Why? Because these large corporations do not base their decisions on immediate market signals, as they did in Marx's day, but on planned investment covering many years. That itself is based on complex market research, demographics and so on. Unlike the kind of small firms of Marx's day, these large companies are able to judge whether an increase in production is capable of being absorbed by the market or not, and so whether it will be profitable or not.

If not, there is no reason they will invest in additional production. In Marx's day, when the economy was booming, the small companies sought to increase their profits and market share by ramping up production to meet the increased demand and benefit from the higher prices. As each did so, the potential arose for the market to become oversupplied. Then, each firm tried to retain its market share by producing even more, and selling it at lower prices. Such crises of overproduction always arose on the back of periods of prosperity and rising consumption, contrary to the belief of the underconsumptionists, that crises erupt because of inadequate consumption.

Instead, today, crises arise because the big companies bring about planned reductions in output, to prevent such overproduction. But, in doing so, they reduce the level of aggregate demand in the economy, setting in place its own downward spiral of economic activity.

Similarly, the many small firms that continue to exist, remain prone to the kind of overproduction Marx refers to. In the last ten years, at least, very easy money-markets have led to the establishment of many small businesses that really should not have been created. In Britain, they form part of the 160,000 known zombie companies, only able to repay the interest, rather than the capital on their loans, and some even struggling to cover the interest. It is a similar thing to 1 million plus zombie mortgages, where the borrower has only managed to pay the interest on their loan, and has no means to repay the capital sum, and is thereby likely to lose their house.

As in Marx's day, this easy money is used for speculation, be it in property, as above, or to blow up share and bond price bubbles, which themselves detract from productive investment.

“On the other hand pressure on society's available productive capital. Since elements of productive capital are for ever being withdrawn from the market and only an equivalent in money is thrown on the market in their place, the effective demand rises without itself furnishing any element of supply. Hence a rise in the prices of productive materials as well as means of subsistence. To this must be added that stock-jobbing is a regular practice and capital is transferred on a large scale. A band of speculators, contractors, engineers,

lawyers, etc., enrich themselves. They create a strong demand for articles of consumption on the market, wages rising at the same time. So far as foodstuffs are involved, agriculture too is stimulated. But as these foodstuffs cannot be suddenly increased in the course of the year, their import grows, just as that of exotic foods in general (coffee, sugar, wine, etc.) and of articles of luxury. Hence excessive imports and speculation in this line of the import business. Meanwhile, in those branches of industry in which production can be rapidly expanded (manufacture proper, mining, etc.), climbing prices give rise to sudden expansion soon followed by collapse. The same effect is produced in the labour-market, attracting great numbers of the latent relative surplus-population, and even of the employed labourers, to the new lines of business.” (p 319)

Part of the turnover period is determined by the working period. In agriculture, that is largely determined by natural cycles. In manufacturing and mining it is dependent on the development of the productive process itself, i.e. the increasing scale of production and distribution. That operates in a contradictory manner. On the one hand, the development of the scale of production tends towards the need for a larger productive supply, lengthening the turnover period. On the other, that same development of productive forces means that supply itself expands, and becomes more regular, tending towards a reduced turnover period. Similarly, the development of a global market, as the need arises to search for markets on an ever wider basis, to sell the increased output, tends to increase the turnover time. But, the same process expands and develops distribution networks – and under imperialism leads to production facilities themselves being established closer to markets – as well as revolutionising transport, thereby reducing turnover time.

Marx gives the example of British cotton exports to India. When times were good, and money is readily available, in the money-market, the exporter may pay the manufacturer for the products. At other times, the exporter may not be inclined to take that risk, instead serving only to ship the goods, leaving the manufacturer to bear the risk of whether they will be actually sold.

However, in the former case, the wages paid to the cotton workers from the money received from the exporter, are not the value they have produced being returned to them. That can only happen when that value is actually realised by the commodity being consumed, i.e. bought by a final consumer. The exporter, here, is not a final consumer. He only buys in order to sell on. In reality, he buys these commodities with additional capital, just as if the manufacturer had introduced additional capital to cover the circulation period. The exporter/merchant may have obtained this money-capital himself by borrowing in the money-market.

“Similarly, before this money is thrown on the market, or simultaneously with this, no additional product has been put on the English market that could be bought with this money and would enter the sphere of productive or individual consumption. If this situation continues for a rather long period of time and on a rather large scale, it must have the same effect as the previously mentioned prolongation of the working period.” (p 321)

In other words, in this situation, the English workers are producing goods, which are shipped out of the country. They are paid wages in money with which to buy goods. The money itself may have been obtained as credit in the money market, particularly where credit is easy, and interest rates are low. But, because their production has been exported, and the equivalent value of goods has not been imported, in return, a situation arises, of too much money chasing too few commodities, so that market prices are forced up – inflation.

Today, that situation arises in Britain, not because goods are being exported without a corresponding import of goods to the same value, but because money tokens are printed, and credit is created, so that workers can be encouraged to borrow and spend. Plenty of imported Chinese goods ensures that these prices are kept down, but the inflation manifests itself in the prices of property, shares and bonds, which rise to astronomical levels.

When the British cotton goods reach India, they may be bought, possibly by other merchants again using credit. The exporter/merchant may also themselves use this credit to buy Indian commodities. The way this worked was often via bills of exchange. For example, A sells £100 of goods to B. A is given a bill of exchange drawn on B to the value of £100, like an I.O.U. A can either wait until the due date of the bill and cash it for full payment, or they can discount it at a discount house, which pays cash less a discount in return for it. Alternatively, A can endorse the bill, and use it as a means of payment themselves, passing it to C, from whom they buy goods, who then eventually collects from B.

*“With this credit, products are bought in India and sent as return shipment to England or drafts remitted for this amount. If this condition is protracted, the Indian money-market comes under pressure and the reaction on England may here produce a crisis. This crisis, in its turn, even if connected with bullion export to India, calls forth a new crisis in that country on account of the bankruptcy of English firms and their Indian branches, which had received credit from Indian banks. Thus a crisis occurs simultaneously in the market in which the balance of trade is **favourable**, as well as in the one in which it is **unfavourable**. This phenomenon may be still more complicated. Assume for instance that England has sent silver bullion to India but India’s English creditors are not urgently collecting their debts in that country, and India will soon after have to ship its silver bullion back to England.” (p 321)*

Credit here has hidden the fact that in reality the cotton has not been sold and its value has not been reproduced. The wages of the cotton workers have not been paid with the return of the value they previously created, but by the advance of additional capital, extracted from the money-market.

“But as soon as the crisis breaks out in England it turns out that unsold cotton goods are stored in India (hence have not been transformed from commodity-capital into money-capital — an over-production to this extent), and that on the other hand there are stored up in England unsold supplies of Indian goods, and moreover, a great portion of the sold and consumed supplies is not yet paid. Hence what appears as a crisis on the money-market is in reality an expression of abnormal conditions in the very process of production and reproduction.” (p 322)

Marx refers to one final aspect of the effect of the rate of turnover of circulating capital. It relates to where one or more of the inputs are themselves an output. For example, coal used to fuel steam engines for pumps in a coal mine. The shorter the working period, the more frequent these inputs are themselves made available, and so the less productive supply is required.

Chapter 17 - The Circulation of Surplus Value

So far, Marx has really only analysed the circulation of the existing capital-value. Now he turns his attention to the circulation of the surplus value, created in production.

A part of the value transferred to the new product is that which comprises the value of necessary repairs and maintenance of the fixed capital. So far, it has been assumed that this capital-value must be in existence before production begins. In other words, a capital must not only possess enough money-capital to cover the labour-power and means of production bought, but also to cover the amounts that will need to be spent to maintain and repair the buildings and machines etc.

This is indeed the case for capitalist B, in the example, in the previous chapter. But, it is not the case for capitalist A. Capitalist A, after five weeks, realises a surplus value. Some of it may be used for A's personal consumption. But, another part of it can simply go to cover the costs of repairs and maintenance. So, capitalist A, unlike capitalist B, did not have to advance additional capital to cover the costs of repairs and maintenance. The capital required was produced out of the production process itself, as part of the surplus value.

Instead, the capitalist may have covered the cost of the repairs by borrowing from banker C. But, where did they get the money from? At least some of it, is the surplus value created by capitalists D, E, F and G, which is deposited as a money hoard with banker C.

“As far as A is concerned there is as yet no question of accumulated capital. But with regard to D, E, F, etc., A is, in fact, nothing but an agent capitalising surplus-value appropriated by them.” (p 324)

In *Volume I*, it was shown how accumulation is the use of surplus value to reproduce the relations of production on an extended scale. That can be effected in a number of ways. There can be repeated, small-scale, increments; the working day may be extended so that additional raw materials are bought, and processed using the existing fixed capital; the same thing might be effected by introducing shift working, the expansion is then achieved by using the additional capital to employ more labour-power and circulating constant capital. This is extensive accumulation.

But, additional capital might also be used to buy a new machine that employs the same or even less labour-power, but also involves the expansion of the capital, via the need to buy an increased quantity of material to be processed, given the higher level of productivity. This is intensive accumulation. However, at a certain point, such expansion requires not just piecemeal increments, but a dramatic expansion of the fixed capital itself – the building of new factories, the large scale replacement of existing equipment and so on. In other words, intensive accumulation turns into extensive accumulation.

Marx refers to other aspects of how the surplus value can be used in this way. For example, where it is not needed, for other purposes, and where market conditions favour it, the surplus value can be used to buy up materials speculatively, on the basis that they may be more expensive in future. It can also be used for other types of speculation. For example, Marx and Engels refer to how it was used for speculation in railway shares, over the last twenty years, it has been used by company boards to buy back shares, or to buy the shares of other companies, thereby inflating asset prices even further.

All of these things are made possible by the surplus value received, which the initial capital was not sufficient to achieve. At the same time, there will be periods when the surplus

value is flooding into the firm's coffers, but where it cannot be used. It may not be possible to expand production incrementally, for example. Yet, to expand production, on a larger scale, by building a bigger factory etc. may require the equivalent of several years accumulation of surplus value. Moreover, as seen previously, the value equivalent of the wear and tear of fixed capital, continues to flow back, but is not used for several years, to replace the fixed capital itself, which continues to function until it is worn out.

“But simultaneously with the development of capitalist production the credit system also develops. The money-capital which the capitalist cannot as yet employ in his own business is employed by others, who pay him interest for its use. It serves him as money-capital in its specific meaning, as a kind of capital distinguished from productive capital. But it serves as capital in another's hands. It is plain that with the more frequent realisation of surplus-value and the rising scale on which it is produced, there is an increase in the proportion of new money-capital or money as capital thrown upon the money-market and then absorbed — at least the greater part of it — by extended production.” (p 325)

We have seen this phenomenon in the global economy over the last twenty-five years. As the global economy went into its long wave *Winter* phase, the rate of profit rose. An increasing amount of surplus value was produced relative to the capital advanced to produce it. Moreover, because of the nature of the *Winter* phase of the long wave, economic growth is below its average trend. An increasing supply of potential money-capital, with a limited increase in demand for money-capital, causes interest rates to fall. Global interest rates have been in a secular down trend since the 1980's. From around 1999, when the global economy entered the *Spring* phase of the long wave, the boom has created huge volumes of surplus-value, as the rate of profit continued to rise.

Two factors ensured that continued to exert downward pressure on interest rates. Firstly, today's huge companies plan their expansion in accordance with what they consider will be a profitable investment, over long periods. Secondly, a lot of modern production is production of services, or intellectual production. It relies on the employment of large amounts of highly educated, complex labour, rather than buildings, machines or materials. The largest component of the value of a piece of software is not the CD it is on – even where its still in that format – but the value created by the labour of the programmers that developed it. Even where production is still of physical products this is true. The materials that go into an iPhone are physically less than went into a 1980's telephone, and less in value too. The majority of its value stems from the labour of its designers, of the programmers that developed its software, and who developed the chips etc. that make it function.

Consequently, huge amounts of surplus value were produced that could not be immediately used for expansion of production, and which formed money hoards. The supply of potential money-capital way exceeded demand, pushing interest rates down. These money hoards left the circuit of capital and went to buy property, shares and bonds. Alongside it went a deflation of commodity prices, caused by the same massive rise in productivity that was partly behind the rise in the rate of profit. The massive increase in productivity and fall in value of commodities, produced in vast quantities, in China, and elsewhere, should have meant falling prices. It was avoided by using massive money printing to reduce the value of money tokens, in line with the fall in the value of commodities. Commodity price inflation was, therefore, subdued, whilst asset price inflation ballooned.

It is not money printing that has caused low interest rates, but the excess supply of potential money-capital relative to its demand. Money printing has merely been a symptom of the other side of that reality. The huge increase in surplus value came on the back of an

equally huge increase in productivity and production of use values. The money printing was merely the means of preventing the concomitant deflation, and of channelling the surplus-value from money hoards, in one place, into effective demand in another. The mechanism for this, and relation to money itself will be dealt with in more detail later.

*“The simplest form in which the additional latent money-capital may be represented is that of a hoard. It may be that this hoard is additional gold or silver secured directly or indirectly in exchange with countries producing precious metals. And only in this manner does the hoarded money in a country grow absolutely. On the other hand it may be — and is so in the majority of cases — that this hoard is nothing but money which has been withdrawn from circulation at home and has assumed the form of a hoard in the hands of individual capitalists. It is furthermore possibly that this latent money-capital consists only of tokens of value — we still ignore credit-money at this point — or of mere claims of capitalists (titles) against third persons conferred by legal documents. In all such cases, whatever may be the form of existence of this additional money-capital, it represents, so far as it is capital **in spe**, nothing but additional and reserved legal titles of capitalists to future annual additional social production.”* (p 325-6)

Marx quotes extensively from William Thompson's *“An Inquiry into the Principles of the Distribution of Wealth”*, London, 1850, to the effect, however, that this amassed wealth is, in fact, rather insignificant compared with the real wealth of the country, measured by its annual production. The stored up wealth, according to Thompson, amounted to about three or four years annual production. Were everyone to stop production, and just live off this wealth, then after four years it would have all gone, *“at the end of which time, without houses, clothes, or food, they must starve, or become the slaves of those who supported them in the three years idleness. As three years to the life of one healthy generation, say forty years, so is the magnitude and importance of the actual wealth, the accumulated capital of even the wealthiest community, to the productive powers of only one generation; not of what, under judicious arrangements of equal security, they might produce, particularly with the aid of cooperative labour, but of what, under the defective and depressing expedients of insecurity, they do absolutely produce!”* (p 327)

Marx then turns to the two forms of reproduction – simple and extended reproduction.

I. Simple Reproduction

Is where all of the surplus value is consumed unproductively by the capitalist. However, even here, a portion of the surplus value must always exist in the form of money rather than products, for the simple reason that, without money, the capitalist cannot buy the commodities for their personal consumption.

At any one time, a portion of that surplus value will be in the form of commodity-capital, waiting to be sold, and another will be in the form of money, in the hands of the capitalist, waiting to buy articles of consumption. Note that it exists here as money not money-capital. It exists to buy articles of personal consumption, not productive-capital.

For simplicity, Marx assumes money is in the form of gold coins, which exchange as a real equivalent value.

The laws, determining how much of this money is required were set out in *Capital I, Chapter 3*. It is determined by the value of the money, the quantity and value of commodities to be circulated, the needs for payment, as well as the velocity of circulation of the money, and the need to be able to cater for fluctuations in the above. A certain

amount of the money supply, therefore, is always itself in circulation, whereas another part is held as hoards and reserves.

“... but the total quantity of money is always equal to the sum of the money hoarded and the money circulating. This quantity of money (quantity of precious metal) is a gradually accumulated hoard of society.” (p 329)

Part of this hoard wears out each year, through usage, and has to be replaced. Countries, that produce commodities, sell them to countries that produce gold. The gold received in exchange can then be minted into coins.

“However, this international character of the transaction conceals its simple course. In order to reduce the problem to its simplest and most lucid expression, it must be assumed that the production of gold and silver takes place in that particular country itself, that therefore the production of gold and silver constitutes a part of the total social production within every country.” (p 330)

The production of gold must be at least equal to what is required to replace the worn out coins, plus what is required for jewellery etc. But, also, each year, the quantity of commodities produced and circulated increases. Even allowing for the fact that the value of each individual commodity tends to fall, the total amount of value circulated tends to rise, which is nothing more than to say that each year the total amount of social labour-time expended tends to rise. Consequently, the amount of gold production must be enough to ensure the additional minting of coins, to circulate this additional value. The countervailing force to this would be if the velocity of circulation of the money rose, so that less of it was required to circulate a given amount of value.

A portion of available social labour-time must then be devoted to the production of gold to use as money. It can be seen why capital views this as an overhead cost, and looks to alternatives to precious metals, to act as money.

In this economy, the gold producers immediately have their surplus value in the form of money, because gold here is money. As soon as it is produced, they can go into the market and use this surplus value to buy the articles of personal consumption they desire. Moreover, the workers employed by these capitalists can immediately be paid in gold too. This is different to the workers and capitalists in other industries, who first have to sell the commodity before the variable capital and the surplus value embodied in it can be reproduced.

For the same reason, the gold mining capitalist can immediately use his gold production to reproduce the constant capital, the materials etc. used in production. Considering the circuit of this capital it is $M - C \dots P \dots M'$, because here C' , the commodity-capital resulting from the production process, and incorporating surplus-value, is immediately money – gold. M' here comprises C , which is made up of the labour-power, the circulating constant capital, the portion of the fixed capital transferred in wear and tear, and in addition, the surplus value.

“If the sum were smaller, the general value of gold remaining the same, then the mine would be unproductive or, if this got to be generally the case, the value of gold compared with the value of commodities that remains unchanged would subsequently rise; i.e., the prices of commodities would fall, so that henceforth the amount of money laid out in $M - C$ would be smaller.” (p 331)

Normally, when a capital buys elements of circulating capital, it does so by withdrawing money from circulation. That is, either the capitalist withdraws money from the money

market, or else, in selling their own commodities, to be able to reproduce their capital, they withdraw money from circulation in payment for them. But, that is not the case for the gold producer. Their output is immediately an increase in the potential money supply. Their output can immediately be utilised to buy elements of circulating capital, without imposing any additional demand on the existing money supply. However, Marx has to be careful here. He could fall into the same error as Ricardo, in equating gold as money. Gold acts as the money commodity, but gold is not money. Gold is a commodity as well as acting as the money commodity. Not all gold production goes to be money. If more gold is put into circulation than is required as money, which could be the result of the process Marx describes here, the value of that money falls below the value of gold. It then gets taken out of circulation, and melted down.

Suppose the circulating capital is £500, the turnover time five weeks, made up of a working period of four weeks, and a circulating period of one week. The circulation period here is not made up of the time to sell the commodity, because it is immediately money. It is the period prior to production required to buy the productive capital. In this case, as in previous ones discussed, this £500 to cover the five weeks turnover time, must be available in advance, to buy the productive-capital.

Consequently, £100 is laid out for productive-capital each week. With a working period of four weeks, the output at the end of week five has a value of £400. But, £500 had been advanced. When at the beginning of week six, the £400 value of production returns – immediately as money – therefore, as in previous cases it also releases £100 of money capital, equal to the additional £100 capital advanced to cover the circulation period. This £100 of additional money-capital here, just like the £400, however, is actual new money, produced as part of the labour process.

With a turnover time of five weeks, and a fifty week year, there are ten turnovers and a total value of output of £5,000 in gold, i.e. 50 weeks \times £100. In every other sphere of production, with a similar £500 of capital, and turnover time, every four weeks, money is withdrawn from the market, in exchange for the commodities thrown into it. Similarly, that money is thrown back into the market as other commodities – means of production and labour power (means of subsistence) - are withdrawn from it. Here, by contrast, every four weeks, £400 of output is produced and thrown into the market, but does not withdraw £400 of money from the market, precisely because this product is the money-commodity. The output, as money, goes to buy new means of production and labour-power.

If the workers are paid £20 a week, or £100 for a five week period, that is £1,000 a year. But, this £1,000 is not a converted form of their output. It is a portion of their actual output. In other words, the workers are paid with a portion of the gold they produce.

“The £1,000 thus expended annually in labour-power and thrown by the labourers into circulation do not return therefore via this circulation to their starting-point.” (p 332)

The fixed capital required for starting the mine is a considerable sum that must be thrown into circulation from the start. The value of fixed capital passes into the value of the end product only gradually, as wear and tear. For other commodities, that value is reflected in the value of the commodity, which results in an equivalent amount of money being withdrawn from the market, which is then hoarded to cover the cost of replacement. But, for gold production, the wear and tear is not just transferred to the value of the end product, it is represented by a physical quantity of gold itself. In other words, if the wear and tear amounts to £10, then this is represented in the output of £10 worth of gold. This has to be the case for the reason set out at the beginning, i.e. the value of the output is equal to the

circulating capital, plus wear and tear of fixed capital, plus surplus value. But, the value of the output is equal to its unit value \times the number of units produced.

“In other words, it gradually assumes its money-form not by a withdrawal of money from the circulation but by an accumulation of a corresponding portion of the product. The money-capital so restored is not a quantity of money gradually withdrawn from the circulation to compensate for the sum originally thrown into it for the fixed capital. It is an additional sum of money.” (p 332-3)

Similarly, the portion of the total output that is equal to the surplus product, and is therefore, equal to the surplus value, does not have to be sold, but is immediately available to the capitalist as money. He throws this money directly into circulation, buying articles of luxury, and unproductive consumption with it.

The laws relating to money and the circulation of money were set out in *Volume I*. Basically, the amount of money required depends on the value and quantity of the commodities to be circulated, the value of money, the requirements for money as means of payment, the velocity of circulation and the need to retain certain money hoards and reserves. That means the amount of money required constantly fluctuates, a proportion circulating, another portion in hoards. A way of thinking about it might be in relation to a canal, though its not an accurate analogy. The amount of water required depends on the length and depth of canals. But, it also depends on the number of boats navigating them. The more, bigger boats, the more water is displaced. It would be inefficient to keep reducing and then refilling the canals, so instead, excess water drains into reservoirs. It is then fed back in when required.

“What must be paid in money in so far as there is no balancing of accounts — is the value of the commodities. The fact that a portion of this value consists of surplus-value, that is to say, did not cost the seller of the commodities anything, does not alter the matter in any way.” (p 333)

Suppose, we have a system of commodity production, with only individual producers. Ignore any constant capital involved in their production. The value of their output is then equal to the time it takes to produce. So, A produces, in five weeks, 100 kilos of spun yarn. But, this is commodity production, and during this five weeks, they must eat, and do so by buying food from some other commodity producer. Let us say that in order to work for this five weeks, they require the equivalent of three weeks labour to produce that food. We have then here the equivalent of the situation under capitalism. The three weeks constitutes necessary labour, and the other two weeks of the spinner constitutes surplus labour, i.e. had they only produced three weeks worth of yarn they would have sold it for just enough to cover their subsistence. The other two weeks production is a surplus over that.

So, they would need to have enough money-capital to cover their need to buy food, over the five week period, i.e. the equivalent of variable capital. When, at the end of the five weeks, they sell the yarn, they will get back the equivalent of five weeks labour-time in money. The fact that two weeks of this represents surplus labour-time does not change how much money is required to circulate these commodities. Let us say this money is £50. From it, they will need to use £30 = $\frac{3}{5}$, to cover their need to buy food over the next five week period. The other £20 they can spend on luxuries or on expanding their production.

Looked at from the perspective of “*many capitals*”, they all throw more value into circulation, in the form of commodity-capital, than they previously took from it, in the form of productive-capital. Consequently, they can all, on aggregate, take more money out than

they previously threw into it, for the purchase of that productive-capital. The amount of money itself has to expand so as to cover the increased amount of value being circulated.

Each capitalist withdraws money that is equal to the value of the productive-capital they previously withdrew, but also equal to the surplus-value they have produced. This money equivalent of the surplus value itself has its physical equivalent in the form of the surplus product, thrown into the market. That surplus product is comprised of commodities that may form additional productive-capital, i.e. an amount of constant capital (means of production) and variable capital (means of subsistence) greater than was used in the previous cycle, as well as other commodities to meet the needs of unproductive consumption by the capitalists.

Each producer produces a surplus product, a product whose value is greater than is required to reproduce those commodities – means of production and labour-power – that created it. In so doing, it creates the surplus production that other producers require to expand their own production, or consume unproductively. At the same time, each producer, in realising their own surplus value, acquires the means to purchase that surplus product, and thereby to expand their own production, or to consume unproductively.

“But the commodity-capital must be turned into money before its reconversion into productive capital and before the surplus-value contained in it is spent. Where does the money for this purpose come from? This question seems difficult at the first glance and neither Tooke nor any one else has answered it so far.” (p 335)

Thomas Tooke wrote a treatise on money and prices entitled, *“An Inquiry Into The Currency Principle, The Connection Of The Currency With Prices, and The Expediency Of A Separation Of Issue From Banking”*, 1844. Marx quotes from it extensively in his economic works, and it was probably the definitive analysis of prices and their movement of the time.

If we take the previous £500 of circulating capital, and assume this represents the total social capital, then it has engaged in production, creating a surplus product with a value of £100. So, £600 of commodities are now thrown into circulation. But, where does the additional £100 of money come from to circulate them?

Marx sets out a series of what he calls *“plausible subterfuges”*, which could be used to provide the answer. For example, not all capitalists replace their constant capital at the same time. So, a capitalist can obtain an amount of money, representing the value of their commodity, part of which is the value of the constant capital. If they do not spend that money to replace that constant capital immediately, this money is then surplus. But, this cannot be the answer because later they will be spending this money without putting its equivalent value back into circulation.

“It might be further said: Capitalist A produces articles which capitalist B consumes individually, unproductively. B’s money therefore turns A’s commodity-capital into money and thus the same sum of money serves to realise B’s surplus-value and A’s circulating constant capital. But in that case the question that still awaits solution is assumed still more directly to have been solved, namely: where does B get the money that makes up his revenue? How did he himself realise this portion of the surplus-value of his product?” (p 336)

Another suggestion might be that the money held by the capitalist for payment of wages is only paid out over a period of time, and so the money not actively being paid out could be available to realise surplus value. But, the larger the turnover period, the more money-

capital the capitalist has to retain for that purpose meaning less is available to be thrown into circulation.

In fact, it is the money paid out to the workers as wages, which they then use to buy commodities, which is one means by which the surplus value is realised, i.e. converted to money. That is because the price of the commodities they buy includes that surplus value. But, by the same token, it is also the purchases of capitalists that also realises the surplus value, in the commodities they buy. So, the question of where this additional money, in the hands of both workers and capitalists, comes from still remains.

Nor can the answer be that when fixed capital is bought, a large amount of money is thrown into circulation, which is only withdrawn gradually. The fixed capital purchased, itself had part of its price comprising surplus-value. If the price was £600, with £100 being surplus-value, the question still remains, where this £100 initially came from.

*“The general reply has already been given: If a mass of commodities worth x times £1,000 has to circulate, it changes absolutely nothing in the quantity of the money required for this circulation whether the value of this mass of commodities has been produced capitalistically or not. **The problem itself therefore does not exist.** All other conditions being given, such as velocity of the currency of money, etc., a definite sum of money is required in order to circulate commodities worth x times £1,000 quite independently of how much or how little of this value falls to the share of the direct producers of these commodities. So far as any problem exists here, it coincides with the general problem: Where does the money required for the circulation of the commodities of a country come from?” (p 337)*

It does, however, appear as a problem for capitalist production. That is because the capitalist appears to be the starting point. The worker has money in wages to throw into circulation, but only because they have been paid those wages from the capital of the capitalist, just as it is the capitalist who provides the capital to buy the means of production.

All purchases then come from only one of two sources. Either from the workers, from their wages, but these are only a secondary source, because the wages themselves come from capital, or else from capital itself. That includes all those with whom capital shares its spoils, e.g. the landlord's rent, the money-capitalist's interest, the merchant capitalist's profit, and the capitalist state's taxes.

“The capitalist class remains consequently the sole point of departure of the circulation of money. If they need £400 for the payment of means of production and £100 for the payment of labour-power, they throw £500 into circulation. But the surplus-value incorporated in the product, with a rate of surplus-value incorporated in the product, with a rate of surplus-value of 100%, is equal in value to £100. How can they continually draw £600 out of circulation, when they continually throw only £500 into it? Nothing comes from nothing. The capitalist class as a whole cannot draw out of circulation what was not previously thrown into it.” (p 338)

This is not a question about the velocity of money, or the rate of turnover of capital discussed earlier. Nor is it a question of the circulation of value, or the source of surplus value. It is a question of where the money that is the equivalent of this value itself comes from. We know that a given amount of money, say £500, can circulate £5,000 of commodities, if it is exchanged ten times a year. Similarly, that £500 of money-capital can set in motion £5,000 of productive-capital if it is turned over ten times a year.

Rather this is assuming that all these other factors remain constant, and asking the question where the amount of money comes from. In other words, if £500 was required before, and £600 is required now, where does this additional £100 come from?

*“Indeed, paradoxical as it may appear at first sight, it is the capitalist class itself that throws the money into circulation which serves for the realisation of the surplus-value incorporated in the commodities. But, **nota bene**, it does not throw it into circulation as advanced money, hence not as capital. It spends it as a means of purchase for its individual consumption. The money is not therefore advanced by the capitalist class, although it is the point of departure of its circulation.” (p 338-9)*

This is only true if we are talking, as Marx is here, about a situation of simple reproduction. Where we are talking about expanded reproduction, then a portion of society's surplus product has to exist in the form of the constant capital, and means of subsistence, that will be used to expand production. The money advanced to buy this additional productive capital can only be advanced as additional money-capital.

Given that we are talking only of simple reproduction, the situation is this. A capitalist starts a business with £5,000 of capital. They buy £4,000 of means of production, and £1,000 worth of labour-power. So, this £5,000, which they had in its money form, has now been advanced, and is out there circulating, and consequently can come back to them to buy their commodities when they are put up for sale. However, as a capitalist, he expects to make a profit. This comes from the fact that the labour-power he buys is exploited at a rate of 100%. So, it produces £1,000 of surplus value.

Looking at the situation then, he has put £5,000 into circulation. £4,000 is in the hands of the producers of means of production. The £1,000 he paid as wages has been spent by his workers, to buy necessities, and is in the hands of the suppliers of means of subsistence. Of course, the producers of these means of production and subsistence will in turn have paid out money for wages, and for means of production themselves.

The fact, remains that £5,000 of money has been put into circulation by our capitalist and can return to buy his commodities. But, with the £1,000 of surplus value, created by his workers, those commodities now have a value of £6,000, leaving a shortfall of £1,000.

The answer to where this additional money, required to purchase these commodities, comes from requires us to take a step backwards. Because it takes a year for his commodities to come on to the market, and provide him with an income, he must have additional funds for his own consumption during that period. As well as the £5,000 of money he advances as capital, he requires an additional sum of money to spend as revenue to cover his own personal consumption. If his own consumption requirements come to £1,000, and we know they do because we have assumed simple reproduction where all surplus value is unproductively consumed, then he will have also, during the year, put this additional £1,000 into circulation, as he has bought the items required for his own consumption.

This £1,000 is not capital. It is not used capitalistically, to buy productive-capital. It is merely money used to buy commodities for individual consumption. The £1,000 of commodities he buys with this money themselves comprise a part of the society's total surplus product.

So, the total amount of money he has put into circulation is £6,000; £5,000 advanced as money-capital, £1,000 spent to buy commodities. Consequently, this £6,000, now in circulation, can return to him to buy the commodities he throws into the market. Of that

£6,000, £5,000 go to replace the productive-capital, and £1,000 is available to him once again to fund his own personal consumption for the following year.

“And henceforth this operation is repeated every year. But beginning with the second year, the £1,000 which he spends are constantly the converted form, the money-form, of the surplus-value produced by him. He spends them annually and they return to him annually.”
(p 339)

If his capital turned over more frequently than once a year that wouldn't change things, but would mean he would need less money to cover his personal consumption, just as he would need to advance a smaller sum of money-capital to buy productive-capital. He would throw the same amount of money into circulation in total, its just that it would keep coming back to him faster, but in smaller amounts, for him to spend it again.

But, this has still not actually answered the question of where the money itself has come from. The question of where the additional money comes from has been dissolved because Marx has demonstrated that it comes from the same place that all of the other money comes from. Here the capitalist threw the additional £1,000 in to cover their expenditure. Yet, this simply poses the question where did this £6,000 come from?

In *Volume I*, it was demonstrated how the process of primary accumulation of capital occurred. But, this is something different. This is not a question about the source of capital, but the source of the money that circulates within the economy. Understanding that involves going back to Marx's explanation of what money is, and how it develops.

Suppose A and B both work for 1,000 hours. They can exchange the product of this labour. If they do additional work, working 2,000 hours instead, it is obvious that they can still fully exchange the product of this labour. The difference is that both now obtain twice as many use values as they did before.

Now, money itself assumes the form of a commodity. Its peculiar nature is that it is the commodity which acts as the universal equivalent form of value. The value of all other commodities can be expressed as a certain quantity of it. Suppose then that the money-commodity is gold, and that above, A produces potatoes and B gold. A's 1,000 hours produces 1,000 kilos of potatoes, and B's 1,000 hours produces 1,000 grams of gold. Then 1 kilo of potatoes will exchange for 1 gram of gold. Now, suppose that for subsistence 1,000 kilos of potatoes are required. A is okay, they can produce enough for their own subsistence. But, by working 2,000 hours, they can produce enough for their subsistence and an equal amount of surplus, which can be sold to B.

If B works only 1,000 hours, they will produce enough gold to buy this surplus 1,000 kilos of potatoes, and thereby cover their own subsistence needs. At the end of all this, all of the potatoes produced have been consumed. The necessary labour-time, the time needed to ensure the producers could live amounted to 2,000 hours, but 3,000 hours were worked, 1,000 hours being surplus labour. That surplus labour now exists in the form of a social surplus. The social surplus is in the form both of a commodity and of money, because the commodity gold, is money!

If the gold producers worked 2,000 hours then this means that 2,000 hours of surplus labour-time have been worked. It assumes the form of 2,000 grams of gold.

As more labour-time is expended by society, i.e. more value is created, then in any society that produces commodities, and circulates them using money, a portion of that expenditure of social labour-time has to go to the production of the money commodity itself. Commodity producers exchange their commodities for gold directly with the gold producers, because

the former want gold to be able to buy other commodities, and the latter want commodities to consume productively and unproductively. By this means, gold enters circulation as money, because the commodity producers then use the gold they have obtained, to buy other commodities.

In the example above, the gold exchanged on a one to one basis with the potatoes. However, as we know, the money does not actually do this, but continues to circulate and perform many transactions. That is perhaps as well. If not, and the gold was worn out each year, the gold produced and thrown into circulation would have to equal half of total social production. For example, above 1,000 kilos of potatoes and 1,000 grams of gold, each with a value of 1,000 hours.

But, in fact, the gold, as money, is not consumed, whereas the commodities it buys are. The gold used to buy the potatoes can be used again to buy other commodities worth 1,000 hours, and the new recipients of the gold can use it, in turn, to make their own purchases.

The only way that the gold money is then “consumed” is by its wear and tear, as it passes from hand to hand. If society's total production remained at the same level, therefore, the only additional gold money that would be required would be that needed to replace that worn out. The society would have an amount of surplus product produced and consumed each year, and a portion of that surplus product would always be in the form of gold.

Suppose, for example, that a 1 gram gold coin circulates ten times, so it could buy 10 hours of value in total. Further, suppose that instead of just potatoes we have a range of commodities produced that comprise the means of subsistence, all of which are exchanged. Now, only a tenth of the gold, previously required, is needed, and only a tenth of available social labour time is expended on it. Now, necessary labour amounts to just 1100 hours.

These 1100 hours are worked producing means of subsistence and 100 hours producing gold. Surplus labour equal to 100 hours has been worked, and this social surplus comprises 100 grams of gold.

The gold producers use this 100 grams of gold to buy the 100 hours worth of means of subsistence they need. Having put this 100 grams of gold into circulation, in buying means of subsistence, these other producers then use this money to buy commodities themselves from other producers. One hundred hours of production of commodities were exchanged directly with the gold producers, and the other 1,000 hours worth of commodities are then circulated by the 100 grams of gold, thrown into circulation.

“The capitalists producing gold possess their entire product in gold — that portion which replaces constant capital as well as that which replaces variable capital, and also that consisting of surplus-value. A portion of the social surplus-value therefore consists of gold, and not of a product which is turned into gold only in the process of circulation. It consists from the outset of gold and is thrown into circulation in order to draw products out of it. The same applies here to wages to variable capital, and to the replacement of the advanced constant capital. Hence, whereas one part of the capitalist class throws into circulation commodities greater in value (greater by the amount of the surplus-value) than the money-capital advanced by them, another part of the capitalists throws into circulation money of greater value (greater by the amount of surplus-value) than that of the commodities which they constantly withdraw from circulation for the production of gold. Whereas one part of the capitalists constantly pumps more money out of the circulation than it pours into it, the

part that produces gold constantly pumps more money into it than it takes out in means of production.” (p 340)

The fact that, in practice, gold is often produced in one country and shipped to another doesn't change this. It only means that the country producing the gold uses it as money to buy commodities, such as linen from the countries to which it ships the gold. Suppose, country A expends 500 hours producing linen, which it sells to country B, in return for 500 hours worth of gold. Of this 500 hours, 400 hours may be to cover the wages of the workers and 100 hours constitute the surplus value. Similarly, of the gold received, let us say it is 500 grams, 400 grams would be given to the workers as wages, and 100 grams would be appropriated as surplus value. This 500 grams of gold would then circulate within country A, as the workers spent their 400 grams on means of subsistence, and the capitalists spent their 100 grams on a combination of productive and unproductive consumption.

It might be thought that if only an amount of gold is imported that is equivalent to goods exported, here linen, this will not be enough to provide all the money required to circulate the mass of commodities within the economy, let alone to pay for imports of commodities from other countries. However, two things have to be born in mind here. Firstly, the amount of gold required for circulation is only a fraction of the total value of commodities because of the velocity of circulation. Secondly, the gold once put into circulation, remains there from year to year, only minus the wear and tear. The only gold needed to be imported then is that to replace the gold worn out.

“According to our assumption the annual production of gold, £500, just covers the annual wear of money. If we keep in mind only these £500 and ignore that portion of the annually produced mass of commodities which is circulated by means of previously accumulated money, the surplus-value produced in commodity-form will find in the circulation process money for its conversion into money for the simple reason that on the other side surplus-value is annually produced in the form of gold. The same applies to the other parts of the gold product of £500 which replace the advanced money-capital.” (p 342)

Here we can treat this as if all the money required had to be produced each year. This gold is produced by workers, who provide all of the money spent by capitalists, either to replace constant capital, to cover wages, or the capitalists' expenditure of surplus value. But, this gold also reproduces the constant capital, and the variable capital, as well as providing the surplus value of the gold producer.

In the first instance, the advance of capital was made by the gold producer to buy constant and variable capital, but, once the gold has been produced, and sold, the return of this value amounts to the workers producing or maintaining the means by which production continues.

“The advance on the part of the capitalist appears here, too, merely as a form which owes its existence to the fact that the labourer is neither the owner of his own means of production nor able to command, during production, the means of subsistence produced by other labourers.” (p 342)

Changes in the rate of turnover mean that the amount of money-capital required varies, and so there has to be some elasticity in the money supply. This is achieved through fluctuations in the amount of money in circulation, and that held in hoards and reserves. But, as demonstrated above, changes in the rate of surplus value, i.e. changes in the division of the total social labour between wages and surplus value, has no effect on the amount of money required.

Suppose we have an economy where we have only a division between wages and surplus value, i.e. we discount constant capital. The total value of output is £5,000 divided £2,000 to wages, and £3,000 to surplus value. Wages rise to £4,000. But, by the same token surplus value falls to £1,000. The total amount of value has not changed, no more nor less labour-time has been expended.

Consequently, the amount of money required remains the same. True, the capitalist now needs to lay out £4,000 of money-capital compared to £2,000 previously, but now, only £1,000 of money is required to realise the surplus value, to be spent by the capitalist, rather than the £3,000 required previously. This is why as Marx, Ricardo and Smith (in some of his writings) recognised, it is not wages that determines prices, or wage rises that cause inflation.

Marx goes on to deal with this argument, that had been raised by the Owenite, Weston, within the ranks of the First International. The more extended argument, detailing that debate is given in "*Value, Price and Profit*".

Marx continues, considering the argument about higher wages. Those proposing this argument say,

"This causes a greater demand for commodities on the part of the labourers. This, in turn, leads to a rise in the price of commodities.—Or it is said: If wages rise, the capitalists raise the prices of their commodities.—In either case, the general rise in wages causes a rise in commodity prices. Hence a greater amount of money is needed for the circulation of the commodities, no matter how the rise in prices is explained." (p 344)

Marx easily dismisses this argument. Higher wages will mean workers demand more necessities, and might demand new commodities, and this may cause their price to rise, in the short-term. But, the fall in surplus-value means capitalists have less money to spend on luxuries. The fall in demand for these luxuries causes their prices to fall. Profits for producing necessities rises, and for producing luxuries fall. That means more capital will move to producing necessities and less to producing luxuries. This continues until the rate of profit is equalised in both sectors again. The consequence is that the supply of necessities rises, and so their prices fall back to the original level, and the supply of luxuries falls, pushing the prices of luxuries back up to their original level.

The overall price level has not changed, but more social labour-time is now devoted to producing necessities, and less to luxuries.

Alternatively, workers themselves may spend some of their higher wages on luxuries. In that case, they exert less pressure on the demand for necessities, and simply replace the demand for luxuries that previously came from capitalists.

"More luxuries than before are consumed by labourers, and relatively fewer by capitalists. Voilà tout. After some oscillations the value of the mass of circulating commodities is the same as before. As for the momentary fluctuations, they will not have any other effect than to throw unemployed money-capital into domestic circulation, capital which hitherto sought employment in speculative deals on the stock-exchange or in foreign countries." (p 344)

Part of the argument, of those who believe that wages determine prices, is that price is comprised of the costs of production – primarily here wages – plus an amount of profit. So, if wages rise, prices rise as a result. But, again, this is not true as Marx shows.

Firstly, if capitalists could simply increase prices at will, in that way, they would do so whether wages had risen or not. But, capitalists cannot simply raise prices. Conversely,

wages would never rise when commodity prices fell, and

*“The capitalist class would never resist the **trades’ unions**, if it could always and under all circumstances do what it is now doing by way of exception, under definite, special, so to say local, circumstances, to wit, avail itself of every rise in wages in order to raise prices of commodities much higher yet and thus pocket greater profits.” (p 344)*

The argument that higher wages cause inflation, *“is a bugbear set up by the capitalists and their economic sycophants.” (p 344)*

The basis of the argument rests on three foundations. Firstly, the money put in circulation is determined by the total value of commodities to be circulated. If more commodities are to be circulated, or if the same number of commodities are circulated, but their value has risen, then more money has to be thrown into circulation. The latter would be the case if productivity had fallen, or if, for example, there had been a bad harvest, pushing up food and raw material prices. This increase in money would then mean that all prices, including wages, might rise.

“The effect is then confused with the cause. Wages rise (although the rise is rare, and proportional only in exceptional cases) with the rising prices of the necessities of life. Wage advances are the consequence, not the cause, of advances in the prices of commodities.” (p 345)

Secondly, a rise in some wages might cause a rise in some prices. Whether or not this is possible depends on a number of factors, such as the price elasticity of demand of the products concerned. Products that are inelastic can enjoy a rise in price without a damaging fall in demand, and vice versa. Whether a product has inelastic demand or not depends on a range of factors such as whether its a necessity, if it has substitutes, how much competition there is between suppliers, and so on. But, also, for some products, wages comprise a small element of costs, so a wage rise might be easily absorbed.

But, in any case, the consequence of a rise in some prices here is a fall in the prices of other goods, as effective demand rises for one and falls for the other. Finally,

“In the case of a general rise in wages the price of the produced commodities rises in branches of industry where the variable capital preponderates, but falls on the other hand in branches where the constant, or fixed, capital preponderates.” (p 346)

The situation can be understood by considering the position of Robinson Crusoe. Suppose Robinson works for 100 hours during the week. Of this, he spends 80 hours producing the food, clothing and shelter he requires for his subsistence. It leaves him 20 hours free, as surplus labour. In capitalist terms the former can be considered his wages, and the latter his profits. Now, he might decide to increase his wages, by devoting 90 hours to meeting his consumption needs. But, the total value of his output will remain 100 hours as before. Its just that it is divided now into 90 hours of wages and 10 hours of profit.

As Marx sets out in *Capital I*, examining *the law of value* in relation to Robinson, he proceeds by keeping a ledger of the use values he wants to produce, and how much time each requires for its production, thereby determining the value of each product, and how much of every other product he must forego to obtain it. In this economy, prices are immediately equated to values by the amount of time each requires for its production. Suppose then, that Robinson's watch begins to run fast, and that it measures two hours as passing, where in fact, only one has passed. In that case, although Robinson will still only produce 100 hours of value during the week, it will appear to him that each product has become twice as expensive, because its price according to his watch will have doubled.

The fact that he now allocates 90 hours to wages and 10 hours to profits, will not have any material effect on this, it will simply now appear that his wages have risen to 180 hours, and his profits to 20 hours, that the total value of his output has risen to 200 hours, but that he does not obtain any greater quantity of use values. In other words, the effect of his watch running twice as fast as it did previously is to cause an inflation of prices. That in fact, is what happens with actual inflation. It is because, the measure of prices – money – itself becomes devalued.

With the simple circulation of commodities, $C - M - C$, the money form of these commodities is only transient. C assumes the form of M only as part of this exchange, prior to being consumed, just as M is only a means towards the purchase of C , to complete the metamorphosis.

The assumption of the money form is a necessary part of that process. In the same way, under capitalist production, a portion of the capital must always be in the money form, prior to the purchase of productive-capital. Similarly, a portion of surplus-value must always be in the money form, whether it is waiting to be used to buy additional productive-capital, or individual items of consumption for the capitalist.

*“Apart from this, the **circuit of money** — that is, the **return** of money to its point of departure — being a phase of the turnover of capital, is a phenomenon entirely different from, and even the opposite of, the **currency of money**, which expresses its steady departure from the starting-point by changing hands again and again. Nevertheless, an accelerated turnover implies **eo ipso** an accelerated currency.” (p 346)*

In other words, we have seen that the circuit of money capital proceeds, $M - C \dots P \dots C' - M'$. But, the currency of money involves money spent by A passing to B , who passes it to C and so on. However, if capital turns over more quickly, by its nature, this means that money is also circulated faster. Instead of a capitalist keeping £5,000 of money-capital on hand, they may require only £1,000, releasing £4,000 to circulate. The £1,000 returns five times faster, and is thereby put back into circulation that much sooner, and more often.

This applies whether it is a more rapid turnover of either the constant or the variable capital, the same sum of money being used to purchase an increased value of commodities. Similarly, the faster the turnover, the more often the surplus value is realised, and, therefore, this amount of money being thrown back into circulation to buy additional productive-capital or items of individual consumption.

The opposite does not necessarily apply. An increase in the velocity of money does not imply an increase in the rate of turnover of capital. But, it might. If it is brought about because of an improvement in the payment systems, then this might mean that the circulation time falls, because payment for goods sold is faster, making that money available to purchase productive-capital sooner.

Capitalist production, based on wage labour, assumes a sufficient money hoard to enable the payment of wages.

“This is the historical premise, although it is not to be taken to mean that first a sufficient hoard is formed and then capitalist production begins. It develops simultaneously with the development of the conditions necessary for it, and one of these conditions is a sufficient supply of precious metals. Hence the increased supply of precious metals since the sixteenth century is an essential element in the history of the development of capitalist production. But so far as the necessary further supply of money material on the basis of capitalist production is concerned, we see surplus-value incorporated in products thrown

into circulation without the money required for their conversion into money, on the one hand, and on the other surplus-value in the form of gold without previous transformation of products into money.

The additional commodities to be converted into money find the necessary amount of money at hand, because on the other side additional gold (and silver) intended for conversion into commodities is thrown into circulation, not by means of exchange, but by production itself.” (p 348)

II. Accumulation and Reproduction on an Extended Scale

“Since accumulation takes place in the form of extended reproduction, it is evident that it does not offer any new problem with regard to money-circulation.” (p 348)

Accumulation occurs because a portion of the realised surplus-value assumes the form of money-capital, as opposed to simply money, used for unproductive consumption, by the capitalist. So, the question of where the money-capital comes from is already resolved. The question then is only that previously asked in relation to simple reproduction, which is where the money itself comes from. With simple reproduction, the total amount of value, to be circulated, in the economy, remains constant, and it was seen that the proportions in which this is divided, i.e. how much is wages and how much is surplus value, does not change how much money is required to achieve that. The only requirement for additional money is to replace that used up by wear and tear.

But, with expanded reproduction, the actual amount of value to be circulated itself increases. So, money, in addition to that to cover wear and tear, has to be put into circulation.

The increase in the value of commodities being circulated is not due to a rise in their prices. It is due to an increase in the quantity of commodities being circulated. That increase is not due to a rise in productivity, which would have resulted in a greater quantity of commodities but the same amount of value. It is due to an increase in the amount of production – capital employed.

There are three means of providing the additional money required.

1. Increase the velocity of circulation
2. Make use of existing money hoards
3. Buy additional gold from producers

The first is achieved by a number of methods. An improvement in economic conditions may itself speed up circulation, as people pay more promptly etc., and improvements in transport and distribution reduce circulation time. But, improvements in banking, the ability to net off payments via clearing houses, the increased use of commercial credit, etc. will all increase money velocity, so that a given amount of money will facilitate a larger volume and value of transactions.

The second may again arise automatically from an increase in trade. A shop may accumulate money in its till, which it will use to replenish its stock when it sees the need to do so. When trade improves, it may use that money more frequently to buy in stock. But, in general, money may sit idle in bank deposits when trade is depressed, and only be drawn into activity when trade improves. Small cash balances owned by workers and small

traders may be inadequate to finance productive activity, but when trade improves, banks may amalgamate them into larger funds, able to be used productively.

Finally, where these methods have still not been adequate, the value of money tokens will rise above the value of the money-commodity – here gold. In that case, an incentive arises to import gold to use as money. The fact that capitalism has to expend considerable social labour-time in the production of precious metals for this purpose, represents a large waste of social wealth. That labour-time could have been used to produce real wealth. It is a big overhead, or faux frais of production, as Marx calls it, for capitalism. So, the more it is able to avoid it, the better. The improvements in banking etc. that speed up the velocity of circulation, the introduction of credit and paper money tokens, reduce the need for precious metals, and thereby free up labour-time for other activities.

*“To the extent that the costs of this expensive machinery of circulation are decreased, the given scale of production or the given degree of its extension remaining constant, the productive power of social labour is **eo ipso** increased. Hence, so far as the expediences developing with the credit system have this effect, they increase capitalist wealth directly, either by performing a large portion of the social production and labour-power without any intervention of real money, or by raising the functional capacity of the quantity of money really functioning.” (p 350)*

Marx points out that it is, therefore, absurd to claim that capitalist production could continue on its present scale without credit.

Marx also deals here with the idea that capital was forced into expansion under all circumstances, particularly where the rate of profit was rising. So, he begins here by looking at the way capital accumulates as realised surplus value in money hoards.

“We have now to investigate the case in which there takes place no real accumulation, i.e., no direct expansion of the scale of production, but where a part of the realised surplus-value is accumulated for a longer or shorter time as a money-reserve fund, in order to be transformed later into productive capital.” (p 351)

Such a money hoard can arise because surplus gold has been imported. The products exchanged for the gold obviously no longer circulate in the home market as an equivalent to that gold. They are now in the gold exporting country. The capitalist has sold commodities to the gold exporting country and received gold in exchange. A portion of this gold represents the realised surplus value in the commodities. This portion represents money over and above the money-capital, the capitalist has laid out.

A portion of the additional money goes to cover the money-capital laid out for the reproduction of the means of production and labour-power, and is thereby thrown into circulation. The additional money that is the equivalent of the surplus value, however, may or may not all be thrown into circulation. A portion may go to cover unproductive consumption, and the rest may go to accumulation, but not necessarily. A portion may simply be hoarded. In fact, if we look at the situation as regards capital, as a whole, it is inevitable that this additional money will be divided into a portion for unproductive consumption, a portion for accumulation, and another portion that is hoarded, as well as that which goes to reproduce the productive capital.

“For it has not been premised in the least that one part of the capitalists accumulates money-capital, while the other consumes its surplus-value entirely, but only that one part does its accumulating in the shape of money, forms latent money-capital, while the other part accumulates genuinely, that is to say, enlarges the scale of production, genuinely

expands its productive capital. The available quantity of money remains sufficient for the requirements of circulation, even if, alternately, one part of the capitalists accumulates money, while the other enlarges the scale of production, and vice versa.” (p 352)

In other words, it will always be the case that taken as a whole, some capitalists will have money-capital, which, for one reason or another, they will not be ready to put to work productively, and which they do not require for unproductive consumption. By the same token, there will be others who will want to employ money-capital productively, over and above what they have at their disposal. In fact, it is the interaction between this supply and demand for money-capital which determines interest rates.

“But the difficulty arises when we assume not an individual, but a general accumulation of money-capital on the part of the capitalist class.” (p 352)

Assuming only the existence of the capitalist and working classes, then the money paid out as wages – variable capital - to workers, returns in its entirety to capital, in return for means of subsistence. However many times this is repeated, the workers always end up only able to afford the means of subsistence. If we take an economy where we have:

c 1000 + v 1000 + s 1000

the workers wages equal £1,000. They can only ever buy back the value of their own labour-power. Which means they cannot buy the means of production, c, let alone the surplus product, s.

If the capitalists, as a whole, then cannot accumulate money-capital, by selling more to workers than they have paid them in wages, how do they realise this additional money-capital? This, of course, is a very important and topical question. How indeed was, particularly the US, and UK capital, during the 1980's and 90's to accumulate money-capital, by selling to its workers, who made up the bulk of its consumers, more than it paid them in wages, particularly as those wages were stagnant or falling?

“They would all have to sell a portion of their product without buying anything in return. There is nothing mysterious about the fact that they all have a certain fund of money which they throw into circulation as a medium of circulation for their consumption, and a certain portion of which returns to each one of them from the circulation. But in that case this money-fund exists precisely as a fund for circulation, as a result of the conversion of the surplus-value into money, and does not by any means exist as latent money-capital.” (p 353)

In reality, the latent money-capital, which takes the form of a hoard, takes a number of forms, some of which are only apparent. For example, with fractional reserve banking, only a tiny proportion of deposits are retained as money. Banks know that, at any one time, depositors will only want 10% of their deposit. So, the bank lends out the other 90%, receiving interest on those loans. The loans themselves appear as deposits in the accounts of those to whom the money has been lent. So, although the deposit has the appearance of a money hoard, the money itself, in large part, has been thrown back into circulation.

Similarly, money can be hoarded by purchasing government bonds.

“These are not capital at all, but merely outstanding claims on the annual product of the nation.” (p 353)

In the same way, commercial bonds are not capital, but a similar claim on the future revenue of the company issuing them. Money invested in shares is not itself capital, but only fictitious capital, whose value can be wholly removed from the value of the underlying capital. Like a bond, it gives the right to a share of the firm's future surplus value.

“There is no accumulation of money in any of these cases. What appears on the one side as an accumulation of money-capital appears on the other as a continual actual expenditure of money. It is immaterial whether the money is spent by him who owns it, or by others, his debtors.” (p 353)

There is no mystery about how capital realises surplus value, where the capitalists themselves consume the surplus product in the form of either productive or unproductive consumption. We have seen already that the capitalists themselves throw into circulation the money, and money capital required, as the counterpart of the surplus product. The question here is, how can money hoards arise where not all of that surplus product is consumed by capitalists, and where workers wages can never be high enough to absorb it?

Returning to the question above, we can see how this relates to the 1980's. With the onset of the long wave *Winter*, around 1986 -7, the rate of profit began to rise globally. A higher rate of profit, in conditions of relatively weak economic activity meant money hoards rose, as the demand for money-capital fell relative to its supply. This caused global interest rates to enter a secular down trend that persisted until around 2013. However, the accumulation of an increasing money hoard assumes that the surplus value itself can be realised. For such money hoards to rise, capital must be able to sell without buying. How is this possible, especially when wages are falling. The answer is debt.

China became a major supplier of cheap commodities, and accumulator of money-capital. It supplied many of these commodities to the US and Europe. In order to sell them and realise surplus value, it required several things. It required workers to be able to buy them, i.e. they had to have money; it required merchant capital to distribute them; and it required the services of financial capital to assist with the concomitant capital flows.

As has already been hinted at, and as will be detailed later, merchant capital fulfils a useful function for productive-capital, by reducing its costs and time of circulation. Financial capital fulfils a similar function. Both thereby obtain a share in the surplus value produced by productive-capital.

Suppose then that we have commodities produced by Chinese capitalist A, and sold in Wal-Mart.

$c\ 1000 + v\ 1000 + s\ 1000 = C\ 3000.$

However, in order to realise this \$1,000 of surplus value A has to sell them. To establish stores in the US would be very expensive, and Wal-Mart can provide this function far more efficiently. Suppose to sell these commodities, A would have to spend \$600, which would be a necessary cost, but as we have seen, in previous chapters, add nothing to the value of the commodity. By contrast, Wal-Mart can do it for just \$500.

So, A sells the commodities to Wal-Mart for \$2,500. Wal-Mart then sells them for their full value of \$3,000. A has realised \$500 of the surplus value, whereas otherwise they would only have realised \$400. Wal-Mart then obtains a share of the surplus value created by A's Chinese workers. Suppose that Wal-Mart do this with 1,000 similar suppliers. Ignore the fixed costs in stores etc. They will then lay out $1,000 \times \$2,500 = \2.5 million for this

commodity-capital, and say \$100,000 in wages making their total costs \$2.6 million. But, their revenue will be $1,000 \times \$3,000 = \3 million giving a profit of \$400,000.

However, in the process, this has created jobs and wages for workers in the Wal-Mart store, as well as \$0.4 million of profits, which itself circulates in the economy. This in turn provides some of the wages required to purchase the imported Chinese goods. In similar fashion, A and other Chinese producers, pay fees to financial capitalists in the US, in payment for services resulting from capital transactions. That income, paid as wages and profits, again provides the money required for the purchase of Chinese goods.

To the extent that these are transactions between capital and capital they produce no surplus value. Only where capital exchanges with revenue, for example the provision of financial services as commodities to individuals, is surplus value produced.

However, this cannot account for all of the imports. The difference, which takes the form of a trade gap, and budget deficit, is itself in turn financed out of the money hoard. At a national level it exists as a trade deficit, financed on capital account, at an individual level it assumes the form of mushrooming private debt. Earlier, it was seen that the surplus value created by one firm could be lent to some other firm. Here, the surplus value is lent to workers.

It is clearly an unsustainable situation, which periodically manifested itself in increasingly violent financial crises, the latest, but by no means the last of which was in 2008.

“On the basis of capitalist production the formation of a hoard as such is never an end in itself but the result either of a stagnation of the circulation — larger amounts of money than is generally the case assuming the form of a hoard — or of accumulations necessitated by the turnover; or, finally, the hoard is merely the creation of money-capital existing temporarily in latent form and intended to function as productive capital.” (p 353)

The money lent to workers during the period meant that for some of them, they were essentially putting into hock the assets they had built up during the previous long wave boom - their houses, pension funds, share holdings etc. All of which acted as collateral for their borrowing. For others, it simply meant turning themselves into debt slaves, because they have essentially committed large amounts of their future labour-time to repaying capital for the money it has lent them. That in itself implies a problem for capital. It has financed the realisation of its current output at the expense of being able to realise its future output.

In the period following the onset of the long wave boom, since 1999, both the rate of profit and the volume of profit increased, though this has probably ended from around 2012. On the one hand, this provides the basis for a solution, on the other it exacerbates the problem.

China has increased production further and extended its trade across the globe, as well as developing its domestic market. On this basis, the demand for productive capital rises, to use money hoards. On the other, the volume of surplus value has risen faster than the demand for productive-capital, as the US and Europe have failed to develop their productive-capital, having become more dependent upon merchant and money-lending capital, and hampered by high debt levels, that has gone to finance consumption rather than investment.

Incidentally, this is the main problem with Reinhart and Rogoff's thesis. Economies in the past have managed high levels of growth where they have had high levels of debt, because the debt has been used to finance investment.

The US, UK and other western economies suffered because rather than using a glut of global money-capital, and consequent low interest rates, to finance a restructuring of their economies, in the 1980's and 90's, they followed the small capital mentality of Reagan and Thatcher, resting upon the economic interests of those sections of society, and of the merchant and money-lending capitalists, who made big profits, and increased their power. That led to an economic model based on low wages and high debt that militated against the necessary focus on investment and restructuring.

The series of financial crises, which are the product of this, will only terminate when the underlying disproportion is resolved. That will involve wholesale destruction of the fictitious capital built upon it, in the form of inflated share, bond and property prices, and the ability then to utilise money hoards for the expansion of productive-capital.

Chapter 18 - Introduction

I. The Subject Investigated

“The direct process of the production of capital is its labour and self-expansion process, the process whose result is the commodity-product and whose compelling motive is the production of surplus-value.” (p 355)

In *Volume I*, Marx analysed fundamental categories, primarily the commodity and commodity exchange and production. From this he derived his analysis of capital. That analysis is conducted at the level of “*many capitals*”. In other words, he looks at how capital is produced and reproduced at the level of the individual firm. In *Volume II*, his analysis so far has dealt with the circulation of capital rather than commodities, and with capital in circulation rather than in production. But, it has continued to be an analysis at the level of “*many capitals*”, rather than “*capital in general*”. In other words, it has been an analysis of the turnover periods etc. of individual capitals. Now, Marx moves to examine how this circulation of individual capitals is an integral part of the circulation of capital in aggregate, how the circulation of one capital intertwines with the circulation of others.

“Every individual capital forms, however, but an individualised fraction, a fraction endowed with individual life, as it were, of the aggregate social capital, just as every individual capitalist is but an individual element of the capitalist class. The movement of the social capital consists of the totality of the movements of its individualised fractional parts, the turnovers of the individual capitals. Just as the metamorphosis of the individual commodity is a link in the series of metamorphoses of the commodity-world — the circulation of commodities — so the metamorphosis of the individual capital, its turnover, is a link in the circuit described by social capital.” (p 356)

This involves a qualitative change in the analysis. In order to understand the process as a whole, it is now necessary not to consider the circulation of capital and the circulation of commodities as two distinct circuits, but to consider them together.

“The circuit of the individual capitals in their aggregate as social capital, hence considered in its totality, comprises not only the circulation of capital but also the general circulation of commodities.” (p 356)

At various points, within the circuit of capital, a circulation of commodities was also initiated, but these were ignored, because the goal was to analyse the circuit of the individual capital. For example, starting with $M - C(MP + L)$, variable capital was transformed into labour-power. The worker was paid wages, and these wages were used to buy commodities. But, here the worker sells a commodity, labour-power, to capital. The wages that the capitalist pays to the worker are not capital, but only money, the general commodity, the universal equivalent form of value. This is not a circuit of capital, but of commodities. The capital does not pass from the hands of the capitalist to the worker in this exchange, but remains in the hands of the capitalist, now as labour-power, productive-capital, rather than money-capital. It has simply changed its form. Similarly, the worker does not exchange capital for the commodities they buy, but only money. Once again, in each of these transactions, $M - C$, what is involved is not a circuit of capital, but of commodities (if we consider especially that money itself is a commodity, the universal equivalent form of value).

This can be seen in the diagram presented in *Chart 1*, at the start of this book. The circuit of capital is shown in red, and of money in green. Here capital is metamorphosed in its circuit from money, into commodities (labour-power, and means of production), which constitute the productive-capital, K. As part of this metamorphosis, capital sheds its money form. The money is paid as wages, and at this point ceases being capital. The capital now assumes the form of productive-capital in the hands of the capitalist. The worker then uses the money to buy the commodities they need to reproduce their labour-power, which can be seen by the green arrows via bank deposits to, C', which represents commodity-capital, already including surplus value. But, in the same way that in selling labour-power to the capitalist, the worker does not sell, capital, but only a commodity, in buying commodities from other capitalists, they do not buy capital, but only commodities, exchanging the general commodity, money, for them.

But, when the worker buys commodity X with their wages, this ties in with the fact that commodity X, for its producer is commodity-capital. It does form part of their circuit of capital. The money they receive for it, from the worker, realises its capital-value, as money-capital, which then forms a part not of the circulation of commodities, but of the circuit of capital for the producer of X. For the producer of X, the metamorphosis is the opposite of that described above. They do not sell capital to the worker but commodities. They obtain money from the worker in return, and by this exchange, the commodity-capital is metamorphosed into money-capital, or at least potential money-capital.

But, similarly, the money laid out by the first capitalist, $M - C(MP + L)$, on means of production, involves the circulation of commodities. Capitalist 1 hands over money to capitalist 2, for means of production, which are themselves commodities. But, there is a difference here to the former case. What capitalist 1 exchanges here is not money, as the worker does in buying means of subsistence. Capitalist 1 exchanges money-capital, for productive-capital, in the form of means of production. The commodities they buy form a part of the commodity-capital of capitalist 2. In other words, what we have here is an exchange of capital for capital. For Capitalist 1, their capital value is metamorphosed from money-capital into productive-capital, whereas for Capitalist 2, their capital value is metamorphosed from the form of commodity-capital into money-capital.

Finally, Capitalist 1 obtains surplus-value. A portion of this is spent unproductively, in the purchase of commodities for personal consumption. These form, as with the workers wages, a part of the circulation of commodities. What is spent is merely money, revenue not capital. But, the other portion, which is advanced to buy productive-capital, is an advance of capital not an expenditure of money.

Speaking of the analysis so far, Marx writes,

“But in both the first and the second Parts it was always only a question of some individual capital, of the movement of some individualised part of social capital.

However the circuits of the individual capitals intertwine, presuppose and necessitate one another, and form, precisely in this interlacing, the movement of the total social capital. Just as in the simple circulation of commodities the total metamorphosis of a commodity appeared as a link in the series of metamorphoses of the world of commodities, so now the metamorphosis of the individual capital appears as a link in the series of metamorphoses of the social capital. But while simple commodity circulation by no means necessarily comprises the circulation of capital — since it may take place on the basis of non-capitalist production — the circuit of the aggregate social capital, as was noted, comprises also the commodity circulation lying outside the circuit of individual capital, i.e., the circulation of commodities which do not represent capital.

We have now to study the process of circulation (which in its entirety is a form of the process of reproduction) of the individual capitals as components of the aggregate social capital, that is to say, the process of circulation of this aggregate social capital.” (p 357-8)

II. The Role of Money-Capital

The study of individual capitals demonstrated that money-capital is the form capital first manifests itself. It is in the money form that capital is first advanced to buy productive-capital, and in order for productive-capital to be reproduced, money-capital must continue to be periodically laid out for its purchase. How much money-capital must be advanced to set in motion a given quantity of productive-capital depends on the turnover of the capital and the ratio between the working period and the circulation period.

The reality of capitalist production is that it is continuous and so consequently capital, both at the individual and the aggregate level, always exists in its three forms, money-capital, productive-capital, and commodity-capital, simultaneously.

Commodity production requires commodity circulation, which in turn requires money, both for the expression of price and for circulation. So, capitalist production presupposes capital in the form of money – money-capital, both for the creation of every business and for its continued functioning. That is particularly clear with the circulating capital, which must be continually bought.

But, the scale of production is not determined in any absolute sense by the amount of available money-capital. That is not just a matter of the rate of turnover. It is also a function of what today would be called economies of scale.

For example, the scale of production may increase but no more money-capital laid out, if some natural resource can be harvested. For example, a windmill might harness the free productive power of the wind, a fission reactor that of the atom etc.

Alternatively, the scale of production might rise without laying out additional capital, if existing labour-power is used more extensively/intensively or simply more efficiently, to take advantage of the free productive power of co-operative labour. Even if labour is used more extensively/intensively, resulting in higher wages, (overtime etc.) the additional money-capital laid out will be proportionately less than the increase in production.

Such extensive or intensive methods mean fixed capital is used more effectively, and although it will then wear out more quickly, it will not do so proportionately. Moreover, the increased scale of production means that its value will be returned more quickly, via the sale of commodities, and losses due to depreciation will be reduced, so less rather than more capital has to be advanced for its replacement.

“True enough, the increase in the productive power of labour, so far as it does not imply an additional investment of capital-value, augments in the first instance only the quantity of the product, not its value, except insofar as it makes it possible to reproduce more constant capital with the same labour and thus to preserve its value. But it forms at the same time new material for capital, hence the basis of increased accumulation of capital.” (p 360)

In order to take advantage of these economies of scale, more capital-value absolutely, has to be set in motion, and that includes money-capital. But, that does not mean that more capital-value or money-capital is set in motion relative to the increase in production.

The increase in the absolute quantity of money-capital required by individual capitals poses a problem for private capital, which becomes a fetter on further development. But, as was

shown in *Volume I*, this is overcome first by the centralisation and concentration of capital, and then by the expropriation of private capital by socialised capital, in the form of the joint stock companies and workers' co-operatives.

“If the prices of the elements of production — the means of production and labour-power — are given, the magnitude of the money-capital required for the purchase of a definite quantity of these elements of production existing as commodities is determined. Or the magnitude of value of the capital to be advanced is determined. But the extent to which this capital acts as a creator of values and products is elastic and variable.” (p 361)

The labour-time required to replace worn out coins is a diminution of social production. It is one reason why capital moves to replace it with paper money tokens, credit-money and today electronic money. Today, this money can simply be assumed to exist, because it is produced by central banks, by the fractional reserve banking system, and the quasi bank sector. If the fetish for gold is overcome, and the real nature of money focused upon, i.e. it is merely a representative of social labour-time, then any token, generally accepted, can be used as representative of that social labour-time.

For example, if the total amount of commodities to be circulated, in the economy, amounts to 200 billion hours of labour-time, and each hour is given a notional value of £10, then £2 trillion of money is required. If the money has a velocity of circulation of ten, then £200 billion has to be put into circulation. In effect, this is no different than the situation described by Marx, under socialism, where each individual is given a voucher entitling them to take out of society's store goods with an equivalent value to that they have contributed in hours to that store. Here each money token simply represents an aliquot part of total social wealth. The difference being under capitalism that these tokens can be obtained without performing labour, and can be amassed in great volume by individuals, who can then use them as capital.

It does not matter whether this is in the form of £1 coins, notes of various denominations, credit money, or electronic transfers into accounts. But, similarly – and this applies to the situation under socialism too – if more notes are put into circulation than are required to circulate the value of commodities, the value of these money tokens will fall. Gold continues to be the money-commodity for all the reasons previously set out, it is real money in that sense. But, it only assumes that role in those times of crisis, when the existing money tokens have fallen into disrepute.

Similarly, in Marx's day the money, even as precious metals, was already there, built up over generations, and was either in circulation or residing in hoards.

“It cannot be regarded as a limit set to these things. By its transformation into elements of production, by its exchange with other nations, the scale of production might be extended. This presupposes, however, that money plays its role of world-money the same as ever.” (p 361)

The period of turnover is largely determined by the material conditions of production. But, under capitalist production, large scale operations that have long periods for completion, involve taking out value from the economy without putting value back for prolonged periods.

“Production in such spheres depends therefore on the magnitude of the money-capital which the individual capitalist has at his disposal. This barrier is broken down by the credit system and the associations connected with it, e.g., the stock companies. Disturbances in

the money-market therefore put such establishments out of business, while these same establishments, in their turn, produce disturbances in the money-market.

On the basis of socialised production the scale must be ascertained on which those operations — which withdraw labour-power and means of production for a long time without supplying any product as a useful effect in the interim — can be carried on without injuring branches of production which not only withdraw labour-power and means of production continually, or several times a year, but also supply means of subsistence and of production. Under socialised as well as capitalist production, the labourers in branches of business with shorter working periods will as before withdraw products only for a short time without giving any products in return; while branches of business with long working periods continually withdraw products for a longer time before they return anything. This circumstance, then, arises from the material character of the particular labour-process, not from its social form.” (p 361-2)

Chapter 19 - Former Presentations of the Subject

I. The Physiocrats

Quesnay's *Tableau Economique*, (Chart 2) dealt with in detail in *Theories of Surplus Value*, provides the first outline of how the national product can be exchanged within the context of simple reproduction.

It is, in fact, a more adequate analysis than that of Adam Smith. For one thing, it grasps the difference that Smith, and other later economists, failed to deal with, between stock and flow, i.e. in this context capital and revenue.

So, as Marx says,

"The starting-point of the period of production is properly the preceding year's harvest." (p 362)

Correct because that previous year's production is the starting point for the new value added in the current year. It represents the stock of capital, constant capital, whose value is incorporated into the value of this year's annual output, but for whom no one, in the current year, receives an income.

On this basis, Marx sets out that Smith's "*Trinity Formula*" which argues that both commodity value, and the value of national output, can be reduced to incomes received as wages, rents and profits, is false. This is significant because Keynes also makes this assumption, that national income equals national output, a fundamental part of his *General Theory*.

Indeed, some Marxist economists have phrased their analysis in similar terms, of national output divided into wages and property income.

In order to simplify the arguments that Marx analyses, in the following, let me try to explain why the *Trinity Formula* is wrong. It follows simply from the analysis that has been set out in *Volume I*. The *Trinity Formula*, and those variants of it, such as that of Keynes, or the division into wages and property income, only deals with the revenue components of the value of current production. They reduce the value of output, therefore, to just $v + s$, wages and surplus value, the latter divided into profits, rent, interest and taxes. But, from *Volume I*, we know that the value of a commodity, and therefore the value of a firm's or an entire economy's production comprises $c + v + s$. By calculating the value of national output as just wages and surplus value, therefore, these theories omit the value of the constant capital that comprises a significant element of that value!

Let us return to the example of Robinson Crusoe, and now include the presence of Man Friday. Friday works all week for Robinson. He works ten hours a day, six days a week, resting on the Sabbath. During all these 60 hours, he produces goods which can be used for consumption by himself and Robinson, and also for means of production. He begins with a certain quantity of seeds and tools, stock pens etc., and the value of these is transferred to the value of his output. But, by the same token, these items must be replaced, on a like for like basis, out of his output. Of the 60 hours, he spends 20 hours collecting seeds that will be used to replace harvested crops, making tools to replace those worn out, and repairing stock pens. He spends another 20 hours producing the foods and other necessities he needs for his own subsistence. The final 20 hours are surplus labour-time, during which he produces those same things, but for Robinson's subsistence.

So, what we have is 20 hours received as wages by Friday, 20 hours received as surplus by Robinson, and a further 20 hours, which is received as an income by no one. It simply reproduces the stock of capital consumed. The total value of output is 60 hours, but the total incomes received amount to only 40 hours.

“A portion of the total product — being, like every other portion of it, a use-object, it is a new result of last year’s labour — is at the same time only the depository of old capital-value re-appearing in the same bodily form. It does not circulate but remains in the hands of its producers, the class of farmers, in order to resume there its service as capital. In this portion of the year’s product, the constant capital, Quesnay includes impertinent elements, but he strikes upon the main thing...” (p 363)

In fact, of course, as Marx goes on to discuss, the constant capital does circulate, but it circulates as capital not as revenue. Quesnay, from a standpoint based upon agriculture, saw this constant capital remaining in the hands of the farmer, i.e. a portion of last year's crop provides the seeds for this year's planting, but, for industrial capital, the means of production, that form the commodity-capital of one capitalist, form the productive-capital of another. There is an exchange of capital with capital.

But, taken from the perspective of the total social capital, Quesnay's principle still applies. Constant capital produced by the class of capitalists remains in the hands of the class of capitalists, and from that perspective does not circulate, i.e. it is never exchanged with revenue.

The *Physiocratic* system, Marx says, is the first systematic conception of capitalist production because it is written from the standpoint of the capitalist farmer and avoids all of the confusion that arises from systems, which begin from the standpoint of circulation or exchange, which was the case, for example with the *Mercantilists*, and is so later with the *Neoclassical School*. The *Physiocrats* begin from the standpoint of the capitalist farmer, and for whom value stems directly from the act of production.

“Production creates not only articles of use but also their value; its compelling motive is the procurement of surplus-value, whose birth-place is the sphere of production, not of circulation.” (p 364)

It is the capitalist farmer who creates surplus value, as a consequence of setting the economic engine in motion, and thereby exploiting the agricultural labourers, who cultivate the soil. The other classes such as the landowners, and clergy, who obtain a share of that surplus value, in the form of rents and tithes, the money-capitalists who obtain interest, and the state that extracts taxes, are thereby separated off in the *Physiocratic* system. These other classes are parasitic upon the productive classes. It is the start of the ideological offensive of the bourgeoisie against the landowning class.

As discussed in *Chapter 10*, discussing the differences between Adam Smith and the *Physiocrats*, in relation to fixed and circulating capital, Smith regresses compared to them. Not only does he regress in terms of his analysis of fixed and circulating capital, but he also makes the same error as them, in places, in relation to the role of agriculture compared to other forms of capitalist production. So, for example, he argues that agricultural capital must create more value than elsewhere, because, in addition to creating surplus value, it also creates sufficient value to pay rent.

Smith, in his analysis and distinction between fixed and circulating capital, is forced to acknowledge the existence of constant capital (that he basically refers to as fixed capital),

but its significance is wholly lost, because of his division of capital instead into fixed and circulating.

“The absurdity of the thing lies here in the fact that Smith does not, like Quesnay before him, see the re-appearance of the value of constant capital in a renewed form, and hence fails to see an important element of the process of reproduction, but merely offers one more illustration, and a wrong one at that, of his distinctions between circulating and fixed capital.” (p 366)

II. Adam Smith

1. Smith’s General Points of View

Marx quotes Smith,

“Adam Smith says in Book I, Ch. 6, page 42:

‘In every society the price of every commodity finally resolves itself into some one or other, or all of those three parts (wages, profit, rent); and in every improved society, all the three enter more or less, as component parts, into the price of the far greater part of commodities.’

Or, as he continues, page 43:

*‘Wages, profit, and rent, are the **three original sources** of all revenue as well as of **all exchangeable value.**’*” (p 366)

This is part of the contradiction in Smith's theory, highlighted by Marx. On the one hand, Smith, at times, argues a cost of production theory of value, whereby the value of commodities is essentially just a summation of these three component parts, at others he argues a labour theory of value. But both of them are confused.

He attempts to square the circle that he cannot avoid recognising the existence of constant capital, as a component of the value of commodities, by arguing that the constant capital itself is resolvable into these three component revenue elements, but Marx points out that clearly it isn't. The constant capital itself is resolvable not only into the new value created by labour, but also the constant capital that goes into its own production. Only if it was possible to carry this process back to some terminal point where production was *only* comprised of labour, and involved no constant capital could this argument be valid. But, there is no such point. Even primary production like agriculture or mining involves the use of constant capital, in the form of tools, machines and auxiliary materials, e.g. coal to power steam engines in a coal mine.

Marx points out that even Smith's example of Scottish pebble collectors does not count, because they used baskets and other equipment to collect, hold and carry the pebbles.

But, Smith also needs to try to deal with the question of the constant capital in the terms in which he has divided the value into revenue streams.

“This is accomplished by drawing a distinction between gross and net revenue:

*‘The **gross** revenue of all the inhabitants of a great country comprehends the **whole annual produce** of their land and labour; the **net** revenue, what remains free to them **after deducting the expense of maintaining**; first, their **fixed**; and secondly, their **circulating capital**; or what, without encroaching upon their capital, they can place in their*

stock reserved for immediate consumption, or spend upon their subsistence, conveniences, and amusements. Their real wealth too is in proportion, not to their gross, but to their neat revenue.' (Ibid., p. 190.)" (p 367)

This takes us back to the Robinson Crusoe example I gave previously. What Smith means by the “neat” or net revenue is what is left over after the existing constant capital has been maintained, i.e. the necessary repairs to the fixed capital, and the reproduction of the circulating, constant capital. The rest of the firm or nation's output/income is then available for consumption, divided into wages and surplus value, provided we assume simple reproduction, i.e. no investment.

So, Smith accepts here that this portion is itself resolved neither into wages, profit nor rents. Marx comments,

*“Adam Smith flees from his own theory by means of a play upon words, the distinction between 'gross and neat revenue.' The individual capitalist as well as the entire capitalist class, or the so-called nation, receive in place of the capital consumed in production a commodity-product whose value — it can be represented by the proportional parts of this product — replaces on the one hand the expended capital-value and thus forms an income, or still more literally, revenue (**revenue**, pp. Of **revenir**— to come back), but, **nota bene**, a revenue upon capital, or income upon capital; on the other hand components of value which are '**parcelled out among the different inhabitants of the country, either as the wages of their labour, the profits of their stock, or the rent of their land**', a thing commonly called income. Hence the value of the entire product constitutes somebody's income — either of the individual capitalist or of the whole country, but it is on the one hand an income upon capital, and on the other a '**revenue**' different from the latter. Consequently, the thing which is eliminated in the analysis of the value of the commodity into its component parts is brought back through a side door — the ambiguity of the word '**revenue**.' But only such value constituents of the product can be '**taken in**' as already exist in it. If the **capital** is to come in as revenue, capital must first have been expended.” (p 367-8)*

Marx picks up some of the other odd formulations by Smith. For example, Smith writes,

“The lowest ordinary rate of profit must always be something more than what is sufficient to compensate the occasional losses to which every employment of stock is exposed. It is this surplus only which is neat or clear profit.” (p 368)

But, as Marx says, what capitalist would consider income that only covered necessary expenses as profit? As seen previously, fixed capital passes on its value gradually in wear and tear, to the end product, and part of this is also the average costs of maintaining and repairing it during its lifetime. The fact that these latter costs may be subject to variation, which requires capital to establish some form of insurance fund, to cover such eventualities, does not change that, it simply means that these insurance costs have to be borne out of capital. So, a portion of the surplus value created by the workers, is used to cover the establishment of such insurance funds.

Smith excludes the actual constant capital, but includes the wages of the workers involved in its production. In so doing, he makes an important distinction. If we look at workers producing means of production, a part of the value of their output is equal to the value of their wages – the variable capital. These wages are merely a money form of the means of subsistence required by those workers. But, these workers have produced nothing that can be consumed by these or other workers, as means of subsistence.

Instead it exists as an amount of value embodied in means of production.

“Hence these products are not an element of that part of the annual product which is intended to form a social consumption-fund, in which alone a 'net revenue' can be realised. Adam Smith forgets to add here that the same thing that applies to wages is also true of that constituent of the value of the means of production which, being surplus-value, forms the revenues (first and foremost) of the industrial capitalist under the categories of profit and rent. These value-components likewise exist in means of production, articles which cannot be consumed.” (p 369)

Only when these means of production are sold can they produce the funds which can then be transformed into means of consumption, i.e. create their own portion of the total consumption fund. But, for this fund to be able to actually purchase means of consumption, that implies that those workers, themselves employed in producing means of consumption, produce a surplus product that not only covers the consumption needs of capitalists, but also of those workers producing means of production. To put this again in terms of Robinson Crusoe, it is as though Robinson was fully employed producing means of production, but Friday had to produce sufficient means of consumption not just for his own subsistence, but also to meet those of Robinson.

“But so much the more should Adam Smith have seen that that part of the value of the annually begotten means of production which is equal to the value of the means of production functioning within this sphere of production — the means of production with which means of production are made — hence a portion of value equal to the value of the constant capital employed here, cannot possibly be a value constituent forming revenue, not only on account of the bodily form in which it exists, but also on account of its functioning as capital.” (p 370)

In other words, this is a capital-value that forms part of the value of the total national output, but it is not one that produces revenue. It is one that simply maintains capital-value. It is not an exchange of capital with revenue but of capital with capital.

Marx says that Smith's definitions in respect of workers producing means of consumption are *“not quite exact”*. But, that seems to understate the case.

*“For he says that in these kinds of labour, both the price of labour and the product **“go to”** the stock reserved for immediate consumption,*

*'the **price**' (i.e., the money received in wages) 'to that of the **workmen**, the **produce to that of other people**, whose subsistence, conveniences and amusements, are augmented by the labour of these workmen.’” (p 370)*

Marx points out that workers cannot live on wages, but only on the commodities bought with those wages. Those commodities may or may not be those produced by the workers spending the wages. But, Marx seems to miss that Smith's formulation amounts to double counting. If both the wages and the value of the commodities produced by the workers receiving those wages are included, the same thing in different forms has been counted twice. The value of the output of the workers producing means of consumption will be higher than the value of their own wages, because that output has to be sufficient not only to meet their own consumption needs, but also the consumption needs of capitalists, and workers producing means of production. But, a portion of that value is equal to their own wages, and adding it to the value of their output amounts to counting it twice.

So, Smith understates the value of national output by omitting the value of constant capital, but overstates it by counting these wages twice.

Smith says,

“Whatever portion of those consumable goods is not employed in maintaining the former” [the fixed capital] “goes all to the latter” [the fund for immediate consumption], “and makes a part of the neat revenue of the society. The maintenance of those three parts of the circulating capital, therefore, withdraws no portion of the annual produce from the neat revenue of the society, besides what is necessary for maintaining the fixed capital.” Book II, Ch. 2, p. 192.)” (p 370)

Marx comments that this is sheer tautology. What does not go to replace means of production, automatically is available for consumption by workers or exploiters, again assuming simple reproduction.

Smith argues that the circulating capital of a firm differs from that of society as a whole. Remember that for Smith, circulating capital is actually capital in circulation. So, Smith argues that for the individual firm, the circulating capital comprises no part of his net revenue, which is only his profit. However, that is not the case for society, he says.

So, the stock of a merchant's shop is not there for his consumption, i.e. it is not equal to his income, used to buy consumption goods. His income/profit is only what he makes in selling those goods, i.e. the excess of their selling price over their cost.

But, for society, as a whole, he says, those goods do comprise their consumption, and are bought using their income, or net revenue – excess of income over cost. Smith, in a confused way, has hit upon a truth here. He has excluded the fixed capital from his calculation of the firm's profit. He has also excluded the circulating capital required for the maintenance and reproduction of that fixed capital. In so doing, he has essentially arrived at the truth that the constant capital is not the source of the firm's surplus value. But, also that the capital laid out as variable capital, in so far as it is simply reproduced, in the value of the end commodity, also cannot represent a surplus value. All of these components of the value of the commodity only reproduce the capital advanced.

“Hence that portion of his commodity-product which replaces his capital cannot resolve itself into constituents of value which form any revenue for him.” (p 371)

But, Smith fails then to resolve the question of where that surplus value does come from.

Both the circulating capital, for which read commodity-capital, and the fixed capital, of each firm, constitutes a fraction of society's total capital. However, the nature of the circulating/commodity-capital is different considered from the social as opposed to the individual viewpoint. The total commodity-capital of society is consumed by society, either productively or as consumption. It is thereby bought, and consequently has to be bought with some form of income/revenue.

So, from the social standpoint, that commodity-capital appears as the equivalent form of all incomes. However, from the individual standpoint, it is clear that this is not so. The income/profit of the shopkeeper is not enough to buy all of the stock upon which that profit is made. It could only be so if it had no cost, and the selling price comprised only the equivalent of his own labour.

But, as Marx points out, in making this analysis, Smith should not only have recognised this from the standpoint of the shopkeeper, but should,

“have selected the masses of goods stored away in the warehouses of the industrial capitalists.” (p 372)

Had Smith put all this together, Marx says, he would have arrived at the following conclusions.

“The annual product of society consists of two departments: one of them comprises the means of production, the other the articles of consumption. Each must be treated separately.” (p 372)

The value of the output of means of production comprises three parts. One part represents the value of means of production used to produce the means of production themselves. In other words, it is not new value produced, but only existing capital-value reappearing in a different form. As such, although it comprises a portion of the value of national output, it produces no revenue, and is not bought with revenue.

To the extent that means of production are produced by one capital, and bought by another, this is not an exchange of capital with revenue, but of capital with capital.

A second part is the value created by labour that transforms those means of production, which is divided into the portion equal to what is paid out as wages, by all capitalists involved in production of means of production, and another portion, which comprises the third part of the value of means of production, which is equal to all of the surplus value extracted by capital in that department.

The constant capital, or what Smith calls “*fixed capital*”, constitutes then neither a revenue for the individual capital, nor for the social capital. It exists only as capital. But, the other portion of the value of means of production do. In so far as the means of production are sold, this added value from labour, results in wages, profits, rent, interest etc., i.e. revenues for those involved in production. But, for those that buy these means of production, i.e. from the standpoint of social capital, they represent not revenue but capital.

The means of production produces revenue for the sellers equivalent to the added value by labour, but for the buyers, i.e. the capitalists in Department II, the producers of means of consumption, they constitute only capital. In other words, as in *Volume I*, they merely transfer their value to the final product rather than being the source of any new value/revenue.

In its turn, the constant capital, which then forms a constituent part of the means of consumption, in whose production it has taken part, represents also the physical manifestation of the consumption fund of the workers and capitalists in Department I. It is the physical equivalent of the revenues they have received as wages, profits etc.

If we think of Robinson Crusoe, he spends a part of his week making fishing nets (means of production). He does not consume the fishing net. But, when he uses it to catch fish (means of consumption) a portion of the value of the net is transferred to the value of the fish. In other words, the time he spends making nets is a necessary part of the time it takes him to catch the fish. The time he spends producing nets, produces no fish (revenue) but he covers his 'wages'/consumption fund for this period of time, by selling to himself the nets in return for a portion of the fish he catches with those nets.

“If Adam Smith had continued his analysis to this point, but little would have been lacking for the solution of the whole problem. He almost hit the nail on the head, for he had already observed that certain value-parts of one kind (means of production) of the commodity-capitals constituting the total annual product of society indeed form revenue for the individual labourers and capitalists engaged in their production, but do not form a constituent part of the revenue of society; while a value-part of the other kind (articles of

consumption), although representing capital-value for its individual owners, the capitalists engaged in this sphere of investment, is only a part of the social revenue.” (p 373)

Marx draws the following conclusions.

1. The value of total national output is equal to the value of the aggregate output (commodity-capital) of all the individual firms. Therefore, $c + v + s \times n = C + V + S$. However, “...the form of appearance which these component parts assume in the aggregate social process of reproduction is **different**.” (p 373)
2. The working day is divided into two, one part being necessary labour-time, in which the worker replaces the value of their labour-power, i.e. the value of their consumption fund, and a second part, in which the worker performs surplus labour, thereby producing the value that forms the consumption fund for the capitalist. But, in addition to the production, which creates this new value, part of production also creates new constant capital.

The former creates revenue that is the equivalent of this new capital-value. The latter does not because it is merely the reappearance of existing capital-value in a new form. The former is an exchange of capital with revenue, the latter of capital with capital.

2. Adam Smith Resolves Exchange Value into $v + s$

Smith resolves exchange value and the value of national output into three parts – *The Trinity Formula*. That is wages, profits and rent. This is also the assumption of orthodox economics, be it the *Neoclassical* or *Keynesian*. In fact, Keynes' *General Theory* is based on the assumption of such an equality, i.e. that the value of national output is equal to national income. Marx sets out to demonstrate that this assumption is most obviously false.

Smith's assumption comes down to saying that exchange value/national output comprises $v + s$, wages plus surplus value. The fact that Smith refers also to rent does not change this. If a rent is obtained, this only means that workers have created enough surplus value that one could be paid.

Marx quotes Smith himself to demonstrate this. For example, talking about manufacture, Smith says,

“The whole annual produce of the land and labour of every country ...**naturally** divides itself into two parts. One of them, and frequently the largest, is in the first place, destined for replacing a capital, or for renewing the provisions, materials, and finished work, which had been withdrawn from a capital; the other for constituting a revenue either to the owner of this capital, as the **profit of his stock**; or to some other person, as the **rent of his land**. (p. 222.)” (p 375)

In other words, $v + s$, wages and profits. Then in relation to agriculture, besides,

“the reproduction of a value equal to their own consumption, or to the [variable] capital which employs them, together with its owners' profits ...” — furthermore, “over and above the capital of the farmer and all its **profits** regularly occasion the reproduction of the **rent of the landlord**.” (Book II, Ch. 5, p. 243.)” (p 375)

But, Marx points out,

“The fact that the rent passes into the hands of the landlord is wholly immaterial for the question under consideration. Before it can pass into his hands, it must be in those of the farmer, i.e., of the industrial capitalist. It must form a component part of the value of the product before it becomes a revenue for anyone. Rent as well as profit are therefore, according to Adam Smith himself, but component parts of surplus-value and these the productive labourer reproduces continually together with his own wages, i.e., with the value of the variable capital. Hence rent and profit are parts of the surplus-value s , and thus, with Adam Smith, the price of all commodities resolves itself into $v + s$.” (p 75-6)

Smith conflates the idea of wages, profits and rent being component parts of revenue, which as seen could be reduced to just $v + s$, with them being the original source of revenue. But, Marx points out that although its true that the revenues of all sorts of people, not engaged in production, from a prostitute to a King, comes from a payment by a productive worker or a capitalist, those who receive them do so by virtue of the function they perform,

“and they may, therefore, regard these functions as the original sources of their revenue.” (p 376)

3. The Constant Part of Capital

There is clearly an important distinction between the source of revenue and its destination. For example, profit may be paid to a capitalist, and all sorts of justifications as to why they should receive it can be formulated. That may be that they have taken a risk, that they have abstained from consumption etc. But, none of these have anything to do with the source of the profit they receive.

A capitalist may take a risk, for example, producing some commodity that nobody wants. Rather than this risk creating a profit, they will make a loss, and the resources used for its production will be wasted. A capitalist may abstain from consumption, and hide their pot of gold in the ground until later. But, when they dig it up, it will have increased in value by not one jot!

So, when Smith says,

“In the price of corn, for example, one part pays the rent of the landlord.” (p 377)

this is not an explanation of the value of the corn, based upon the revenues that are paid to the revenue recipients (the basis of the cost of production argument) but quite the reverse shows that the value of the corn can be divided up so as to provide a revenue to various recipients.

In other words, it is the value of the commodity, which determines how much can be distributed as revenue not how much is distributed as revenue that determines value. Suppose a firm produces without any constant capital. The value of its output is equivalent to 10,000 hours of social labour. If to produce it, it employs 10 workers, who are paid in arrears, the fact that the value of their labour-power amounts to 15,000 hours of social labour does not mean they can be paid it!

The most the firm can pay from its revenue is the equivalent of 10,000 hours. If the workers had been paid in advance, the full 15,000 hours, then the capitalist would have made a loss equal to 5,000 hours, which they would have to make up from their capital. The 10,000 hours of value created by the workers is all new, positive value. It is value that did not

previously exist. The problem is that this new value created by the workers is less than the value of their labour-power consumed in producing it!

In other words,

“This entire price, i.e., the determination of its magnitude, is absolutely independent of its distribution among three kinds of people.” (p 377)

Smith then is forced to recognise that these revenues are not the end of the matter, because in addition to the wages, profits and rent there is also the value of the constant capital. He then sets up a counter argument to try to escape this problem.

“A fourth part, it may perhaps be thought, is necessary for replacing the stock of the farmer, or for compensating the wear and tear of his labouring cattle, and other instruments of husbandry. But it must be considered that the price of any instrument of husbandry, such as a labouring horse, is itself made up of the same three parts: the rent of the land upon which he is reared, the labour of tending and rearing him, and the profits of the farmer who advances both the rent of this land, and the wages of this labour. Though the price of the corn, therefore, may pay the price as well as the maintenance of the horse, the whole price still resolves itself either immediately or ultimately into the same three parts of rent, labour” (he means wages), “and profit.” (Book I, Ch. 6, p. 42.)” (p 377-8)

In other words, he simply relies on repeating the assertion that everything resolves itself into $v + s$.

But, Marx points out,

“He forgets, however, to add: and, moreover, into the prices of the means of production consumed in their own creation. He refers us from one branch of production to another, and from that to a third. The contention that the entire price of commodities resolves itself “immediately” or “ultimately” into $v + s$ would not be a hollow subterfuge only if he were able to demonstrate that the commodities whose price resolves itself immediately into c (price of consumed means of production) + $v + s$, are ultimately compensated by commodities which completely replace those “consumed means of production,” and which are themselves produced by the mere outlay of variable capital, i.e., by a mere investment of capital in labour-power.” (p 378)

But, of course, he can't. All production resolves itself into $c + v + s$.

The variable capital set in motion by the capitalist results in the production of new value by the workers, i.e. positive value equal to the average social labour expended by the workers. At the same time, those workers preserve the value of any constant capital that is transferred to the end product.

NB. It is only the value of constant capital actually transferred that is preserved. If material or machines are destroyed, depreciated or otherwise wasted, and thereby prevented from entering the final product, then obviously the value is not transferred either.

But, this is all those workers can do. This new value they create is divided into $v + s$. Assuming the value of the labour-power is less than the new value created by those workers, the surplus will then be appropriated by capital, and some of it may be shared as rent with the landlord, some as interest with the money capitalist and so on.

“And what is true of the industrial labour of one day is true of the labour set in motion by the entire capitalist class during one year. Hence the aggregate mass of the annual value

produced by society can resolve itself only into $v + s$, into an equivalent by which the labourers replace the capital-value expended for the purchase of their own labour-power, and into an additional value which they must deliver over and above this to their employers. But these two elements of commodity-value form at the same time sources of revenue for the various classes engaged in reproduction: the first is the source of wages, the revenue of the labourers; the second that of surplus-value, a portion of which is retained by the industrial capitalist in the form of profit, while another is given up by him as rent, the revenue of the landlord. Where, then, should another portion of value come from, when the annual value-product contains no other elements than $v + s$?" (p 378-9)

Marx explains.

Adam Smith determines the value of a commodity by the amount of labour a worker adds to the materials he works with. But, this value added is entirely independent of whether those materials had any value to begin with. This new value, embodied in a new commodity, is in part an equivalent to the wages paid to the worker, but also in part, a surplus value, paid as profits etc. Whether or not this surplus is shared with others does not change the fact of it being a surplus, or the amount of that surplus.

What is true for any individual commodity, or business, is true for the whole economy.

"It "fixes" (Adam Smith's expression) in the annual product of a total value determined by the quantity of the annual labour expended, and this total value resolves itself into one portion determined by that part of the annual labour wherewith the working-class creates an equivalent of its annual wages, in fact, these wages themselves; and into another portion determined by the additional annual labour by which the labourer creates surplus-value for the capitalist class. The annual value-product contained in the annual product consists therefore of but two elements: namely, the equivalent of the annual wages received by the working-class, and the surplus-value annually provided for the capitalist class. Now, the annual wages are the revenue of the working-class, and the annual quantity of surplus-value the revenue of the capitalist class; hence both of them represent the relative shares in the annual fund for consumption (this view is correct when describing simple reproduction) and are realised in it." (p 380)

But, of course, as all the previous analysis has shown, the value of a commodity, and therefore of national output, cannot be reduced to just $v + s$, to the new value created, precisely because those materials used, the constant capital, do already possess value that is transferred into the final product.

*"Now Adam Smith's first mistake consists in equating the **value of the annual product to the newly produced annual value**. The latter is **only** the product of labour of the past year, the former includes besides all elements of value consumed in the making of the annual product, but which **were produced in the preceding and partly even earlier years**: means of production whose value merely **re-appears** — which, as far as their value is concerned, have been neither produced nor reproduced by the labour expended in the past year." (p 381)*

In part, Smith's error rests upon his confusion between abstract and concrete labour, and between labour and labour-power, which itself rests on the two-fold nature of labour itself. Abstract labour is the essence and measure of value, it creates value through the expenditure of labour-power. But, labour-power can only ever be concrete. Workers do not exist as abstract workers, but as specific kinds of workers, tailors, spinners, teachers etc. It is this concrete labour-power that is sold as a commodity. It is concrete labour that is the source of value, because it is only concrete labour that exists as a material thing, and

which produces use values. Abstract labour cannot be sold as a commodity, as labour-power, precisely because it does not exist as a material thing. It is only an abstraction.

*“The total quantity of the commodities fabricated annually, in other words, the **total annual product** is the product of the **useful** labour active during the past year; it is only due to the fact that socially employed labour was spent in a ramified system of useful kinds of labour that all these commodities exist; it is due to this fact alone that the value of the means of production consumed in the production of commodities and reappearing in a new bodily form is preserved in their total value. The total **annual product**, then, is the result of the **useful** labour expended during the year; but only a part of the **value** of the annual **product** has been created during the year; this portion is the annual **value-product**, in which the quantity of labour set in motion during the year is represented.” (p 381)*

So, Smith puts forward a one-sided argument when he claims that it is only the useful labour expended during the year which creates the value of the total output, because he forgets the value contributed by all of the materials used in it, the tools and machines used to assist labour and so on, and

“therefore, the “annual labour,” while it created value, did not create all the value of the products fabricated by it; that the value newly produced is smaller than the value of the product.”(p 381-2)

The simple answer in a way was given by the quote Marx gave from William Thompson earlier in *Chapter 17*, that a society could continue to consume for a time even if it did not produce. It could consume its existing capital. A portion of that capital always is consumed each year. But, in order to prevent its diminution each year, a portion of production must always be devoted not to consumption, but to the replacement of that capital.

4. Capital and Revenue in Adam Smith

The capitalist advances variable capital in the form of wages to the worker. Those wages might be from the existing capital of the capitalist, obtained by credit, from the sale of products previously produced by workers etc. The value of these wages is reproduced in part of the product produced by the workers. Rather than paying the workers with that portion of their output, the capitalist pays them an equivalent in money. The worker now has wages, and the capitalist has the equivalent of these wages as part of his commodity-capital.

So, the variable capital appears as revenue, wages to the worker, which lasts only so long as to buy the necessaries they require. As a result, various processes of production and circulation are intermingled which Adam Smith does not distinguish.

In the process of circulation,. The worker sells his labour-power, $C(L) - M$, to the capitalist, who advances variable capital as wages. The worker exchanges a use value and obtains its price as money wages. The capitalist buyer exchanges money (exchange value) for a use value (labour-power).

In the production process, the labour-power bought produces new value by adding value to the means of production. He reproduces for the capitalist, in the form of new commodities, the capital advanced, along with a surplus value. By reproducing the advanced capital, the worker enables the capitalist to advance it again.

As far as the process of circulation is concerned, it doesn't matter what happens after the exchange is completed. A seller is not concerned what a buyer does with the commodity

they have sold them. A buyer is not interested what the seller does with the money they have paid them.

"Hence, so far as the mere process of circulation is concerned, it is quite immaterial that the labour-power bought by the capitalist reproduces capital-value for him, and that on the other hand the money received by the labourer as the purchase-price of his labour-power constitutes his revenue. The magnitude of value of the labourer's article of commerce, his labour-power, is not affected either by its forming "revenue" for him or by the fact that the use of this article of commerce by the buyer reproduces capital-value for this buyer." (p 384)

The worker is paid the value of their labour-power as wages, as revenue on which they must live.

"It is entirely wrong, when Adam Smith says (p. 223):

'That portion of the stock which is laid out in maintaining productive hands ... after having served in the function of a capital to him [the capitalist] ... constitutes a revenue to them' [the labourers]." (p 384)

The capitalist pays out money to purchase labour-power. But, for the workers, the labour-power does not constitute capital. It is only a commodity, which they can continue to sell, provided it is reproduced, and the capitalist is enabled and prepared to buy. The labour-power, having been bought, by the capitalist, however, does then become capital – productive-capital – in his hands.

The labour-power functions twice, because the worker supplies it before the capitalist has paid for it. It acts as a commodity in his hands, and then as capital in the hands of the capitalist.

*"Hence it is not the money which functions twice: first, as the money-form of the variable capital, and then as wages. On the contrary it is labour-power which has functioned twice: first, as a **commodity** in the sale of labour-power (in stipulating the amount of wages to be paid, money acts merely as an ideal measure of value and need not even be in the hands of the capitalist); secondly, in the process of production, in which it functions as **capital**, i.e., as an element, in the hands of the capitalist, creating use-value and value. Labour-power already supplied, in the form of commodities, the equivalent which is to be paid to the labourer, before it is paid by the capitalist to the labourer in money-form. Hence the labourer himself creates the fund out of which the capitalist pays him." (p 385)*

But, the worker then has to spend these wages to live, and thereby perpetuate the supply of labour-power for capital. So, the purchase and sale of labour-power not only reproduces it as an element of productive-capital, which appears as the producer of commodities, but also creates the fund for capital to pay the worker, and thereby purchase a portion of those commodities.

"And to this extent Smith is right when he says that the portion of the value of the product created by the labourer himself for which the capitalist pays him an equivalent in the form of wages, becomes the source of revenue for the labourer. But this does not alter the nature or magnitude of this portion of the value of the commodity any more than the value of the means of production is changed by the fact that they function as capital-values, or the nature and magnitude of a straight line are changed by the fact that it serves as the base of some triangle or as the diameter of some ellipse." (p 385)

The labour-time expended by the worker is determinate of the value he creates, and this new value provides the basis, the source, of the revenue he receives as wages. But, that is quite different to saying that the revenues received by the worker, i.e. their wages, is determinate of the values they create.

*“This portion of the value of a commodity neither **consists of** revenue as an independent factor constituting this value-part nor does it **resolve itself** into revenue. While this new value constantly reproduced by the labourer constitutes a source of revenue for him, his revenue conversely is not a constituent of the new value produced by him. The magnitude of the share paid to him of the new value created by him determines the value-magnitude of his revenue, not vice versa. The fact that this part of the newly created value forms a revenue for him, indicates merely what becomes of it, shows the character of its application, and has no more to do with its formation than with that of any other value. If my receipts are ten shillings a week that changes nothing in the **nature** of the value of the ten shillings, nor in the **magnitude** of their value.” (p 386)*

It is the category 'revenue' that causes Smith all his problems, says Marx. At one time, Smith has the different revenues being the components, or sources of the value of commodities. At another, it is the value of commodities that itself resolves into these revenues. The two are not the same.

“If I determine the lengths of three different straight lines independently, and then form out of these three lines as “component parts” a fourth straight line equal to their sum, it is by no means the same procedure as when I have some given straight line before me and for some purpose divide it, “resolve” it, so to say, into three different parts. In the first case, the length of the line changes throughout with the lengths of the three lines whose sum it is; in the second case, the lengths of the three parts of the line are from the outset limited by the fact that they are parts of a line of given length.” (p 387)

If commodity value is determined by the value of these revenues, the question also arises how are these revenues themselves determined? The value of wages can be determined. It is the value of labour-power, but how is the value of the surplus value to be determined?

5. Recapitulation

*“The absurd formula that the three revenues, wages, profit and rent, form the three “component parts” of the value of commodities originates with Adam Smith from the more plausible idea that the value of commodities “**resolves itself**” into these three component parts. This is likewise incorrect, even granted that the value of commodities is divisible only into an equivalent of the consumed labour-power and the surplus-value created by it.” (p 389)*

Capitalist production is based on the fact that the worker sells his commodity – labour-power – to the capitalist, for whom it constitutes part of his productive-capital. This relation determines its specific character. The capitalist is not interested in buying labour-power to produce use values, but only to extract absolute and relative surplus value.

“For this reason we have seen in the analysis of the process of production that the production of absolute and relative surplus-value determines 1) the duration of the daily labour-process and 2) the entire social and technical configuration of the capitalist process of production.” (p 389)

The laws regulating the extraction of absolute surplus value determine the limits of the length of the working-day, and the intensity of work within it. The laws regulating relative

surplus value determine the way machines, new techniques and other means of raising productivity are implemented.

This process results in the conservation of existing value (reproduction of constant capital), reproduction of the labour-power (production of the workers' consumption-fund), and the production of a surplus value (production of the capitalists' consumption fund). But, the fact that the production process creates these separate funds does not at all mean that the total value of production is simply a sum of their parts.

“The substance of value is and remains nothing but expended labour-power — labour independent of the specific, useful character of this expenditure. A serf for instance expends his labour-power for six days, labours for six days, and the fact of this expenditure as such is not altered by the circumstance that he may be working three days for himself, on his own field, and three days for his lord, on the field of the latter. Both his voluntary labour for himself and his forced labour for his lord are equally labour; so far as this labour is considered with reference to the values, or to the useful articles created by it, there is no difference in his six days of labour. The difference refers merely to the different conditions by which the expenditure of his labour-power during both halves of his labour-time of six days is called forth. The same applies to the necessary and surplus-labour of the wage-labourer.” (p 390)

The value of a commodity is determined by the labour-time required for its production, and that comprises two elements. First is the labour-time required to reproduce the constant capital, the materials etc. Second is the time the worker has to spend processing the materials to create the new product. Once this value of the commodity is determined, then it is possible to talk about how that value, once realised, is distributed.

“If I have drawn a straight line of definite length, I have, to start with, “produced” a straight line (true, only symbolically, as I know beforehand) by resort to the art of drawing, which is practised in accordance with certain rules (laws) independent of myself. If I divide this line into three sections (which may correspond to a certain problem), every one of these sections remains a straight line, and the entire line, whose sections they are, does not resolve itself by this division into anything different from a straight line, for instance into some kind of curve. Neither can I divide a line of a given length in such a way that the sum of its parts is greater than the undivided line itself; hence the length of the undivided line is not determined by any arbitrarily fixed lengths of its parts. Vice versa, the relative lengths of these parts are limited from the outset by the size of the line whose parts they are.” (p 390)

The use value of a commodity is entirely the result of the labour process that creates it. But, that is not the same for its value. A large part of the value of the commodity is simply transferred to it along with the use value of the constant capital. That is value that already existed. The only new value created is that created by the worker in the labour process, and which is divided into wages and surplus value.

The constant capital constitutes a stock whereas the new value produced is a flow. Comparing it, for example, with the profit & loss account of a trading company, that begins with the “*Opening Stock*”, adds the “*Purchases*”, and then deducts the “*Closing Stock*”, to obtain the “*Cost of Sales*”. It deducts the cost of sales from its sales income to obtain the gross profit. The cost of sales constitutes a necessary part of the firm's costs that have been recovered in its sales, but forms no part of the revenue that can be distributed as wages, profits or rent. Rather, having been recovered in the value of sales, it has to go straight back into purchases again.

The same thing is true for constant capital. It forms a necessary element in the value of the commodity, and of national output, but that value, once recovered, goes straight back into its replacement rather than providing a revenue. The revenue can only be paid out of the new value created. The constant capital circulates as capital, the new value circulates as revenue.

“However, if Adam Smith wanted to occupy himself, as he did, with the role of the various parts of this value in the total process of reproduction, even while he was investigating the value of commodities, it would be evident that while some particular parts function as revenue, others function just as continually as capital — and consequently, according to his logic, should have been designated as constituent parts of the commodity-value, or parts into which this value resolves itself.” (p 392)

Smith's problem was that he started his analysis from the wrong point. What Smith analyses is commodity-capital, but to do so adequately involves understanding the process of capitalist production, which in turn requires an understanding of the exchange of commodities, which in turn requires an understanding of the commodity itself. That is why Marx began his analysis with the commodity.

III. Later Economists

Ricardo follows Smith in relation to the *Trinity Formula*. But, unlike Smith, Ricardo starts with a labour theory of value, in which the value of the commodity is determined by the labour-time required for production. So, the magnitude of value is determined before consideration of its division into different revenues.

Ricardo's error in omitting constant capital was noted by Ramsay.

“Ramsay makes the following remark against Ricardo:

‘... He seems always to consider the whole produce as divided between wages and profits, forgetting the part necessary for replacing fixed capital.’ (An Essay on the Distribution of Wealth, Edinburgh, 1836, p. 174.)

By fixed capital Ramsay means the same thing that I mean by constant capital:

‘Fixed capital exists in a form in which, though assisting to raise the future commodity, it does not maintain labourers.’ (Ibid., p. 59.)” (p 394)

Had Smith or his followers been correct, that national output equals national income then the outcome would have been that the entire national output would have been consumed! Clearly, it is not all consumed, because a large portion of output is simply used to replace the machines and materials used up, i.e. to provide the constant capital to be used in the following period.

Smith never drew that conclusion, but some of his followers did.

“It is never the original thinkers that draw the absurd conclusions. They leave that to the Says and MacCullochs.” (p 394)

For Say, the difference between gross and net product is purely subjective. He says,

*““thus the total value of all products, has been distributed in society as revenue.” (Say, **Traité d’Economie Politique**, 1817, II, p. 64.) “The total value of every product is composed of the profits of the landowners, the capitalists, and those who ply industrial*

trades" [wages figure here as **profits des industriels!**] "who have contributed towards its production. This makes the revenue of society equal to the **gross value produced**, not equal to the net products of the soil, as was believed by the sect of the economists" [the physiocrats]. (p. 63.)" (p 394)

Marx comments that this idea was also adopted by Proudhon.

Storch followed Smith, but recognised Say's error.

"“If it is admitted that the revenue of a nation is equal to its gross product, i.e., that no capital” [it should say: no constant capital] “is to be deducted, then it must also be admitted that this nation may consume unproductively the entire value of its annual product without the least detriment to its future revenue.... The products which represent the” [constant] “capital of a nation are not consumable.” (Storch, **Considérations sur la nature du revenu national**, Paris, 1824, pp. 147, 150.)” (p 394-5)

Marx points out that Storch should then have realised that this conflicts with his acceptance of Smith's view of price, which omits constant capital.

Sismondi had nothing useful to say, Barton, Ramsay and Cerbuliez failed to advance because they did not distinguish between constant and variable capital, and John Stuart Mill just pompously reproduced Smith, Marx says. All of these and more are discussed at much greater length in *Theories of Surplus Value*.

“As a result, the Smithian confusion of thought persists to this hour and his dogma is one of the orthodox articles of faith of Political Economy.” (p 395)

Unfortunately, that confusion over the equality of national output with national income continues today.

Chapter 20 - Simple Reproduction

Part 1

I. The Formulation of the Question

If we think about society in the terms of Robinson Crusoe, or Robinson and Man Friday, the essential relations within an economy are laid bare. That is not just true in relation to the operation of the *Law of Value*, as Marx described in *Volume I*. It is also true in relation to the connected aspect of the social reproduction that must be undertaken.

So, we can see, clearly, that a given proportion of available labour-time, determined by the *Law of Value*, has to be set aside for producing tools, pens etc. - means of production – as well as their replacement. This production never enters into the consumption of Robinson or Friday. It can be considered the portion of the value of their national output that goes to maintaining the capital stock. It is not the same physical capital stock that is maintained from year to year, precisely because a portion of it is used up or worn out. That is why a portion of the annual output has to go simply to replace it. In this sense it can be considered to circulate, but only as capital, not as revenue, i.e. not as an income to someone that can be consumed.

Another part of Robinson and Friday's production does go to produce an element that can be consumed, i.e. a revenue. That is what they produce to meet their needs for food, clothing, shelter etc. If this production is large enough, Robinson may choose not to work for some or all of the time. In that case, part of Friday's production will go to meet his own consumption needs, and the rest will be a surplus appropriated by Robinson.

But, also Robinson and Friday may divide the work up. Robinson may work producing and reproducing means of production, whilst Friday produces the means of consumption. Here, Robinson's output certainly forms part of their total national output, but it does not constitute a revenue for the society. It is not available to be consumed. It is only Friday's output that constitutes a revenue for the society, and is available for consumption.

Yet, it might not seem that way to Robinson. He produces the means of production that Friday requires to produce the means of consumption. Robinson has no need of the former, but he has need of the latter. For Robinson, it appears that he “*sells*” his output to Friday, and so it does seem to provide him with a revenue. This is essentially the difference of how things appear from the standpoint of the individual capital, and of the social capital.

But, the basic and relatively straightforward relation between the production and exchange of means of production and consumption illustrated by Robinson and Friday is obscured, under capitalist production, because of the role of money in mediating these exchanges.

Its to elaborating the processes and effects of that which Marx now turns.

Marx describes the situation under capitalist production in similar terms to those above. In other words, just as for Robinson, a capitalist society has to devote a portion of its time to producing means of production as well as means of consumption, part of which is required to reproduce workers, and part of which is appropriated as surplus product consumed by non-producers.

The value of this total national output is equal to C' , the total national commodity-capital. That comprises both those commodities destined for consumption and those destined to

reproduce the means of production.

In other words, for the national commodity-capital, it is no different than for the commodity-capital of a firm. That we have seen is produced as follows. $M - C (L + MP) \dots P \dots C' - M'$. So, part of the value of C' is equal to the value of the means of production – constant capital – that went to produce it. Part is equal to the wages paid to the workers, which they spend buying commodities from society's consumption fund, and a part comprises the surplus value created by the workers, which the capitalists spend, also buying commodities from the consumption fund.

So, these are the same three funds that existed for Robinson and Friday. The *Law of Value*, which determines how much social labour-time is required for that production by them still determines how much is required under capitalism. As Marx says, in his letter to Kugelmann, it simply assumes a different form, the form of commodity production and exchange.

The difference is the way the capitalist society goes about producing those funds, and the consequences that then has for how these funds are distributed.

Marx has uncovered the specificity of capitalist production in *Volume I*. The task now is to uncover the specifics of the distribution of social capital. If the national output is nothing more than the total commodity-capital, C' , i.e. already incorporating the surplus-value, then the starting point is the circuit of commodity-capital itself. This is why Marx says that the *Physiocrats* were correct, as against Adam Smith, in that they began their analysis, of the exchange of the total social capital, not with this year's production, but with last year's harvest.

$$C' - \left\{ \begin{array}{l} M - C \dots P \dots C' \\ m - c \end{array} \right.$$

Here, as Marx explains, M has to be seen not simply as money-capital, but more accurately as the money equivalent of C . That is the money equivalent of the value of the productive-capital consumed in the productive-process. That is important, because the value of that capital may have changed for reasons outside its self-expansion. For example, suppose the capital produces yarn. It requires the purchase of cotton. But, if the labour-time required for producing cotton falls, then the value of C will fall. This fall in the value of the cotton will then be reflected in the price of the yarn. The nominal value of M will then fall, because M here is only the money equivalent of C , but the real value of M is unchanged, for the same reason. In other words, this lower value of M is able to exactly reproduce C , the physical quantity of cotton consumed in production.

Consumption necessarily plays a part in this for the reasons set out previously. In other words, at various points in this circuit, new circuits of commodities are established. For example, at P, both the workers spend their wages on commodities (necessities) and the sellers of means of production spend their receipts from the sale of commodities on commodities themselves, including labour-power, replacement materials, as well as articles of personal consumption. And at $M'(M + m)$, this individual capitalist not only spends M on buying C (productive-capital) but also spends m on articles of personal consumption, given that this is only simple reproduction. Under expanded reproduction, a portion of m would also be spent on commodities in the form of additional productive-capital.

So, the analysis, of this circuit of commodity-capital, at a social level, necessarily involves also an analysis of the circulation of money and commodities, for both productive and unproductive consumption.

To facilitate an understanding of these circuits, and exchanges, I have produced the diagram of the *Circuits of Capital and Money*, which describes this. (*Chart 1*)

The circuit of commodity-capital commences at C' , where the end product exists, and already embodies surplus value. In other words, it assumes capitalist production is already being undertaken. As we have seen, in previous chapters, we can then make several assumptions. Money already exists, and is here depicted as sitting in bank deposits. We can also assume that capitalists not only have sufficient money-capital to advance for the purchase of productive-capital, but they also have sufficient money to cover their own consumption needs, to buy commodities for personal consumption during the period until they receive payment for the commodities they sell. We can also assume that workers have not simply arisen from nowhere, but are the result of the long historical process discussed in *Volume I*, and so are able to offer their labour-power for sale as an advance to capital, prior to being paid for it at the end of the day, week or whatever period.

Similarly, capitalist producers have not simply arisen from nowhere, but are also the result of the same historical process, and so both means of production and consumption have evolved from being produced and provided by peasant and artisan producers, to now being produced and sold as commodities, capitalistically. That means that means of production and consumption already exist, and may already be in the hands of capitalists ready to be advanced. Indeed, that is one reason Marx refers to the *Tableau Economique* (*Chart 2*), whose starting point is last year's harvest, i.e. it assumes the existence of these stocks available to be advanced.

The consequence of these entirely reasonable assumptions is that the total value of commodity-capital at C' , can be bought with money resources held by workers and capitalists, i.e. with existing money funds, or from wages or surplus value. In reality, as was seen earlier those money funds are really primarily in the hands of capitalists, who advance it as capital and revenue, and in doing so also put a part of those money funds in the hands of workers, in the form of wages. These money funds flow from and through bank deposits, and as a money flow are indicated by the green line. The flow of capital-value is indicated by the red lines.

The result of the realisation of this commodity-capital (total national output) is M' , which also includes the surplus value. That surplus value, as described in previous chapters, is equal to the additional money that capitalists threw into circulation, to cover their own unproductive consumption, in the period while they were waiting to sell their commodities. In the conditions of simple reproduction, we are discussing, the surplus value, now reproduces that money, enabling the capitalists to once more throw it into circulation, to cover their personal consumption, in the next cycle.

At M' , for the reasons Marx described earlier, the circuit of money-capital ends. Its circuit always starts with M never with M' . $M - C - M$, is always the circuit of newly invested money capital, not the circuit of industrial capital in the process of reproduction, whether it is simple reproduction or expanded reproduction. Under expanded reproduction, as Marx showed earlier, what we really have for money capital is two circuits. The first circuit $M - C - M$, ensures that the productive capital consumed is physically reproduced. So, if the value of that productive-capital has changed, this is reflected in the values retrospectively. But, the surplus value accumulated forms a new circuit of money capital $m - c - m$, where this is not the case. This money-capital buys productive capital at its current value. So, this m will buy a greater or lesser physical quantity of productive-capital, c and v , dependent upon whether its price has fallen or risen.

So, if £1,000 was paid for 1000 kilos of cotton, and £1000 for labour-power, with a 100% rate of surplus value, we would have $- c 1000 + v 1000 + s 1000 = C 3,000$. But, if the price of cotton doubled after it was bought, but before the completed yarn was sold, this would be retrospectively reflected in these values. So, $c 2000 + v 1000 + s 1000 = C 4000$. The yarn would now sell for £4,000, and thereby enable the same quantity of cotton and labour-power to be bought, as in this cycle. However, if all of s is accumulated, it is clear that this is not the case, for this new additional capital value. Previously, (M)£1,000 bought 1000 kilos of cotton, and now M still buys 1000 kilos of cotton, but the £1,000 of surplus value becomes $m - c - m$, and here in this new circuit of money capital, m only buys 500 kilos of cotton.

So, the circuit of money-capital ends at M' . It is deposited in the bank, awaiting its future destiny. Here bank deposits are a sort of *Black Box*. That is, the true nature of what is inside is not determined. It is the equivalent of the uncertainty principle in physics. Like Schrodinger's cat, the condition of the money inside remains undetermined until it is observed. It exists in limbo as a money hoard, that might be money-capital, or else might be simply money to be used as revenue.

But, we are examining the circuit of commodity-capital, not money-capital, and that proceeds from C' to C' . In the simple reproduction model we have assumed, the same value of money-capital comes out of bank deposits, as was originally used as money-capital at the start of the previous circuit of money-capital, that started at M . By definition, this means that because $M' = M + m$, an amount of money equal to m , remains in bank deposits, and can once again be used by capitalists to purchase their own personal consumption needs.

M now purchases the same quantity of means of production and labour-power as in the original circuit $- C$. This is indicated by the red lines $M - C$ (MoP and LP). These are red lines, because although the payment is necessarily in money, it is money-capital, i.e. capital-value in money form. The capital-value, previously inhabiting the money-capital, now abandons it, and is metamorphosed into productive-capital. But, as seen previously, there is a difference here between the exchange between this capital, and the workers, and between the capital, and the producers of means of production.

The exchange between this capital and labour is an exchange between capital and revenue. The workers sell a commodity, labour-power, that is not capital. It produces no surplus value for the worker when they sell it. In exchange for this commodity, they obtain not money-capital, but money, as revenue. What was money-capital, for the capitalist, in the same exchange is metamorphosed into productive-capital, in the shape of labour-power. This labour-power, in the hands of the capitalist is capital, even though it was not for the worker. For the capitalist, it is the means of expanding value, via the creation of surplus value.

However, the producer of means of production is not merely exchanging a commodity for money. For them, the commodities they are selling constitute a part of their capital – the commodity-capital. When they sell them, they metamorphose their capital value from that of commodity-capital into money-capital, or at least potential money-capital. In the same way, the capitalist buying these means of production, metamorphoses their money-capital into productive-capital, via this exchange. The exchange between these two capitals, therefore, is an exchange of capital with capital, not of capital with revenue.

The buyer of the means of production, however, does not buy productive-capital. They buy merely commodities, albeit commodities that already contain surplus value, and form the commodity-capital of some other capitalist. These commodities, like the labour-power, only become productive-capital in the hands of the buyer, to the extent that they are employed productively. In the same way, the seller of means of production does not obtain money-capital, from the buyer, but only money. It only becomes money-capital in their hands, if it is again used to buy productive-capital.

The money now begins its own new independence and circuit. This is indicated by the green money flow line from productive-capital, K, to bank deposits. In other words, this represents the myriad of separate circuits of money and commodities that result from these payments. Workers deposit their wages in the bank, and from there make numerous purchases of commodities, to meet their needs. In fact, those purchases are themselves represented by the green line from bank deposits to C', the commodity-capital.

But, also the capitalists selling means of production, put their money receipts into the bank, and from there pay for their purchases, be they for labour-power or for their own means of production, or for their own personal consumption. Given that C' is equal to K plus the surplus value produced in the production process, we can now see that both an equivalent amount of value is created to be exchanged with it, and a sufficient amount of money equal to this value exists with which to purchase it. The wages paid to workers, and the receipts of capitalists that come out of K, are equal to the capital-value they transfer to the end product. The money equivalent of that exists in bank deposits available to purchase commodities equal to that value. That leaves those commodities that are equal to the surplus value produced, but an amount of value, and of money equal to that amount was deposited in the bank at the start, i.e. m, which was the residual from M'.

Returning to the flow of capital, the productive-capital, engages in the production process, and as a result, surplus value is created by labour. The capital-value now exits the productive-capital, and enters the newly produced commodity-capital. So, now the circuit is complete. All output can be exchanged, and fully accounted for. That, of course does not mean to say that it is. We only have here a potential for these exchanges to occur. Similarly, the purchases undertaken from C' might be accomplished using either commercial or consumer credit. That opens a series of further complications. For example, potential deficiencies in demand resulting from some consumers (productive or unproductive) choosing not to buy, might be balanced by others choosing to buy using credit rather than their own revenue. It also opens the potential for higher monetary demand than the amount of value thrown into circulation as supply. The consequences of that, which might be inflation or else the stimulation of increased output, cannot be discussed here.

*“In the circuits $M — C \dots P \dots C' — M'$ and $P \dots C' — M' — C \dots P$, the movement of the **capital** is the starting and finishing point. And of course this includes consumption, for the commodity, the product, must be sold. When this has assumedly been done it is immaterial for the movement of the individual capital what becomes of the commodities subsequently. On the other hand in the movement of $C' \dots C'$ the conditions of social reproduction are*

discernible precisely from the fact that it must be shown what becomes of every portion of value of this total product, C'. In this case the total process of reproduction includes the process of consumption brought about by the circulation quite as much as the process of reproduction of the capital itself.” (p 396-7)

Up until now, Marx's analysis has been from the perspective of “*many capitals*”, i.e. of the individual firm, and could simply assume that its output could be sold, and that having done so, it could find productive-capital available to buy. But now, starting to look at the process from the perspective of the total social capital, “*capital in general*”, this is not possible.

I hope *Chart 1* will assist in understanding these processes and models of reproduction that Marx now moves on to develop. Of course, demonstrating that alongside the creation of value, money flows are also generated, that make the purchase of capital and commodities possible, does not mean they occur automatically.

In order to understand those processes would also require an investigation of the laws of supply and demand, of demand elasticity, competition and so on, that Marx could only have developed much later, and never completed. But, he did need to touch upon some of these issues in explaining the basis of various forms of capitalist crisis.

“For our present purpose this process of reproduction must be studied from the point of view of the replacement of the value as well as the substance of the individual component parts of C'.” (p 397)

All of the materials used in production, as well as the machines and buildings etc., are just as much a part of the national output as the end products they produce. That end product, when sold by its producers, provides the money-capital used to buy these commodities from the producers of means of production. So, there is a constant interaction and intermingling of these capitals. But, as seen previously, it is an exchange of capital with capital, not capital with revenue. Within the context of simple reproduction, it is simply a maintenance of existing capital, not the creation of some new revenue that can be consumed.

But, as shown in the diagram, it is not just the reproduction of the means of production that results in this intermingling. The workers and capitalists also use their revenues to buy commodities for consumption, and those commodities are necessarily a part of society's commodity-capital.

*“The question that confronts us directly is this: How is the **capital** consumed in production replaced in value out of the annual product and how does the movement of this replacement intertwine with the consumption of the surplus-value by the capitalists and of the wages by the labourers?” (p 397)*

Marx uses the usual simplifying assumptions that this is simple reproduction, commodities exchange at their values, no changes in values, and so on, though he does describe why none of these things make any fundamental difference to the analysis.

“So long as we looked upon the production of value and the value of the product of capital individually, the bodily form of the commodities produced was wholly immaterial for the analysis, whether it was machines, for instance, corn, or looking glasses. It was always but a matter of illustration, and any branch of production could have served that purpose equally well. What we dealt with was the immediate process of production itself, which presents itself at every point as the process of some individual capital...This merely formal manner of presentation is no longer adequate in the study of the total social capital and of the value of its products. The reconversion of one portion of the value of the product into

capital and the passing of another portion into the individual consumption of the capitalist as well as the working-class form a movement within the value of the product itself in which the result of the aggregate capital finds expression; and this movement is not only a replacement of value, but also a replacement in material and is therefore as much bound up with the relative proportions of the value-components of the total social product as with their use-value, their material shape.” (p 398)

In other words, you can't just assume that the production of value over here can be automatically exchanged for an equal amount of value over there. The owners of the use values in which this value resides will only exchange if they obtain the use value they require as a result.

Marx describes this in *Theories of Surplus Value*.

“The value supplied (but not yet realised) and the quantity of iron which is realised, do not correspond to each other. No grounds exist therefore for assuming that the possibility of selling a commodity at its value corresponds in any way to the quantity of the commodity I bring to market. For the buyer, my commodity exists, above all, as use-value. He buys it as such. But what he needs is a definite quantity of iron. His need for iron is just as little determined by the quantity produced by me as the value of my iron is commensurate with this quantity.

It is true that the man who buys has in his possession merely the converted form of a commodity—money—i.e., the commodity in the form of exchange-value, and he can act as a buyer only because he or others have earlier acted as sellers of commodities which now exist in the form of money. This, however, is no reason why he should reconvert his money into my commodity or why his need for my commodity should be determined by the quantity of it that I have produced. Insofar as he wants to buy my commodity, he may want either a smaller quantity than I supply, or the entire quantity, but below its value. His demand does not have to correspond to my supply any more than the quantity I supply and the value at which I supply it are identical.”

(Theories of Surplus Value, Chapter XX)

There is no point producing lots of machines, if what is really required is lots of grain. Moreover, there will be necessary proportions that some commodities will need to be produced in, in order to meet the requirements of producing other commodities. If you want to produce a certain quantity of bread, you have to produce a certain quantity of wheat, for example.

At its most fundamental level, this question of proportion comes down to that already highlighted, that between the production of means of production and means of consumption. The most basic requirement of any society, is to devote enough social labour-time to producing means of consumption, without which its people cannot live, and so cannot produce. But, even the most primitive society also has to produce means of production, as tools, and weapons for hunting. The more a society develops, and expands its range of needs, the more it has to expand its production of means of production, in order thereby to expand its means of consumption.

Marx then divides social production into these two great departments. **Department I** produces means of production, and **Department II** produces means of consumption.

II. The Two Departments of Social Production

All of the production of industries within the economy can be grouped together as part of these two departments. Obviously, the production of some industries can go to either means of production or means of consumption. Coal can be used as means of production, to power steam engines, or means of consumption, as fuel for domestic fires, for example. But, the output of all these industries can be divided as belonging to either of these two departments.

The point is perhaps more clearly stated by the fact that all commodity-capital in the economy constitutes either means of production or means of consumption. Similarly, all of this capital, composing the two departments, in aggregate, comprises one single department, which is the total social capital.

The capital employed, by either department, breaks down into the same two components – variable capital and constant capital. The variable capital, considered solely from the standpoint of value, is equal to the sum of the wages paid within that department. Considered from the material point of view, it comprises all the concrete labour employed within the department. Its equivalent is all of that stock of commodities, in the ownership of capital, required for the reproduction of labour-power – which thereby also constitutes the value of labour-power. The reason that it is a variable-capital, is that, on the one hand, the value of this stock of commodities is a fixed amount (assuming no change in social productivity), but the new value produced by the concrete labour is not. It is the difference between this new value created, determined by the amount of new labour undertaken, and the value of the variable-capital, which constitutes the surplus value.

The constant capital comprises all of the materials and instruments of labour, including buildings etc. used in production. However, although the fixed capital component of this is employed, i.e. it has to be present in its entirety, for production to occur, as seen previously, it only transfers part of its value to the end product, or here to the value of the commodity-capital of the department. Only that part of the constant capital that replaces the circulating capital, and that reproduces the fixed capital value, transferred as wear and tear, is included in the value of the commodity-capital.

“The value of the total annual product created with the aid of this capital in each of the two departments consists of one portion which represents the constant capital c consumed in the process of production and only transferred to the product in accordance with its value, and of another portion added by the entire labour of the year. This latter portion is divided in turn into the replacement of the advanced variable capital v and the excess over and above it, which forms the surplus-value s . And just as the value of every individual commodity, that of the entire annual product of each department consists of $c + v + s$.” (p 400)

For now, for ease of elaboration, Marx excludes fixed capital, assuming that the constant capital employed is all consumed in the production of the commodity-capital.

Marx sets out a basic model comprising these two departments and the mutual exchange between them. These models, whether they are of simple reproduction, as here, or of expanded reproduction, which will be discussed later, show that the output of both departments *can* be exchanged so that it is fully consumed. In other words, these models are based on a concept of a general equilibrium theory.

But, of course, Marx did not believe that any such equilibrium exists. His theory is, in fact, a theory of dynamic disequilibrium. That is not just because he recognises that capitalism proceeds on the basis of repeated crises, which are violent means of resolving the contradictions inherent in the very functioning of the system, but also because even without

such crises, the continual revolution of production, which is a fundamental part of the functioning of the system, necessitates continual changes in the way capital and social labour-time is allocated.

So, whether it is in setting out these models here, or in setting out the resolution of the *Transformation Problem*, in *Volume III*, the fact that Marx has all of the output being unproblematically demanded/consumed does not at all mean that he believed it would be.

In fact, Marx was well aware that whilst social value/exchange value is objectively determinable, the level of demand is subjective, as the quote from *Theories of Surplus Value 3*, set out earlier, illustrated. Marx emphasises that point further. He writes,

“The same value can be embodied in very different quantities [of commodities]. But the use-value—consumption—depends not on value, but on the quantity. It is quite unintelligible why I should buy six knives because I can get them for the same price that I previously paid for one.”

(Theories of Surplus Value, Chapter XX)

The social value of a Sinclair C5 is objectively determinable on the basis of the labour-time required for its production. But, if potential consumers decide it has very little use value, for them, they will not buy it. In fact, this subjective valuation of it will feed back into the objective valuation too, because for Marx, it is only socially necessary labour-time that counts. Commodities that are produced and not demanded have no exchange value, however much labour-time was used in their production, because it was not socially necessary.

These were issues that Marx could only come to much later, in concretising his theory, but which he did not live long enough to complete. His models here, as with his solution of the transformation problem, are then at a high level of abstraction, designed to illustrate that, under a series of simplifying assumptions, one of which is general equilibrium, all output can be exchanged.

The model presented is:

Department I:

Capital Employed – $c\ 4000 + v\ 1000 = 5000$

Output/Commodity - Product $c\ 4000 + v\ 1000 + s\ 1000 = 6000$

Department II:

Capital Employed – $c\ 2000 + v\ 500 = 2500$

Output/Commodity Product – $c\ 2000 + v\ 500 + s\ 500 = 3000$

For greater realism, the above figures can be considered to be £ billions.

So, the capital employed is £7,500, and it produces a total national output of £9,000. A surplus value of £1,500 has been produced, which is equal to a 100% rate of surplus value on the £1,500 of variable capital employed - £1,000 in **Department I**, £500 in **Department II**.

Thinking about this in similar terms to the Robinson Crusoe/Man Friday example, Robinson produced the means of production, and Friday the means of consumption. So, Robinson

produces the fishing nets, bow and arrow etc. that Friday needs to hunt and fish. Robinson exchanges these means of production with Friday, who in turn provides Robinson with the fish and game he requires to live. Robinson maintains the capital, Friday produces the revenue.

The only difference in the model presented is in the existence of a surplus product and surplus value. Friday produces a surplus over and above his own requirements, but it is not a social surplus, because it has to cover Robinson's consumption needs. If Robinson did not produce means of production, that is time Friday would have to spend in that pursuit.

But, in the model above, the workers in **Department II** not only have to produce a surplus product over their own needs, so as to cover the consumption needs of workers in **Department I**, providing them with the necessary means of production, they also have to produce a further surplus amount to cover the consumption needs of the capitalists in both departments.

So, if we look first at **Department II**, the workers there produce means of consumption with a value of £3,000. We can now see where the demand for this output comes from.

Department II comprises all those firms producing a range of articles for consumption, from food to motor cars. So, all this is saying is that £500 of demand arises here within the department, as workers producing food buy cars, and vice versa etc.

Similarly, workers producing a range of means of production, in **Department I**, use their wages to buy consumer goods from **Department II**. The capitalists in both departments use their surplus value to do likewise.

But, in order for the workers and capitalists in **Department I** to buy these consumer goods, they first have to receive their wages, and possibly their profits. The latter is only possible, because, as seen previously, the capitalists have money to cover their expenditure on consumption needs during that time when they are waiting to sell their commodities. The surplus value when realised always recovers this money thrown into circulation.

How can the workers in **Department I** receive their wages without the capitalists selling their output? How can they sell their output without the capitalists in **Department II** selling theirs first?

Once again, we see the importance of Marx's reference to the "*Tableau Economique*". It indicates that social production does not simply start from a blank sheet of paper. Commodities already exist in stocks held by capitalists, be those commodities means of production or consumption. Money also exists in the hands of capitalists ready to be advanced to buy capital, or to cover the costs of capitalists' consumption.

So, for example, the workers in **Department I** might be "*advanced*" a week's wages with which to buy consumer goods, already in the possession of **Department II** capitalists. In fact, because workers are always paid in arrears, when they are "*advanced*" their wages at the end of the week, they have already advanced a week of their labour-power to capital. That in itself means that a week's production is already in existence, thereby replacing commodities used up.

I'll work through my own example here, based on Marx's model, in the hope of trying to simplify the explanation. Then I'll summarise Marx's own examples.

The workers in **Department I** might be advanced a week's wages, here equal to £20. With those wages, they can buy consumer goods. Similarly, the capitalists in **Department II** advance their workers a weeks wages equal to £10, which they similarly can use to buy consumer goods.

But, similarly, the capitalists advance capital for the purchase of means of production. Capitalists in neither department, after all, can continue producing without them. Even if they have means of production already in stock, they have to advance capital to replace them, as they are consumed.

So, capitalists in **Department II** will advance, for this week, £40 for materials, equipment etc. to be provided by **Department I** capitalists. **Department I** capitalists will advance £80 for means of production. Some of that will mean, for example, coal producers buying steel from steel producers for pit props etc., while steel producers buy coal from coal producers, as well as coal producers using some of their own coal to power steam engines, and steel producers using some of their own steel to repair equipment and so on.

So, although this capital circulates between different capitalists, it only circulates within **Department I** and is not exchanged with **Department II**. It never, therefore forms a revenue with which to buy consumption goods.

As seen previously, in starting a business, the capitalist will need enough money not only to advance as capital, but also to cover their own consumption, during the year, until they are able to sell their output and realise their surplus value. So, the capitalists in both departments throw this money into circulation, which provides the demand for the surplus production of consumer goods. We will see later how capitalists in both departments recover this through the realisation of surplus value in their commodities.

Let's start in **Department II**. The capitalists there advance £40 for means of production. We can even imagine this is the start of capitalist production, and they buy these means of production, e.g. wheat, from peasant commodity producers. The **Department II** workers advance a week's labour to the capitalists, and process means of production. Again, we could imagine that the workers are able to advance this week's labour, because they have recently come from the countryside, and brought some means of subsistence with them. Or we could simply assume they have borrowed money to cover their immediate needs. The workers are paid £10 wages at the end of the week.

At the end of this week, **Department II** capitalists have advanced £40 for means of production, and £10 for wages. Their workers have transformed these means of production and created new commodities with a value of £60, which includes a surplus value of £10. The workers in **Department II** are then able to consume some of the products they have made up to a value of £10, the amount of their wages. The capitalists in **Department II** also throw into circulation the £10, they have reserved to cover their consumption. So, £20 of consumption goods have now been demanded, bought and consumed. That leaves a further £40 of commodities, out of the £60 of production, in the hands of **Department II** capitalists.

The producers of means of production have already been paid £40 for means of production, by **Department II** capitalists. This now provides them with the money to buy the remaining £40 of means of consumption from **Department II**.

For completeness, this was considered to be peasant producers, but on the assumption of existing capitalist production, this £40 would actually be made up of £20 demand from

Department I workers (paid to them as wages) and £20 from **Department I** capitalists (paid out of their realised surplus value). So we would have:

Looked at from the perspective of **Department I**, then, its workers also advance a week's labour-power. Some of this time, in aggregate, will be required to produce means of production to be used within **Department I**, for example, producing seeds to grow crops, coal to produce steel, steel to produce machines and so on. This will amount to £80. As stated previously, this is an exchange of capital with capital inside **Department I**. No exchange with **Department II** occurs here. No revenue arises from it to buy **Department II** commodities. If **Department I** were thought of as a single firm, its like the coal mine that uses some of its own coal to power the steam engines that pump water from the mine.

Another part of **Department I** output will amount to the production of means of production required by **Department II**, intermediate production, which amounts to £40, as seen above. Where the £80 is replacement of existing constant capital value, this £40 is new value created by labour and divided £20 wages and £20 surplus value, as described above.

The £80 required within **Department I** will be bought by **Department I** capitalists with their advanced capital. In other words constant capital in one commodity form is simply metamorphosed into constant capital in another commodity form, e.g. coal into steel, steel into coal. The £40 of means of production sold to **Department II** capitalists, as was seen above, was sold to them using the capital advanced by them. At the end of the week, the workers in **Department I** are advanced £20 in wages, which covers their purchases of consumer goods in week 2.

When **Department I** sells its commodities, this £20 is recovered, as is the £20 the **Department I** capitalists laid out to cover their own consumption, during this period, because their output includes the surplus value in its price.

Having set out one way in which these exchanges can occur, I will now try to summarise Marx's own example, using these models. What this demonstrates, as does Marx's own examples, is that there is no single path by which these exchanges unfold. An important point to note is that the money capitalists throw in, to cover their own consumption, provides the monetary demand that enables the realisation of their surplus value. In so doing, the money they throw in, for that purpose, flows back to them as realised surplus value. Additionally, the money-capital advanced as variable capital also flows back to them. In the case of **Department II** capitalists, it flows directly back, as its workers buy means of consumption. In the case of **Department I** capitalists, it flows back only indirectly, because its workers buy consumer goods, from **Department II**, thereby realising the equivalent value of constant capital (means of production), consumed by **Department II**, in its production. That value thereby flows back, to **Department I**, for the purchase of those means of production.

Looking at this flow we have: £1,000 of **Department I** wages buy **Department II** consumer goods, $M - C$. These goods contain surplus value, and so appears as $C' - M'$, from the perspective of **Department II**. M' is equal to $M + m$. M is used, by **Department II** capitalists, to buy replacement constant capital, from **Department I**, $M - C$, for the means of production, consumed in the production of the commodities, sold to **Department I** workers, and replacement labour-power for that similarly used. But from M' , $(M + m)$ **Department II** now has m left over. That is spent within **Department II**, by capitalists, for consumer goods.

Marx begins his example by setting out the exchange that takes place between the two departments. So, in **Department I**, it produces means of production that it exchanges with

Department II. The value of these means of production equals £2,000. It is divided into £1,000 paid to workers as wages, and £1,000 of surplus value appropriated by capitalists. If there were no money involved, we could picture **Department I** handing over these means of production, and **Department II** handing over consumer goods, of an equal value, which are then distributed £1,000 to **Department I** workers and £1,000 to **Department I** capitalists.

In reality, the means of production are sold to **Department II** capitalists. £2,000, in money, is handed over, and £1,000 of this is paid as wages to **Department I** workers, **Department I** capitalists keeping the other £1,000 as profits. **Department I** workers and capitalists then spend this £2,000 buying **Department II** consumer goods.

Of the total value of consumer goods, produced by **Department II**, which amounts to £3,000, £2,000 was itself made up of the constant capital used in their production. In selling this £2,000 of consumer goods, to **Department I**, therefore, it has recovered and replaced all of the constant capital it has consumed, and, thereby, has means by which to continue production, on the same scale, in that respect. To do so, of course, it also has to recover the value of the labour-power, used up in that production, alongside the surplus value.

As described earlier, the surplus value, produced by workers in **Department I**, does not flow back directly to **Department I** capitalists. They advance £1,000 in wages, to their workers. But, the workers do not buy **Department I** goods. The money goes to buy **Department II** consumer goods. However, the value, of these consumer goods, is partly made up of the constant capital, used in their production. Part of the value, of that constant capital, is itself attributable to the variable capital, used in its production. That variable capital (£1,000) is the same amount as the wages now spent to buy the equivalent portion of consumer goods. In other words, **Department II** used £2,000 of constant capital. £1,000 of that value is attributable to the (**Department I**) variable capital, advanced for its production. In selling £1,000 of consumer goods, therefore, to **Department I** workers, **Department II** recovers that portion it needs to lay out for constant capital, to replace that part of the value of that constant capital, which is equal to its value attributable to **Department I** variable capital. When it spends that money, on constant capital, the £1,000 flows back to **Department I**, thereby replacing the £1,000 it had laid out in variable capital. The same process applies to the surplus value produced by **Department I** workers and which is used by **Department I** capitalists to buy consumer goods from **Department II**.

Department I capitalists and workers have between them bought £2,000 of consumer goods. **Department II** capitalists received this £2,000 and used it to replace the constant capital used in their total production. By the same token, then, the **Department I** capitalists have received £2,000 from **Department II** capitalists in exchange for the means of production, they have bought. £1,000 of this replaces the variable capital laid out for labour-power, and the other £1,000 goes to replace the £1,000 they had spent to cover their own consumption needs – equal to their surplus value.

Of the remainder of **Department II's** output, (£1,000) it is consumed by the workers and capitalists in **Department II** itself. **Department II** workers are advanced £500 in wages, which is equal to the value of the variable capital. They spend this £500 on **Department II** commodities. **Department II** capitalists have thrown £500 into circulation to cover their expenditure on consumer goods, and this returns to them in the surplus value they realise on the sale of their own commodities.

Marx then looks in more detail at the money thrown in by both **Department I and II** capitalists that realises the surplus value.

“As for the money required to exchange the s-portion of commodity-capital I for the second half of constant capital II, it may be advanced in various ways. In reality this circulation embraces innumerable separate purchases and sales by the individual capitalists of both categories, the money coming in any event from these capitalists, since we have already accounted for the money put into circulation by the labourers. A capitalist of category II can buy, with the money-capital he has besides his productive capital, means of production from capitalists of category I, and, vice versa, a capitalist of category I can buy, with money-funds assigned for personal and not for capital expenditure, articles of consumption from capitalists of category II.” (p 403-4)

Consequently, we can examine these exchanges separately. We would then have a situation where **Department I** workers have been advanced £1,000, which they have used to buy **Department II** commodities. The capitalists in **Department II** use this to buy £1,000 of means of production from **Department I**. With the additional money at their disposal, they throw in a further £500 (equal to their surplus value) to buy additional means of production. It has thereby replaced 3/4 of its constant capital.

With this extra £500, it has received, capitalists, in **Department I**, then buy consumer goods to meet their personal needs.

“... thereby completing for one half of the s-portion of its commodity-capital the circulation $c — m — c$, and thus realising its product in the consumption-fund.” (p 404)

Department II then has this £500 as money-capital in addition to its productive-capital. It uses that £500 to buy means of production, thereby completing the replacement of all its constant capital.

“In the last analysis the two departments have mutually paid one another in full by the exchange of equivalents in the shape of their respective commodities. The money thrown into circulation by them in excess of the values of their commodities, as a means of effecting the exchange of these commodities, returns to each one of them out of the circulation in proportion to the quota which each of the two had thrown into circulation.” (p 405)

Department I capitalists then have this additional £500 to use to buy the other consumer goods they require, so that their surplus value has been used to meet their consumption needs.

The following equation results: $I (v + s) = II (c)$.

IV. Exchange within Department II.

Necessities of Life and Articles of Luxury

The workers, within **Department II**, have created a new value that exists in the form of physical products. Its value is equal to the variable capital expended for its production plus the surplus value created by the workers. The workers, who only buy **Department II** consumer goods, spend these wages on a portion of these consumer goods they have produced. The proportion is equal to that new value that represents the variable capital. In other words, the new value created was equal to £1,000. Of this £1,000, 50% or £500 was attributable to the variable capital. The **Department II** workers spend £500 in buying consumer goods, i.e. 50% of the new value they have created.

In the same way, because we have assumed simple reproduction, the capitalist uses the surplus value, they have appropriated, to purchase commodities of an equal value to the surplus value created by **Department II**. So, whilst I ($v+s$), the new value produced in **Department I**, accounts for the value of constant capital in **Department II** output, II ($v+s$) accounts for the new value of commodities created in **Department II**. So, the source of demand for all of the value of **Department II** ($c+v+s$) is accounted for.

The **Department II** capitalists get back in money, from **Department II** workers, exactly the same amount from the sale of commodities to them, that they had paid them in wages. Its as if they had simply paid those workers directly with a proportion of the commodities the workers had themselves produced.

Whilst **Department I** commodities are only bought by capitalists, **Department II** commodities are bought by workers and capitalists. But, there is a huge variety of products included within **Department II**, some of which, in reality, will only ever be bought by capitalists, or certainly at any particular time, that will be the case. In other words, **Department II** includes not just the production of essential consumer goods, it also includes the production of luxury goods. The reason for the caveat above is, of course, because what is considered a luxury at any one time, may not be so later, when increases in productivity have reduced the price of once luxury goods, and brought them within the reach of everyone. In fact, capital increasingly has to seek to sell this wider range of use values to workers. This is the process that Marx refers to as "*The Civilising Mission of Capital.*"

So, if **Department II** is divided into **Ila**, producing necessities, and **Ilb**, producing luxury goods, the variable capital advanced for the production of **Ila** will all flow back to it directly. The workers in **Ilb**, however, do not buy the luxury goods they produce. So, as with **Department I** workers, the process by which the variable capital advanced to them flows back, is not direct.

The new value produced in **Ilb** is equal to **Ilb** ($v+s$). The new value, produced by **Department II**, is, as seen earlier, equal to £1,000 ($500 v + 500 s$). We can now divide this again so that 400 v and 400 s are attributable to **Ila**, the production of necessities, and 100 v and 100 s attributable to **Ilb** luxuries.

The **Ilb** workers, with their £100, buy goods from **Ila**. With this £100, the **Ila** capitalists buy luxury goods from capitalists in **Ilb**. By this means, the £100 paid by **Ilb** capitalists to their workers flows back to them having first passed through the hands of **Ila** capitalists.

Ila workers spend the £400 in wages they have received, and buy necessities from **Ila** capitalists. So, the capital advanced by **Ila** capitalists, for wages, flows back to them as money.

So,

However, its clear that capitalists in **Ila** and **Ilb** will not allocate their spending in this way. We can assume that they will allocate their surplus value, between necessities and luxuries, in the same proportion, whether they are **Ila** or **Ilb** capitalists.

So, if they allocate 60% to necessities and 40% to luxuries, capitalists (**Ila**) would spend £240 on necessities and £160 on luxuries, whereas capitalists (**Ilb**) would spend £60 on necessities and £40 on luxuries.

Of the £400 of surplus value for **Ia** capitalists, £100 was provided in money by **Ib** workers, who bought necessities from them. The **Ia** capitalists used this to buy luxuries from **Ib** capitalists. Similarly, we can now see that **Ib** capitalists buy £60 of necessities from **Ia** capitalists, providing them with another £60 of their surplus value, they spend on luxuries.

So we then have:

That explains where the demand for the new value created in **Department II** comes from, and how it is fully consumed by workers and capitalists, and how luxuries and necessities are consumed by **Department II** capitalists. But, of course there are the **Department I** capitalists, who exchanged their surplus with **Department II**.

The exchange of **Department I** ($v+s$) with **Department II** (c) has been explained, but within this there is the exchange of $l(s)$ between **Ia** and **Ib**. **Department I** (v) will only have been exchanged with **Department II** necessities. But, in the same way, the portion of value comprising $l(s)$ within $II(c)$, can be divided 60:40 in the same way as with **Department II** (s).

So, the **Department II** constant capital was £2,000. The capital value itself forms part of the total value of **Department II** production. Workers in **Department I** only buy necessities and so their £1,000 is used to buy commodities from **Ia** to that amount. Capitalists from **Ia** use this to buy £1,000 of constant capital from **Department I** capitalists. The wages paid by **Department I** capitalists have then returned to them in money form, available to buy labour-power once more.

Department I capitalists allocate their surplus value 60:40. They spend £600 on necessities with **Ia**. **Ia** capitalists use this to buy £600 of constant capital. **Department I** capitalists then have £600 returned to them, of the £1,000 they have thrown into circulation to cover personal consumption. They also spend £400 buying luxuries from **Ib** capitalists, who use it to buy constant capital. **Department I** capitalists then now have all of the £1,000 thrown into circulation to cover personal consumption returned to them, which is now available for them to spend again in the next cycle.

“What is arbitrary here is the ratio of the variable to the constant capital of both I and II and so is the identity of this ratio for I and II and their sub-divisions. As for this identity, it has been assumed here merely for the sake of simplification, and it would not alter in any way the conditions of the problem and its solution if we were to assume different proportions.”
(p 411)

Marx draws two conclusions.

1. The new value created in **Department I** in a year, i.e. $v+s$, in the form of means of production, is equal to the means of production consumed by **Department II** and thereby transferred to the value of its product.

“If it were smaller than IIc , it would be impossible for II to replace its constant capital entirely; if it were greater, a surplus would remain unused. In either case, the assumption of simple reproduction would be violated.” (p 411)

2. Workers producing luxuries in **Department Ia** can only transform their wages into necessities to the extent that capitalists producing necessities use an equal amount of their surplus value to buy luxuries. That proportion must be smaller than **Ia** surplus value.

These proportions, though variable are determinant, because the above has demonstrated that output from one department, or subdivision of one department, can

only be fully exchanged if the output from the other department or subdivision is in the corresponding proportion.

“It goes without saying that this applies only to the extent that it all is really a result of the process of reproduction itself, i.e., to the extent that the capitalists of IIb, for instance, do not obtain money-capital for v on credit from others. Quantitatively however the exchanges of the various portions of the annual product can take place in the proportions indicated above only so long as the scale and value-relations in production remain stationary and so long as these strict relations are not altered by foreign commerce.” (p 412)

Marx then returns to the contradiction in Adam Smith's argument, in which the value of commodities resolves itself into wages and surplus value.

“This absurdity is indeed found in Adam Smith, since with him wages are determined by the value of the necessities of life, and these commodity-values in their turn by the value of the wages (variable capital) and surplus-value contained in them.” (p 412-3)

Smith forgets, says Marx, that in simple commodity exchange its only the total production cost that counts, and how that breaks down into necessary or surplus labour-time, or paid and unpaid labour, is irrelevant to the exchange value of the commodity. It is also irrelevant to its value whether that commodity is consumed after it has been sold or is used as productive-capital by the purchaser.

“This is in no wise altered by the fact that in the analysis of the circulation of the total annual social product, the definite use for which it is intended, the factor of consumption of the various component parts of that product, must be taken into consideration.” (p 413)

In order for the exchanges to take place in the model above, it is not necessary that the capitalists actually do allocate their spending on consumption goods in the way described. They may, in aggregate, demand more or less luxury goods, or necessities. The **Department I** capitalists may demand more luxury goods than **Department II** capitalists, and **Department II** capitalists in **Ila** and **Ilb** may demand different proportions. Whatever these proportions, the levels of supply will simply be adjusted to correspond. It is the total level of surplus value that is determinate.

“On the basis of simple reproduction it is merely assumed that a sum of values equal to the entire surplus-value is realised in the consumption-fund. The limits are thus given.” (p 413)

This illustrates the interaction of the objective and subjective elements in Marx's theory. The actual value relations are objectively determinable, but no objective basis for determining how capital will be allocated, resulting from that, exists because that depends not upon objective value relations alone, but on consumer preferences. There is no objective basis for determining what proportion of surplus value capitalists will spend on luxuries as opposed to necessities. Orthodox, bourgeois economics has spent literally billions on research to try to uncover the psychological basis of “*marginal utility*” largely without success.

In a sense, it does not matter, and as far as these consumer preferences are concerned, Marxists can simply agree with the *Austrian School* that “*people act*”. In other words, consumers make decisions over what to buy, and why they make this choice rather than some other is irrelevant. Unlike the *Austrians*, however, Marxists do not see these individual consumer decisions as determinant of prices, only of the level of demand at prices that have already been determined by value relations.

Prices are a function of value, which is objectively determined. Consumer preferences only then determine the levels of demand at those prices. Capital is then allocated accordingly so that demand at that price is satisfied. In short, transformed values (prices of production) determine market prices; consumer preferences, determine demand for commodities at those prices of production; demand determines the allocation of available social labour-time (supply). No general equilibrium is possible, because technological change continually alters values, and continually changing consumer preferences alters levels of demand.

In the above model, the more capitalists from **IIa** (production of necessities) spend on luxuries, the less they spend on necessities. That means higher demand for luxuries, and more capital allocated to this production. In turn, that means more workers employed in luxury goods production, and fewer in producing necessities, but it doesn't change the fact that those workers continue to spend their wages on necessities.

*“Every crisis at once lessens the consumption of luxuries. It retards, delays the reconversion of (IIb)_v into money-capital, permitting it only partially and thus throwing a certain number of the labourers employed in the production of luxuries out of work, while on the other hand it thus clogs the sale of consumer necessities and reduces it. And this without mentioning the unproductive labourers who are dismissed at the same time, labourers who receive for their services a portion of the capitalists’ luxury expense fund (these labourers are themselves **pro tanto** luxuries), and who take part to a very considerable extent in the consumption of the necessities of life, etc. The reverse takes place in periods of prosperity, particularly during the times of bogus prosperity, in which the relative value of money, expressed in commodities, decreases also for other reasons (without any actual revolution in values), so that the prices of commodities rise independently of their own values. It is not alone the consumption of necessities of life which increases. The working-class (now actively reinforced by its entire reserve army) also enjoys momentarily articles of luxury ordinarily beyond its reach, and those articles which at other times constitute for the greater part consumer “necessities” only for the capitalist class. This on its part calls forth a rise in prices.” (p 414)*

But, dismissing the arguments of the under-consumptionists, Marx demonstrates why crises are not the result of the working-class obtaining too small a share in wages.

“... one could only remark that crises are always prepared by precisely a period in which wages rise generally and the working-class actually gets a larger share of that part of the annual product which is intended for consumption. From the point of view of these advocates of sound and “simple” (!) common sense, such a period should rather remove the crisis. It appears, then, that capitalist production comprises conditions independent of good or bad will, conditions which permit the working-class to enjoy that relative prosperity only momentarily, and at that always only as the harbinger of a coming crisis.” (p 415)

Marx's phrase that capitalism is production for the sake of production has often been misunderstood. As Lenin comments, in reality, capitalist production itself has to be guided by the needs of consumption. Capitalists can only realise profit if the things they produce are saleable, if consumers want them.

Under simple reproduction, the surplus value is used simply in order that the capitalists can continue to live. As Marx says, in *Volume III*, we should not let this distract us from the real purpose of capitalist production, which is the self-expansion of capital. Yet, as he also says, the more capital develops, and the more capitalists are separated from their social function, the more the allure of unproductive consumption influences them as individuals, even whilst the need to accumulate or die continues to exert its influence on capital itself.

Capitalist production may be characterised by expanded reproduction, but simple reproduction remains an integral component of it. The circuit may appear $M - C - M'$, and a portion of M' then being reinvested to expand capital, but the reality, Marx says, remains $M - C - M$. In other words, capital must always reproduce itself, before it can expand. All of the productive-capital must be physically reproduced on a like for like basis, as Marx describes later in *Volume III*. If there is reproduction on the same scale, then every item of constant capital, consumed in production, must be physically replaced, “... if not in quantity and form, then at least in effectiveness.” (*Capital III, Chapter 49*)

“If the productiveness of labour remains the same, then this replacement in kind implies replacing the same value which the constant capital had in its old form. But should the productiveness of labour increase, so that the same material elements may be reproduced with less labour, then a smaller portion of the value of the product can completely replace the constant part in kind.” (ibid)

$M - C - M'$ with the accumulated m comprising an additional new capital, with its own circuit $m - c - m'$, implies that this simple reproduction has occurred.

“The excess may then be employed to form new additional capital or a larger portion of the product may be given the form of articles of consumption, or the surplus-labour may be reduced. On the other hand, should the productiveness of labour decrease, then a larger portion of the product must be used for the replacement of the former capital, and the surplus-product decreases.” (ibid)

This is the true nature of the rate of profit, as the extent of the self-expansion of capital. As Marx sets out above, that does not dictate the further consequence of this self-expansion. It may be accumulated as additional capital, but it may not. Under simple reproduction, it facilitates an increase in unproductive consumption - “a larger portion of the product may be given the form of articles of consumption” - or depending upon circumstances, it may enable a rise in wages - “the surplus-labour may be reduced”.

“Simple reproduction is essentially directed toward consumption as an end, although the grabbing of surplus-value appears as the compelling motive of the individual capitalists; but surplus-value, whatever its relative magnitude may be, is after all supposed to serve here only for the individual consumption of the capitalist.

*As simple reproduction is a part, and the most important one at that, of all annual reproduction on an extended scale, this motive remains as an accompaniment of and contrast to the self-enrichment motive as such. In reality the matter is more complicated, because **partners** in the loot — the surplus-value of the capitalist — figure as consumers independent of him.” (p 415)*

V. The Mediation of Exchange by the Circulation of Money

The above examples have demonstrated that so far as social capital is concerned, value is produced by **Departments I** and **II**, so as to ensure that commodities produced in each can be exchanged with those in the other, so as to ensure all production is fully consumed, and social reproduction can continue. It also demonstrates that the money thrown into circulation by capitalists, either advanced for the purchase of productive-capital, or spent to buy items of personal consumption, provide the necessary means of payment by which these exchanges are affected.

The models demonstrate that some of these elements of social production involve exchanges between **Department I** and **II**, whilst others involve circulation confined within

the same department or department sub-division.

So, **Department I** constant capital only circulates within **Department I**. Its equivalent value, represented in **Department I** output, does not exchange with **Department II**. It simply replaces consumed **Department I** constant capital. It comprises an element of national output, but, considered at the level of social capital, generates no revenue.

Department I variable capital, and surplus value, exchanges with **Department II**. It exchanges with that element of **Department II** output that is equal to the value contributed by constant capital.

Department I variable capital only exchanges with **Department IIa** – necessities, whilst a portion of **Department I** surplus value exchanges with **Department IIa**, and the remainder with **Department IIb** – luxuries.

Department II variable capital, both from **IIa** and **IIb**, circulates within **Department IIa**. **Department IIa** surplus value circulates partly within **IIa** and partly in **IIb**, and similarly with surplus value from **IIb**.

“The direct reflux of the money-capital advanced in variable capital, which takes place only in the case of the capitalist department IIa which produces necessities of life, is but an expression, modified by special conditions, of the previously mentioned general law that money advanced to the circulation by producers of commodities returns to them in the normal course of commodity circulation. From this it incidentally follows that if any money-capitalist at all stands behind the producer of commodities and advances to the industrial capitalist money-capital (in the strictest meaning of the word, i.e., capital-value in the form of money), the real point of reflux for this money is the pocket of this money-capitalist. Thus the mass of the circulating money belongs to that department of money-capital which is organised and concentrated in the form of banks, etc., although the money circulates more or less through all hands. The way in which this department advances its capital necessitates the continual final reflux to it in the form of money, although this is once again brought about by the reconversion of the industrial capital into money-capital.” (p 416-7)

That is illustrated in the diagram showing the circuits of money and capital (*Chart 1*).

As has been demonstrated, the actual money thrown into circulation, in terms of individual coins or money tokens, does not have to be equal to the value of transactions to be undertaken. Each coin or token exchanges many times, being used for many transactions. In addition to this respect of the velocity of money, we have also seen the similar role played by the rate of turnover of capital.

Money wages paid out weekly, may find their way back, as money-capital, into the hands of the capitalist that paid them out, a month later. So, this same money may then act twelve times in the year to effect this exchange of values. Moreover, unlike the situation with barter, where money acts to mediate the exchange, C – M – C, although the commodities themselves may totally disappear, as a result of consumption, the money remains in existence to continue circulating from year to year.

All capital is comprised of commodities. Productive-capital is comprised of the commodity labour-power, and the commodities that make up the means of production. The end product, the commodity-capital, is most obviously comprised of commodities. But, money-capital is comprised of the commodity money too.

All of these commodities are consumed. The productive-capital is consumed in the productive process. The commodity-capital is consumed either as consumer goods or as

means of production itself. In the process of the consumption of their use value, the value of these commodities disappears too, thereby necessitating the expenditure of labour once more.

Even the money commodity wears out in use, but it is the money function that continues, and with it thereby continues to circulate value.

On one side, to effect these exchanges, there is then money, and on the other there has to be commodities against which it exchanges. At this stage it is assumed that these commodities really are commodities, i.e. they are use values that someone wishes to purchase at their exchange value. There are, of course, any number of reasons why this may not be the case, as many capitalists discover in trying to sell their products.

In the real economy, because each firm starts in business at different times, and because each industry, and even firm, will have different working periods, and turnover times, money will be continually thrown into and withdrawn from circulation, either as advances of capital or as revenue. Similarly, commodities of varying types will be continually thrown into circulation, and just as continually withdrawn either for immediate consumption, or to be used themselves in the production process.

As demonstrated, the money flows that accompany these transactions can follow an unlimited number of paths. Money spent from wages by workers in **Department I**, can be destined to various locations to cover rent, food, clothing etc. The **Department II** capitalists, or in the case of rent, landlords, might themselves spend this money on consumer goods. Its only when the aggregate of **Department II** capitalists is considered that the flow of these funds back to **Department I** capitalists can be observed.

“However, the money-capital converted into variable capital, i.e., the money advanced for wages, plays a prominent role in the circulation of money itself, since the labourers must live from hand to mouth and cannot give the industrial capitalists credit for any length of time. For this reason variable capital must be advanced in the form of money simultaneously at innumerable territorially different points in society at certain short intervals, such as a week, etc.—in periods of time that repeat themselves rather quickly (and the shorter these periods, the smaller relatively is the total amount of money thrown at one time into circulation through this channel) — whatever the various periods of turnover of the capitals in the different branches of industry. In every country with a capitalist production the money-capital so advanced constitutes a relatively decisive share of the total circulation, the more so as the same money, before its reflux to its point of departure, passes through the most diverse channels and functions as a medium of circulation for countless other businesses.” (p 418-9)

Marx then demonstrates how this money flow can bring about these exchanges of value, by looking again at the exchange between **Department I** (v+s) and **II** (c). Marx assumes that **Department II** begins with £2,000 in the form of commodity-capital and with £500 in money-capital. **Department I** begins with £1,000 in money-capital, which it advances as wages.

Only £1,500 has been used to finance the circulation of £5,000 of commodities here. At the end, **Department II** has received £1,000 (1), £500 (4) and £500 (6), making £2,000 altogether. It has paid out £1,000 (2) £500 (3) and £500 (5), again making £2,000 altogether. So, their cash position is exactly as it was at the beginning.

They sold £2,000 of commodities and they replaced it with purchases of £2,000 of constant capital. So, they end up with £2,000 of constant capital also.

£1,000 of commodity-capital was used up in the commodities they sold to **Department I** workers (1). But, they obtained £1,000 in money from that transaction. They used that money to buy £1,000 of constant capital from **Department I** (2). Thereby, **Department I** capitalists receive back the £1,000 they had paid in wages to their workers.

Department II capitalists throw the additional £500 of money-capital into circulation they began with, and buy further means of production (3). With the proceeds, **Department I** capitalists buy £500 of consumer goods from **Department II** (4).

Department II use this £500 to buy additional means of production (5), and **Department I** capitalists use this to buy consumer goods (6).

Department I workers have bought £1,000 of consumer goods equal to their wages. **Department I** capitalists have bought £1,000 of consumer goods equal to their surplus value.

Department II capitalists have used up the £2,000 of commodity-capital they began with and have bought £2,000 of constant capital in its place, and have also recovered the extra £500 they threw into circulation to buy constant capital.

Department I capitalists have bought £1,000 of consumer goods to meet their needs, which is equal to their surplus value, but they also have £1,000 in money, which they can now once more advance as wages to their workers.

“On the other hand the bodily form into which the variable capital existing in the form of money must be transformed, i.e., labour-power, has been maintained, reproduced and again made available by consumption as the sole article of trade of its owners, which they must sell in order to live. The relation of wage-labourers and capitalists has likewise been reproduced.” (p 420)

In advancing the £500 (at 3) for the purchase of additional means of production, **Department II** capitalists thereby anticipate its reflux, i.e. they assume that their future output will actually find a buyer. The money they throw into circulation makes this possible, but, of course, there is no guarantee that it will be the case. Simply because a seller has sold does not mean they are compelled to buy. Moreover, as Marx sets out in *Theories of Surplus Value*, that can be the case generally.

*“At a given moment, the supply of all commodities can be greater than the demand for all commodities, since the demand for the **general commodity**, money, exchange-value, is greater than the demand for all particular commodities, in other words the motive to turn the commodity into money, to realise its exchange-value, prevails over the motive to transform the commodity again into use-value.”*

(Theories Of Surplus Value, Chapter XVII)

Marx then looks at the consequence of a more rapid rate of turnover. He supposes that instead of one annual payment of wages of £1,000, there are 4 payments of £250. In that case, £250 would be enough to circulate half of the constant capital component of **Department II** commodities, and for the purchase of the labour-power. In other words, £250 would be paid by **Department I** capitalists on 31st March rather than £1,000 on 31st December. Workers buy consumer goods from April 1st, which means **Department II** capitalists then buy £250 of constant capital to replace that used up. **Department I** capitalists with the returned £250, are then able to use it to pay wages again on 30th June, and so on.

“Likewise, if the circulation between I and II were to take place in four turnovers, it would require only £250, or in the aggregate a sum of money, or a money-capital, of £500 for the circulation of commodities amounting to £5,000. In that case the surplus-value would be converted into money four times successively, one-quarter each time, instead of twice successively, one half each time.” (p 422)

In the example, it was **Department II** capitalists that advanced £500 (at 3) for additional means of production, in anticipation of future sales, but it could have been **Department I** capitalists that threw additional money into circulation to buy consumer goods to meet their needs.

Then, **Department II** capitalists would use this £500 to buy means of production to replace those consumed. The end result would be that the £500 of additional money previously thrown in by **Department II** capitalists, and in their hands again, at the end, would now end up in the hands of **Department I** capitalists, in the same way.

“The surplus-value is here converted into money by means of the money spent by the capitalist producers themselves for their individual consumption. This money represents the anticipated revenue, the anticipated receipts from the surplus-value contained in the commodities still to be sold.” (p 422)

Its not the reflux of this £500 of additional money that realises **Department I's** surplus value. It is only the return of this additional money thrown into circulation. **Department I** only realises the surplus value when it sells those commodities which are the physical equivalent of that surplus value.

But, suppose after **Department I** has thrown additional money into circulation, **Department II** capitalists do not buy means of production. Thereby **Department I** will have thrown all its surplus value, amounting to £1,000 into circulation to buy consumer goods. That is made up of £500 of means of production sold to **Department II**, and £500 in additional money. **Department I** capitalists are then left with £500 of means of production waiting to be sold.

Department II will have replaced 3/4 of its constant capital (£1,500), the other £500 sitting in stock with **Department I**, its equivalent being held as money-capital by **Department II** capitalists.

“... actually in the form of idle money, or of money which has suspended its function and is held in abeyance. Should this state of affairs last for any length of time, II would have to cut down its scale of reproduction by one-fourth.” (p 423)

The £500 of means of production, held by **Department I**, do not constitute surplus value, for the simple reason that for so long as their equivalent, the £500 of money-capital, held by **Department II** capitalists, remains immobilised, the means of production are unsaleable.

If a capitalist spends money for consumption, both the money and the commodity are finished with. The money goes to the seller and the commodity is consumed. The capitalist can only get his money back if it is advanced rather than spent. The money he throws into circulation for consumption provides the means by which his own commodities can be bought, and the surplus value realised, but it is the sale of his commodities that makes that possible, not the throwing into circulation of his money.

“As the value of his entire annual commodity-product (his commodity-capital), so that of every one of its elements, i.e., the value of every individual commodity, is divisible, as far

as he is concerned, into constant capital-value, variable capital-value, and surplus-value.” (p 424)

Marx describes two ways this occurs. With a new business, the capitalist has to continuously throw money into circulation, to buy articles of consumption, because for a considerable time the business will not generate him an income. He continues to do this in the expectation that, at some point, the business will be sufficiently profitable to provide him with such an income. In financing his consumption, in this way, from his own pocket, or via some form of borrowing, he also throws money into circulation – money which can finance other transactions. That money is precisely the means by which his surplus value can be realised in the future.

The second means by which it is effected is where the business has been in operation for some time. There, payments and receipts for commodities bought and sold, occur at varying time periods, but the capitalist's personal consumption needs continue at regular periods and have to be financed accordingly.

As commodities are sold, the constant and variable capital values are thereby replaced along with the realisation of surplus value. Depending upon the cash-flow of the business determined by the periods during which payments are made, and receipts come in, the surplus value will accumulate as cash or bank deposits, which are then available for distribution to cover his spending.

But, money may still be required to ensure a regularity of personal income each month, to cover that spending. Moreover, if he is only able to sell enough commodities during the year to cover the variable and constant capital, there will be no surplus value to realise and use to cover his spending. The same is true if prices fall so that his commodities only realise the advanced capital. This, of course, is a fall in market prices of his commodities, for example, due to a dramatic change in the conditions of supply and demand, not a fall in the value of those commodities resulting from a change in the value of the productive-capital.

“So far as the entire capitalist class is concerned, the proposition that it must itself throw into circulation the money required for the realisation of its surplus-value (correspondingly also for the circulation of its capital, constant and variable) not only fails to appear paradoxical, but stands forth as a necessary condition of the entire mechanism.” (p 425)

It is not paradoxical for the reasons we have elaborated before. The workers own only their labour-power, and it is only that they advance. They can spend money only after they have sold their labour-power. In contrast, the capitalists own both means of production and money. Workers can only sell labour-power if capitalists buy it. Capitalists advance both money and commodities into circulation. They advance money to buy productive-capital, and they advance commodities to realise the surplus value contained within them. They spend money for personal consumption.

“He never parts with his money unless he gets an equivalent for it. He advances money to the circulation only in the same way as he advances commodities to it. He acts in both instances as the initial point of their circulation.” (p 425)

That is obscured for two reasons.

1. *“The appearance in the process of circulation of industrial capital of **merchant's capital** (the first form of which is always money, since the merchant as such does not create any “product” or “commodity”) and of **money-capital** as an object of manipulation by a special kind of capitalists.”* (p 425)

2. The division of the surplus value amongst the other exploiters, i.e. landlords, money-capitalist, and the capitalist state.

“These gentry appear as buyers vis-à-vis the industrial capitalist and to that extent as converters of his commodities into money; they too throw 'money' pro parte into the circulation and he gets it from them. But it is always forgotten from what source they derived it originally, and continue deriving it ever anew.” (p 425)

Part 2

VI. The Constant Capital of Department I

Returning to the model, it can be seen that in **Department I**, of the total commodity-product of £6,000, £4,000 comprised constant capital. In other words, this is means of production consumed in the production of means of production. This is the element of national output that Adam Smith, Keynes and others omit from their calculations. They do so because they operate under the misapprehension that *National Output, or GDP*, equals *National Income*, whereas, in fact, *National Output* is equal to *National Income* (v+s) plus the constant capital consumed (c).

They omit this figure, therefore, because it has no corresponding income. The £4,000 of constant capital already exists as a stock of capital, in the form of materials etc., produced in the previous year/s, as illustrated in the *Tableau Economique*. Constant capital is produced to replace this existing stock, and to replace other constant capital consumed by **Department I**, in the production process during the year.

But, precisely because this is a process of reproducing constant capital, it involves no exchange with **Department II**. The only circulation here is that arising from exchanges of one **Department I** firm with another. The £4,000 (c), of **Department I**, plus the £1,000 (v) and £1,000 (s) make up the total commodity product of **Department I**. The £6,000 of **Department I** commodities can only be used as means of production, because they are not consumption goods. £2,000 of means of production were required by **Department II** for its production. That leaves this £4,000 remaining, which **Department I** capitalists consume to replace their own means of production.

In **Department II**, that component of the commodity-product, which is equal to the wages and surplus value of **Department II**, is consumed by those workers and capitalists. That component of **Department II** commodity-product, that is equal to the constant capital, used in production, is exchanged with **Department I**, which provides those means of production. Similarly, the constant capital used in production, in **Department I**, reappears in the same physical form, as part of the output of **Department I**, ready, once again, to resume its function, and is consumed, by **Department I** capitalists, for that purpose.

Each capitalist, within **Department I**, appears to produce all of their output as commodity-capital, which they sell, and thereby obtain a revenue, distributed as wages and surplus value, but taken in the aggregate, it is clear that this is not the case, because, in reality, two-thirds of **Department I** output, i.e. £4,000 of £6,000 only circulates within **Department I**. It is only the remaining £2,000, equal to the wages and surplus value, that exchanges with **Department II**, and thereby produces revenue.

But, in the same way that the output of **Department II**, that circulates within **Department II**, i.e. that portion equal to its wages and surplus value, still constitutes part of its total output, so that portion of **Department I's** output, equal to the constant capital consumed, that only circulates within **Department I**, still also constitutes a part of its output value.

“However since the partial products constituting the constant capital-value I do not return directly to their particular or individual sphere of production, they merely change their place. They pass in their bodily form to some other sphere of production of department I, while the product of other spheres of production of department I replaces them in kind. It is merely a change of place of these products. All of them re-enter as factors replacing constant capital in I, only instead of the same group of I they enter another. Since an exchange takes place here between the individual capitalist of I, it is an exchange of one bodily form of constant capital for another bodily form of constant capital, of one kind of means of production for other kinds of means of production. It is an exchange of the different individual parts of constant capital I among themselves.” (p 428)

VII. Variable Capital and Surplus-Value in Both Departments

The total value of all consumption goods produced during the year is equal to the total value of variable capital and surplus value in both departments. In other words it is equal to *National Income*. It is equal to all of the new value created by labour during the year. That has to be true because the total value of consumption goods is equal to $c+v+s$. But, the value of IIc is equal to the value of $v+s$ in **Department I**. The value of consumer goods, (what appears as final production in GDP) then is equal to $I(v + s) + II(v + s)$. The value of c within **Department I** only circulates within it, and this value is omitted from GDP data.

“On the assumption of simple reproduction the total value of the annually produced articles of consumption is therefore equal to the annual value-product, i.e., equal to the total value produced during the year by social labour, and this must be so, because in simple reproduction this entire value is consumed.” (p 429)

In other words, the total value of consumption goods is equal to the net new value created during the year, i.e. $v+s$. Under simple reproduction, both v and s go to consumption, and all the consumption goods are consumed.

In *Volume I*, in considering the working day, the value of constant capital was set aside. It is only the labour added that creates new value. So, the working day can be divided, in looking at the creation of this new value, into necessary and surplus labour. The same is true of the social working day, i.e. the total labour-time of society. Here, the total social labour-time amounted to a value of £3,000 in total - £2,000 in **Department I**, £1,000 in **Department II**. This broke down into £1,000 (v) necessary labour-time and £1,000 (s) surplus labour-time in **Department I**, and £500 (v) and £500 (s) in **Department II**. Once again, this simply shows that the value produced during the social working day is equal to the value of consumption goods produced.

“But we know that although these two magnitudes of value are equal the total value of commodities II, the articles of consumption, is not produced in this department of social production. They are equal because the constant capital-value re-appearing in II is equal to the value newly produced by I (value of variable capital plus surplus-value); therefore $I(v + s)$ can buy the part of the product of II which represents the constant capital-value for its producers (in department II). This shows, then, why the value of the product of capitalists II, from the point of view of society, may be resolved into $v + s$ although for these capitalists it is divided into $c + v + s$. This is so only because IIc is here equal to $I(v + s)$, and because these two components of the social product interchange their bodily forms by exchange, so that after this transformation II exists once more in means of production and $I(v + s)$ in articles of consumption.” (p 429-30)

This is what confused Adam Smith and leads other economists to equate *National Income* with *National Output*.

“This is true 1) only for that part of the annual product which consists of articles of consumption; and 2) it is not true in the sense that this total value is produced in II and that the value of its product is equal to the value of the variable capital advanced in II plus the surplus-value produced in II. It is true only in the sense that $II(c + v + s)$ is equal to $II(v + s) + I(v + s)$, or because IIc is equal to $I(v + s)$.” (p 430)

The value, produced during the social working day, of £3,000 breaks down into £1,500 necessary value, to reproduce labour-power, and £1,500 surplus value.

“Nevertheless, from the point of view of society, one part of the social working-day is spent exclusively on the production of new constant capital, namely of products exclusively intended to function as means of production in the labour-process and hence as constant capital in the accompanying process of self-expansion of value.” (p 430)

The social working day, in our example, produces a value of £3,000, but only £1,000 of that is produced in **Department II**, despite the fact that the entire social revenue (*National Income*) is expended on **Department II** consumer goods.

“Thus, according to this assumption, two-thirds of the social working-day are employed in the production of new constant capital. Although from the standpoint of the individual capitalists and labourers of department I these two-thirds of the social working-day serve merely for the production of variable capital-value plus surplus-value, the same as the last third of the social working-day in department II, still from the point of view of society and likewise of the use-value of the product, these two-thirds of the social working-day produce only replacement of constant capital in the process of productive consumption or already so consumed.” (p 430-1)

But, although the new value produced in **Department I** amounts to only £2,000, the total value produced in that department is £6,000, because £4,000 are already embodied in the means of production used within the department itself. That can perhaps be seen clearer if we look at physical outputs rather than values.

Department 1 output is:

$$c\ 4000 + v\ 1000 + s\ 1000 = 6000.$$

Let us assume that this is equal also to 6,000 units of output. So, although we have said that the whole of $v + s$ here are spent in **Department II**, and that the whole of this value is sold to **Department II**, this tends to obscure the reality.

The reality is that what is sold to **Department II** is 2000 units of output with a value of £2,000. But, if we look at the value composition of those 2000 units, it will comprise $c+v+s$ in the same proportion as in the whole of **Department I's** production. In other words, of that £2,000 $\frac{2}{3}$ or £1,333 will comprise the constant capital consumed in its production, £333 will comprise the variable capital, and £333 the surplus value.

In the same way, **Department I**, in producing means of production, that is bought and circulates within **Department I**, to a value of £4,000 does so on the same basis. Of those 4000 units, £2,666 will comprise the constant capital, used in their production, whilst £666 will comprise variable capital, and £666 surplus value. Each individual capital, within **Department I**, whoever it sells to, be it in **Department I** or **II**, will see its costs divided in this way. It is only because in aggregate, **Department I** capitalists and workers use their revenue to buy **Department II** commodities that it appears that the value of **Department I** commodities sold to **Department II** comprise only $v+s$.

They clearly do not. In realising the total value of those **Department I** commodities, which comprise $c+v+s$, what is realised is also the constant capital consumed in their production. In focussing on the value rather than physical exchanges, and on the equality between $I(v+s)$ and $II(c)$, Marx seems to miss this point.

Marx's comment,

"It must be noted in the first place that no portion of the social working-day, whether in I or in II, serves for the production of the value of the constant capital employed and functioning in these two great spheres of production." (p 431)

at first, sight seems odd. Of course, the workers in **Department I** are constantly producing means of production that forms constant capital in both **Department I** and **II**. But, if we take this as referring to a single cycle, his comment is correct. The constant capital, used in **Department I** to produce means of production, already exists. Its value is merely transferred, and thereby reproduced within this year's output. It is not this value that is being newly produced. The only value in constant capital that is being newly produced is new value, arising from the labour of **Department I** workers, and equal to $I(v + s)$. That new value of constant capital being produced amounts to £2,000, $\frac{2}{3}$ of it, or £1,333, going to **Department I**, and one third or £666 going to **Department II**, divided into £333 of variable capital, and £333 of surplus-value. But, this new value will go into circulation in the following cycle.

As Marx points out, if we look at the constant capital, used by **Department II**, in the current year, it amounts to £2,000. But, this value has not been created in the current year. That is clearly seen in the series of exchanges represented in the *Tableau Economique*. It has been created in previous years, and similarly, its value would have been made up of £1,333 constant capital, £333 variable capital, and £333 surplus value. In other words, the *Tableau* and Marx's analysis of social reproduction begins with last year's output, with the stock of commodity-capital.

It is from that stock, produced last year, that the physical commodities consumed by workers are drawn, to sustain them during the current year, and from which the materials (constant capital) used in this year's production are drawn. This year's production, by **Department I**, thereby simply reproduces that stock of means of production, consumed in this year's production, and **Department II**, similarly reproduces the stock of means of consumption.

Of course, in a modern industrial economy, this is not an annual cycle as was the case of agricultural production and consumption studied by the *Physiocrats*. But, the point remains the same, whether the cycle is taken as being a year, or merely a day. The means of production and consumption used in the production of the current cycle, are drawn from the existing stock of commodities produced in the previous cycle/s, and are reproduced out of the production of the current cycle.

"The entire product of II — the articles of consumption — viewed concretely as a use-value, in its bodily form, is a product of the one-third of the social working-day spent by II. It is the product of labour in its concrete form — such as the labour of weaving, baking, etc., performed in this department — the product of this labour, inasmuch as it functions as the subjective element of the labour-process." (p 431)

The constant capital used in its production is not newly created. It already existed in another form, and transferred its value along with its use value. The £3,000 value of **Department II** products is comprised of one third of a current social working day (£3,000),

in the form of new added value £500 (v) and £500 (s) from **Department II**, and two-thirds of a past social working day, in the form of constant capital £2,000.

This past labour, in the form of constant capital, finds expression in a portion of the current output of consumer goods, i.e. the value of two-thirds of a working day equals £2,000 worth of consumer goods.

“The exchange of part of the articles of consumption equal to 2,000 l_{lc} for means of production of I equal to I ($1,000v + 1,000s$) thus really represents an exchange of two-thirds of an aggregate working-day — which do not constitute any portion of this year’s labour, and elapsed before this year — for two-thirds of the working-day newly added this year.” (p 432)

However this is looked at, it is an exchange of current labour-time for past labour-time. Two-thirds of a working day from last year comprise the constant capital of **Department II**. The equivalent of that value is exchanged with **Department I** workers and capitalists in the form of £2,000 of consumer goods. The workers and capitalists of **Department I** need those consumer goods to live and thereby work, and so replace the constant capital consumed by **Department II**. Similarly, **Department II** needs to sell that £2,000 of consumer goods to **Department I**, to raise the funds to once more buy the replacement constant capital from **Department I**.

“This explains the riddle of how the value-product of an entire social working-day can resolve itself into variable capital-value plus surplus-value, although two-thirds of this working-day were not expended in the production of articles in which variable capital or surplus-value can be realised, but rather in the production of means of production for the replacement of the capital consumed during the year. The explanation is simply that two-thirds of the value of the product of II, in which the capitalists and labourers of I realise the variable capital-value plus surplus-value produced by them (and which constitute two-ninths of the value of the entire annual product), are, so far as their value is concerned, the product of two-thirds of a social working-day of a year prior to the current one.” (p 432)

VIII. The Constant Capital in Both Departments

“The analysis of the total value of the product of 9,000, and of the categories into which it is divided, does not present any greater difficulty than that of the value produced by an individual capital. On the contrary, they are identical.

The entire annual social product here contains three social working-days, each of one year. The value expressed by each one of these working-days is 3,000, so that the value expressed by the total product is equal to $3 \times 3,000$, or 9,000.” (p 433)

The new value produced in the year we have seen, however, amounted to only £3,000 or the equivalent of one social working day. The remaining £6,000, or equivalent of two social working days, are then clearly the product of previous years, but whose value is incorporated in this year's output.

“In department I four-thirds of a working-day (with a product worth 4,000), and in department II two-thirds of a working-day (with a product worth 2,000), making a total of two social working-days with a product worth 6,000. For this reason $4,000 l_c + 2,000 l_{lc} = 6,000c$ figure as the value of the means of production, or the constant capital-value re-appearing in the total value of the social product.” (p 433)

With a 100% rate of surplus value, we know that half of the social working day is required to reproduce the variable capital. That is it is necessary labour. It constitutes a third of a

working day or £1,000 in **Department I**, and one sixth of a working day or £500 in **Department II**. Similarly, £1,000 in **Department I** and £500 in **Department II** constitute surplus labour.

“Thus:

The constant capital portion of the value of the social product (c):

Two working-days expended prior to the process of production; expression of value = 6,000.

Necessary labour (v) expended during the year: One half of a working-day expended on the annual production; expression of value 1,500.

Surplus-labour (s) expended during the year: One half of a working-day expended on the annual production; expression of value = 1,500.

Value produced by annual labour (v + s) = 3,000. Total value of product (c + v + s) = 9,000.

*The difficulty, then, does not consist in the analysis of the **value** of the social product itself. It arises in the comparison of the component parts of the value of the social product with its **material** constituents.” (p 433-4)*

The essential point here is that the value breaks down into two parts. One part is the constant capital. None of that value is newly produced. It is merely existing value that has been transferred. The second part is the newly created value, and it is entirely made up of the means of consumption. This latter component itself comprises the value of the necessary labour and the surplus labour. The value of these two components also has its material equivalent in the means of subsistence consumed by the workers and the unproductive consumption of the capitalists.

Marx says that apart from minor exceptions, production goods and consumer goods are totally different sorts of products, which require different kinds of concrete labour for their production. I wouldn't necessarily agree with that contention. There are clearly some kinds of producer goods that cannot be consumer goods, but there are many that can. All forms of energy can be used for production or consumption; steel will most frequently be used for production purposes, but can be used for consumption, e.g. for repairs, DIY etc.; many tools are used both for production and consumption, nowadays, even including things like small lathes; many materials fall into this category; flour can be used by a baker or as a consumer good; cotton can be used to be spun or as cotton wool; thread can be used by a weaver or tailor or as a consumer good for repairs or for recreation and so on.

It seems that the entire social working day, with a value of £3,000 is taken up in the production of consumption goods. But, of course, that is not the case. The value of consumption goods is equal to £3,000, which is equal to one social working day, but only a third of a day is spent in their production. The other two-thirds is made up of the value of the constant capital used in their production, and that is past labour, labour expended in the previous year.

Only £1,000 of current labour is spent on producing consumer goods, the other £2,000 is spent on producing **Department I** goods, and that simply replaces constant capital that has been consumed by **Department II**, but the value of this production does not appear until the following year.

“The value-product created during this time in I, equal to the variable capital-value plus surplus-value produced in I, is equal to the constant-capital-value of II re-appearing in articles of consumption of II. Hence they may be mutually exchanged and replaced in kind. The total value of the articles of consumption of II is therefore equal to the sum of the new value-product of I and II, or $II(c + v + s)$ equal to $I(v + s) + II(v + s)$, hence equal to the sum of the new values produced by the year’s labour in the form of v plus s .” (p 434-5)

The total value of constant capital in the annual output is equal to that which reappears in the product of **Department I** and **II**, i.e. £4,000 and £2,000. That is it is equal to $1\frac{1}{3}$ social working days in the former and $\frac{2}{3}$ of a working day in the latter, making 2 working days in total. How is this possible? Simply because it is past years' labour that has been transferred to the current year's product.

“The difficulty with the annual social product arises therefore from the fact that the constant portion of value is represented by a wholly different class of products — means of production — than the new value $v + s$ added to this constant portion of value and represented by articles of consumption. Thus the appearance is created, so far as value is concerned, that two-thirds of the consumed mass of products are found again in a new form as new product, without any labour having been expended by society in their production. This is not so in the case of an individual capital. Every individual capitalist employs some particular concrete kind of labour, which transforms the means of production peculiar to it into a product.” (p 435)

Marx sets out the example as though it were a single machine maker. They produce 18 identical machines worth £500 each. On this basis, the £6,000 constant capital consumed is equal to the value of 12 machines, and that of the variable capital and surplus value by 3 each. Yet, it is clear that the value of the constant capital has not been resolved solely into these 12 machines. These 12 machines, as with every individual machine, have their value composed in the ratio 4:1:1. That is £4,000 constant capital, £1,000 variable capital and £1,000 surplus value.

Every commodity, to be a commodity, must also be a use value, and it is irrelevant whether this use value is such as to enable that commodity to be used in any specific manner, i.e. as constant capital or as a consumer good. A commodity like coal, for example, will have a value part of which reproduces the constant capital, used to produce it, part the variable capital, and part the surplus value. If these components are comprised 4:1:1 as above, it is not at all necessary that, of the coal produced, $\frac{2}{3}$ of it is used as constant capital, a sixth for workers consumption and a sixth unproductive consumption by capitalists.

All that is required is that the commodity be sold so that these components can once again be reproduced.

“It is different with the product of the aggregate social capital. All the material elements of reproduction must in their bodily form constitute parts of this product. The consumed constant part of capital can be replaced by the aggregate production only to the extent that the entire constant part of the capital reappearing in the product re-appears in the bodily form of new means of production which can really function as constant capital. Hence, simple reproduction being assumed, the value of that portion of the product which consists of means of production must be equal to the constant portion of the value of social capital.” (p 436)

That is simply to say that all of the constant capital consumed in the production process, for both **Department I** and **II**, must be physically replaced if simple reproduction is to continue on the same scale. So, the production of constant capital/means of production

must be sufficient to ensure that reproduction takes place. Consequently, the production of constant capital must form the same proportion of total social production as constant capital forms in the total social capital. If a smaller physical quantity of constant capital is reproduced, a smaller quantity of labour-power can be set in motion by it, so simple reproduction ceases, there is a contraction of capital.

*“Considered socially that portion of the social working-day which produces means of production, hence adding new value to them as well as transferring to them the value of the means of production consumed in their manufacture, creates nothing but new **constant capital** intended to replace that consumed in the shape of old means of production in both departments I and II. It creates only product intended for productive consumption. The entire value of this product, then, is only value which can function anew as constant capital, which can only buy back constant capital in its bodily form, and which, for this reason, resolves itself, considered socially, neither into variable capital nor surplus-value.” (p 437)*

In other words, it represents only an exchange of capital with capital, not capital with revenue. Although, at an individual level, **Department I** workers and capitalists obtain revenue (wages and surplus value) this obscures the fact that two-thirds of **Department I** production, taken in the aggregate, generates no revenue, but only exchanges within **Department I**, replacing existing constant capital.

It is only one third of **Department I** output that exchanges with **Department II**. **Department II** capitalists advance money-capital to buy means of production. But, for this one third output of **Department I**, equal to wages and surplus value, it constitutes revenue. It is used not to buy additional constant capital, but to buy means of consumption. It is thrown straight back into circulation by **Department I** workers and capitalists to buy **Department II** consumer goods.

IX. A Retrospect to Adam Smith, Storch, and Ramsay

The total value of the social product here is £9,000, made up C 6000 + V 1500 + S 1500. In other words, of society's total output, £6,000 or $\frac{2}{3}$ must be devoted simply to replacing the means of production. Only a third is left over to be consumed, and is equal to the total income received by workers and capitalists. At first glance, it seems impossible that, if the value created by the whole of society, in a social working day, is only equal to £3,000, then £6,000 could go to replacing means of production.

We've seen that this is quite possible, because two-thirds of the value of the national output was attributable, not to the value created in the current year, but to the value created in previous years, and incorporated in the value of this year's output. This is a concept that Adam Smith failed to grasp, and an error that has continued into the writings of modern economists.

So, given simple reproduction, an equivalent amount of value to that transferred by constant capital, in the form of raw materials, wear and tear of machinery etc. to the value of current output, must also be set aside from current output to replace it. None of this value of output forms a revenue, or an income for anyone in the current period.

“Storch recognised this as essential without being able to prove it:

'It is clear that the value of the annual product is divided partly into capital and partly into profits, and that each one of these portions of the value of the annual product is regularly employed in buying the products which the nation needs both for the maintenance of its

capital and for replenishing its consumption-fund... . The products which constitute the capital of a nation are not to be consumed.' (Storch, *Considérations sur la nature du revenu national Paris, 1824, pp. 134-35, 150.*)” (p 438)

Adam Smith, as we have seen, did not at all understand this reality. Smith, like Keynes, argued that *National Output* and *National Income* are identical. Everything that is produced and sold, would thereby provide an income to someone. The firm selling the product takes its receipts and from them pays wages to its workers, profits to its owners, rent to its landlord, and interest to the money-capitalist who lent it money.

The trouble is, of course, that those payments only account for a fraction of the total receipts the company obtains. A much larger amount of money has to be paid that does not come to any of these categories. It has to be paid, not as revenue, but simply to maintain capital. So, for example, a baker will have to pay out large sums to the miller who provided him with flour, the sugar producer, the energy supplier, and so on. They will have to set aside funds, that form revenue for no one, that cover the wear and tear of their machinery etc.

Now, its true, as Smith says, that the miller will take his receipts from the baker, and from them pay out wages, profits, rent and interest, but that, in turn, will leave him with a similar situation whereby that only accounts for a fraction of his receipts. He will also have to pay out sums of money that do not fall into these categories. He will have to pay out for the constant capital he has consumed too. So, he will have to pay the farmer for the wheat, the millwright for building or maintaining the mill, and so on. As Marx points out, no matter how far back you take this series, it will always be the case that output cannot be resolved simply into wages, profits, interest and rent, because a portion – frequently, and increasingly, the largest portion – of the value of output comprises the constant capital consumed.

All that *National Income* figures (which total up wages, profits, rent and interest) can show is the amount of new value created in the current year. They will always omit the largest component of the value of output, which is the value of the constant capital. This obscured in the GDP and National Income data, because the inclusion of the value of “*intermediate goods*” appears to deal with the value of the constant capital component of final output. But, as Marx demonstrates in his analysis above, the value of these “*intermediate goods*”, included in the GDP figure, is only equal to the value added during the current year. In other words, it is only equal to $l(v + s)$.

The various calculations of the rate of profit, on these figures, of *National Income*, which some economists have tried to develop, are then no such thing. *National Income, and GDP* is only a measure of the new value created by workers that year. Breaking it down into wages on one side and profits, rent and interest on the other (or property income as some would have it) does not give a measure of the rate of profit, as defined by Marx, i.e. $s/c+v$, but only a measure of s/v , or the rate of surplus value.

Given the significant changes in the value of c , that Marx describes, arising from the constant revolutionising of the means of production, such measures are next to useless for gauging changes in the rate of profit itself.

“Adam Smith, however, has promulgated this astounding dogma, which is believed to this day, not only in the previously mentioned form, according to which the entire value of the social product resolves itself into revenue, into wages plus surplus-value, or, as he expresses it, into wages plus profit (interest) plus ground-rent, but also in the still more popular form, according to which the **consumers** must “ultimately” pay to the producers

the entire value of the product. This is to this day one of the best-established commonplaces, or rather eternal truths, of the so-called science of political economy.” (p 438)

Marx describes the argument by looking at the production of shirts with a value of £100. The costs of these shirts also include the wages and profits paid to all those who provide the materials going into their production, the flax growers, spinners, weavers, bleachers, the transport companies and so on.

*“The consumers of the shirts pay these £100, i.e., the value of all the means of production contained in the shirts, and of the wages plus surplus-value of the flax-grower, spinner, weaver, bleacher, shirt manufacturer, and all carriers. This is absolutely correct. Indeed, every child can see that. But then it says: that’s how matters stand with regard to the value of all other commodities. It should say: That’s how matters stand with regard to the value of **all articles of consumption**, with regard to the value of that portion of the social product which passes into the consumption-fund, i.e., with regard to that portion of the value of the social product which can be expended as revenue.” (p 439)*

But, of course, the total value of the economy's output is far greater than that which comprises the consumption fund. A large proportion of the output goes into the production of producer goods, and not just those used up in producing consumer goods, but also those used up in producing producer goods themselves. In other words, all of $v+s$ is used up and appears to buy all of the social output, only because what $v+s$ buys is limited to that portion of total output that comprises the consumption fund. That portion of total output that comprises the capital fund simply replaces its own value.

The constant capital is replaced in two ways. Firstly, **Department II** capitalists replace the constant capital consumed in the production of consumer goods, via an exchange with **Department I**. **Department II** buys constant capital from **Department I**. With the money it hands over, **Department I** capitalists are able to pay wages and realise surplus value. **Department I** workers and capitalists use those wages and surplus value to buy consumer goods. Alternatively, **Department I** workers may buy consumer goods with wages advanced to them, and **Department I** capitalists may buy consumer goods with their own money hoard. Then **Department II** capitalists have the necessary money to buy constant capital to replace that used up.

The £2,000 value of **Department II** output that is equal to the constant capital used up cannot be used by **Department II** capitalists as revenue, because it must be used to replace the constant capital. The £2,000 of value represented by the constant capital produced by **Department I**, and equal to **Department I** wages and surplus value, cannot be consumed by those workers and capitalists because they are not consumer goods.

“We have here, then, a sum of values to the amount of 4,000, one half of which, before and after the exchange, replaces only constant capital, while the other half forms only revenue.” (p 440)

The constant capital of **Department I** is by contrast replaced in kind. That can take two forms. Firstly, one **Department I** firm can sell means of production to another, e.g. a coal company selling coal to a steel producer. There are many variations on this. The value of the coal supplied could be met by an exchange of steel in return, but probably not. Rather the steel producer will supply steel to a range of other producers of means of production, some of whom will in turn supply constant capital to the coal producers. But, the coal producers will also supply coal to themselves, the steel producers will do the same, farmers will supply themselves with seeds, livestock and so on.

All of those exchanges within **Department I** form a part of the total national output, and yet do not form a part of national income, because they never form a part of revenue. They are only mutual exchanges within **Department I** that replace its constant capital.

*“The phrase that the value of the entire annual product must ultimately be paid by the consumer would be correct only if consumer were taken to comprise two vastly different kinds: individual consumers and productive consumers. However that one portion of the product must be consumed **productively** means nothing but that it must **function as capital** and not be **consumed as revenue**.” (p 440)*

If the total value of output of £9,000 is divided not into $c+v+s$, nor into $v+s$ but solely into capital £6,000 and revenue £3,000, then the variable capital disappears. Now wages, appear simply as part of the same revenue out of which the profits are paid. In that case, that revenue appears not as the product of labour but as the product of the (constant) capital employed.

“This conclusion is actually drawn by Ramsay. According to him, capital, socially considered, consists only of fixed capital, but by fixed capital he means the constant capital, that quantity of values which consists of means of production, whether these means of production are instruments or materials of labour, such as raw materials, semi-finished products, auxiliary materials, etc.” (p 440)

In this scheme, labour does not even form a necessary element of wealth creation, and only exists because the poverty of the mass of the people prevents them owning and employing their own capital.

“Here we see once more the calamity Adam Smith brings on by submerging the distinction between constant and variable capital in that between fixed capital and circulating capital. Ramsay’s constant capital consists of instruments of labour, his circulating capital of means of subsistence. Both of them are commodities of a given value. The one can no more create surplus-value than the other.” (p 441)

X. Capital and Revenue: Variable Capital and Wages

*“The entire annual reproduction, the entire product of a year is the product of the useful labour of that year. But the value of this total product is greater than that portion of the value in which the annual labour, the labour-power expended during the current year, is incorporated. The **value-product** of this year, the value newly created during this period in the form of commodities, is smaller than the **value of the product**, the aggregate value of the mass of commodities fabricated during the entire year.” (p 441)*

The difference between the two is the value of the constant capital whose value is not provided in the current year, but is transferred to the value of this year's output. The value of that constant capital may have been created last year, or in year's prior to that. The more fixed capital of long duration is accumulated within the economy, the more this value will have been created in the more distant past.

“It is by all means a value transferred from means of production of former years to the product of the current year.” (p 441)

In the current example, the total value of output is equal to £9,000, but the consumption fund, the value of the new labour, added in the current year, is only equal to £3,000. That is equal to the new labour added in both **Department I** (£2,000) and **Department II** (£1,000). The difference of £6,000 is the value of the constant capital transferred into the value of national output. Of **Department I's** total output, of £6,000, two-thirds, or £4,000 are

required just to reproduce the constant capital used by **Department I** itself. That leaves £2,000 of **Department I** output. This £2,000 of constant capital is sold to **Department II**. **Department II** sells £2,000 of consumer goods to **Department I**, thereby covering the consumption needs of **Department I** workers and capitalists.

“From the standpoint of society, two-thirds of the labour expended during the year have created new constant capital-value realised in the bodily form appropriate for department II. Thus the greater portion of the annual labour of society has been spent in the production of new constant capital (capital-value existing in the form of means of production) in order to replace the value of the constant capital expended in the production of articles of consumption.” (p 442)

In other words, the purpose of production is the production of consumption goods. Robinson Crusoe does not want a bow and arrow, or a fishing net, for its own sake, but only the better to catch fish and game to consume. The point of producing steel is not for its own consumption, but to be able to produce consumption goods.

In this example, two-thirds of available labour-time was used to produce not consumption goods, but production goods. This is not because society desires more production goods for their own sake, but because the production of these producer goods is necessary for society to produce the consumption goods it requires. To achieve that, it is not only necessary to produce the constant capital needed to produce the consumption goods, it is also necessary to produce the constant capital required for the production of constant capital itself.

“Capitalist society employs more of its available annual labour in the production of means of production (ergo, of constant capital) which are not resolvable into revenue in the form of wages or surplus-value, but can function only as capital.” (p 442)

This does not necessarily appear as any different from the production of revenue, because from the perspective of the individual capital, the consequence of its production does appear to be the creation of revenue. The firm sells its output of coal, steel, machines etc. and obtains money, which is paid as revenue in the form of wages to its workers, profit to its owners and so on. It is only when it is viewed from the perspective of the total social capital that this becomes apparent.

For Robinson Crusoe, it is obvious that time spent making or repairing nets, and so on, is time that is not being spent producing his own consumption goods.

Marx summarises the relations between capital and revenue that the economists misunderstood.

The key to understanding these relations is to understand the difference between content and form. The starting point is the concept that capital is a social relation between capital and wage labour. Capital in process exists as value. What is transferred from one stage of the circuit to another is capital-value. Money-capital is merely a form of capital-value. But, money can only be capital in the context of being in the process of becoming productive-capital, because money-capital cannot expand in value unless it is used to purchase wage labour for productive purposes.

The money that the capitalist possesses with the purpose of buying labour-power only becomes variable capital at the point it is laid out for that purpose. Until then it is not capital at all but only money – potential capital.

The difference between money and money-capital explains why the economists concept that variable capital acts as capital for the capitalist and revenue for the worker is wrong. As Marx sets out, the money laid out for labour-power is not variable capital, it is money-capital.

“So long as it persists in his hands in the form of money, it is nothing but a given value existing in the form of money; hence a constant and not a variable magnitude. It is a variable capital only potentially, owing to its convertibility into labour-power. It becomes real variable capital only after divesting itself of its money-form, after being converted into labour-power functioning as a component part of productive capital in the capitalist process.” (p 443)

Moreover, the worker does not sell labour-power as capital. It is not capital to them. It is not their variable capital, but the variable capital of the capitalist. The worker only sells a commodity labour-power. What they receive for it is not capital but merely money. The money-capital was only capital in the form of money because that was the shape the capital-value had to assume to perform its function at that stage. Once it buys productive-capital, it immediately sheds that form, leaving only the empty money shell behind it. The worker receives not money-capital, nor variable capital, but simply money – revenue.

*“We have here but the simple fact that the money of the buyer, in this case the capitalist, passes from his hands into those of the seller, in this case the seller of labour-power, the labourer. It is not a case of the variable **capital** functioning in a dual capacity, as capital for the capitalist and as revenue for the labourer. It is the same **money** which exists first in the hands of the capitalist as the money-form of his variable capital, hence as potential variable capital, and which serves in the hands of the labourer as an equivalent for sold labour-power as soon as the capitalist converts it into labour-power. But the fact that the same money serves another useful purpose in the hands of the seller than in those of the buyer is a phenomenon peculiar to the purchase and sale of all commodities.” (p 443-4)*

There follows from this false view a confusion in understanding the relation in the exchange of constant capital from **Department I** for consumption goods from **Department II**. Marx breaks this down into the components equal to the purchases of workers from wages, and capitalists from surplus value. He does so by examining the exchange from the perspective of both sides of the exchange.

If we look at the position of the worker – and this applies also to **Department II** workers – they are paid wages in return for selling their commodity – labour-power. The wages they receive are revenue. When they come to spend those wages, to buy commodities, they appear in the market, confronting the seller of those commodities, not as capital, but merely as a commodity owner. The relation between the two is that solely of two equal commodity owners. The consumption goods being bought by the worker might be bought from a capitalist, for whom these form part of his commodity-capital, but in the act of exchange, they stand only as commodities, like any other, that could just as easily have been brought to market by a peasant producer, rather than a capitalist.

The worker sells a commodity (LP) and obtains revenue as wages. But, this revenue is itself a commodity – money – the universal equivalent form of value. They expend that revenue and obtain commodities of equal value. Marx then examines this exchange from the other side, from the perspective of the capitalist.

Department II produces consumer goods, all of which serve to realise revenue for someone, i.e. revenue is ultimately spent to purchase goods for consumption rather than to act as capital. Here, a portion of **Department II's** output is to realise the revenue of

Department I workers, i.e. to provide them with consumption goods in exchange for the money paid to them as wages.

But, also for **Department II**, a part of their total output/commodity capital is equal to the constant capital used in its production - £2000 – just as another portion is equal to the variable capital used up in its production - £500 – and a final portion equal to the surplus value produced - £500.

In selling commodities to **Department I** workers, with a value of £1,000, **Department II** has recovered half of the value of the constant capital it consumed, and it has to do this via the sale of these commodities in order once more to purchase that constant capital, and continue production on the same scale.

“Hence it is not the variable capital lv , which has been converted into this first half of the constant capital-value llc , but simply the money which functioned for I as money-capital in the exchange for labour-power and thus came into the possession of the seller of labour-power, to whom it does not represent capital but revenue in the form of money, i.e., it is spent as a means of purchase of articles of consumption.” (p 446)

The money - £1,000 – received from these workers cannot function as constant capital. **Department II** has to buy it from **Department I**. Workers sold labour-power, received wages and spent them to buy commodities, C-M-C. But, this was money acting as revenue. The **Department II** capitalists sell commodities, receive money, and use it to buy commodities in the form of constant capital, C-M-C, but here the money acts as capital. Commodity-capital is realised as money-capital, which buys productive-capital.

“It is the reconversion of commodities into the material elements of which this commodity is made.” (p 446)

The £1,000 that the workers spend to buy commodities from **Department II** is not variable-capital, but money wages, money as revenue. It is an equivalent of the variable capital component of the value of **Department I** output, but that does not at all mean that it is the same thing or that those **Department II** commodities are bought with **Department I** variable capital.

Moreover, although the **Department I** workers produce commodities with a value of £6,000, and £1,000 of that is equivalent to the value of the variable capital, this £1,000 in the form of finished commodities – now sold to **Department II** – is no more variable capital than it was when it was in the form of money-capital, prior to being used to buy labour-power. It is only commodity-capital.

The **Department II** capitalists confront the **Department I** capitalists as buyers of commodities, just as vice versa, the **Department I** capitalists appear as sellers of commodities – means of production. In selling means of production, the money-capital can then only function as variable capital so long as it buys labour-power, once more.

“As money the variable capital-value was only potential variable capital. But it had a form in which it was directly convertible into labour-power. As a commodity the same variable capital-value is still potential money-value, it is restored to its original money-form only by the sale of the commodities, and therefore by II buying for 1,000 commodities from I .” (p 447)

In other words, what we have here is M-C-M. £1,000 of money-capital (M) is used in **Department I** to buy labour-power (C). The labour-power produces commodities (C') with a value of £6,000 (4000 c + 1000 v + 1000 s). With the £1,000 spent by **Department I**

workers with them, **Department II** capitalists buy £1,000 of these **Department I** commodities, thereby completing the circuit (M').

“The process of production intervening between C ... C does not itself belong in the sphere of circulation. It does not figure in the mutual exchange of the various elements of the annual reproduction, although this exchange includes the reproduction of all the elements of productive capital, the constant elements as well as the variable element (labour-power).” (p 447)

In short, £1,000 laid out for labour-power (M), commodities equal to that labour-power sold (C), money received for these commodities (M) equal to £1,000 so that labour-power can be bought once more.

“Result: I possesses once more the variable value-constituent of its capital in the form of money, from which alone it is directly convertible into labour-power, i.e., it once more possesses the variable capital-value in the sole form in which it can really be advanced as a variable element of its productive capital. On the other hand the labourer must again act as a seller of commodities, of his labour-power, before he can act again as a buyer of commodities.” (p 447)

The situation with **Department II** workers is more straightforward. They are paid £500. They produce commodities with a value of £3,000 (2000 c + 500 v + 500 s). The workers spend their £500 of wages buying a portion of the commodities they have themselves produced. **Department II** capitalists thereby realise in that sale the £500 they need to buy that labour-power once more. The workers having consumed those commodities once more need to sell that labour-power to obtain wages to continue to live.

The same is true in relation to those workers that work in **Department IIa** producing necessities. As for workers in **IIb** the relation is the same as for workers in **Department I**.

“ But it nevertheless makes a difference whether the labourers buy their means of subsistence directly from the capitalist producers to whom they sell their labour-power or whether they buy them from capitalists of another category, through whose agency the money returns to the former only by a circuitous route.” (p 449)

The reason is that workers live hand to mouth and need to spend all their wages to buy necessities. (This remains effectively true today for workers in aggregate. Some workers may save to cover expenditure at some future date, whilst other workers will only be able to spend by going into debt, or drawing down on savings).

But, that is not true for capitalists. They may buy in advance of needs, if they think they may benefit by it, but equally they will refrain from spending on consumption goods or advancing capital if they think that is beneficial. In that case, his payment to **Department I** will be delayed, and consequently **Department I** will only be able to reproduce its capital and continue production if it advances additional capital from the resources of **Department I** capitalists.

“If the exchange of the various elements of the current annual reproduction is to be investigated, so are the results of the labour of the preceding year, of the labour of the year that has already come to a close.” (p 450)

That is because the existing national product already exists, it has been produced, the labour process has been completed. The commodity-capital that comprises it is not something currently being produced, but something that has been produced. Even more is that the case with the productive-capital – both the means of production and the labour-

power – that produced that commodity-capital. The exchanges that led to the purchase of that productive-capital are further in the past, and the processes that created the labour-power and means of production, so that they were available to be exchanged, further back still.

In terms of the current situation, in relation to the national commodity-capital, the worker now only features as a buyer of commodities. He has already sold his labour-power, received wages, and produced commodities. His only function now is spending his wages.

“On the other hand the annual product must contain all the elements of reproduction, restore all the elements of productive capital, above all its most important element, the variable capital.” (p 450)

By spending his wages, the worker reproduces his labour-power, and is thereby enabled to once more throw it into the labour market, ready for capital to buy it again, and advance it as variable capital. In **Department I**, the capitalists had £1,000 in money-capital, and advanced it as variable capital, having bought the labour-power of workers that had a value of £1,000. Those workers bought £1,000 of consumption goods from **Department II**, with those wages, and that £1,000 was also equal to half the constant capital used by **Department II**, which was equal to the value of the **Department I** variable capital.

Department II was then able to use the money received to reconvert that portion of its constant capital, buying £1,000 worth from **Department I**. In turn, **Department I** thereby obtained £1,000 of money capital, restoring the variable capital previously advanced.

“The variable capital of I passes through three metamorphoses, which do not appear at all in the exchange of the annual product or do so only suggestively.” (p 450-1)

1. It is bought by **Department I** capitalists in exchange for £1,000 wages. There is no exchange between **Department I** and **II** here. However, after receiving their wages, the **Department I** workers use them to buy **Department II** consumer goods.
2. When labour operates in the production process, and thereby creates new value in the form of new use values.
3. In the completion of that process and the production of new use values, which form new commodities, which embody surplus value.

“During all these transformations capitalist I continually holds the variable capital in his hands; 1) to start with as money-capital; 2) then as an element of his productive capital; 3) still later as a portion of the value of his commodity-capital, hence in the form of commodity-value; 4) finally once more in money which is again confronted by the labour-power for which it can be exchanged.” (p 451)

“As the variable capital always stays in the hands of the capitalist in some form or other, it cannot be claimed in any way that it converts itself into revenue for anyone. On the contrary, 1,000 l^v in commodities converts itself into money by its sale to II half of whose constant capital it replaces in kind.” (p 452)

The variable capital-value remains in the hands of the capitalist. It has merely changed its form from the money form to that of productive labour. The only conversion into revenue is that which results from the workers sale of their commodity – labour-power – for wages. That is clearest, Marx says, where what is being produced is the money commodity itself – gold.

“If the capitalist is a producer of gold, then the variable portion of value — i.e., the equivalent in commodities which replaces for him the purchasing price of the labour — appears itself directly in the form of money and can therefore function anew as variable money-capital without the circuitous route of a reflux.” (p 452)

What is spent by the worker to buy consumer goods is not variable capital but wages. The wages spent by the workers are the same monetary amount as the variable capital, but they are two different things. They are the same money amounts because the variable capital advanced buys labour-power of the same value. The worker who sells that labour-power, is paid wages of that amount, and the worker spends all their wages to reproduce their labour-power.

XI. Replacement of the Fixed Capital

“In the analysis of the exchanges of the annual reproduction the following presents great difficulty. If we take the simplest form in which the matter may be presented, we get:

I) 4,000 c + 1,000 v + 1,000 s +

II) 2,000 c + 500 v + 500 s = 9,000.” (p 453)

The reason it poses a difficulty is that this formula is based on an equality that seems to disappear once you introduce the idea of the value of the wear and tear of equipment. The value of wear and tear of fixed capital is transferred to the value of the final product, and recovered in its price. However, the fixed capital continues to function and is only replaced some time later. Consideration then shows why this appears to breach the equality condition of the previous formula. **Department I** (v+s) bought £2,000 of consumer goods from **Department II**. They were able to do this because **Department II** bought £2,000 of means of production from **Department I**.

However, suppose of **Department II's** production £200 of value comprises £200 of wear and tear of machinery. This will mean that the machinery continues to function, and as seen previously, **Department II** will then hoard the £200 of the proceeds from the sale of its commodities, to fund their eventual replacement. However, the consequence of this is that **Department II** only spends £1,800 buying means of production from **Department I**. **Department I** is then £200 short of money-capital with which to buy consumer goods.

Marx sets about explaining how this apparent problem is resolved. In setting this out, Marx uses the terms “*wear and tear*” and “*depreciation*” interchangeably. I am following his practice, here, because it is simply easier to talk about depreciation. However, what is really meant here is wear and tear not depreciation. As set out elsewhere, except in special circumstances, depreciation does not transfer value. On the contrary, because it involves a reduction in use value, outside the production process, it represents a reduction in value, and capital loss.

What is being analysed here is the instruments of labour, big and small, from the tiniest tool to the largest mine, railway or factory. The raw and auxiliary materials are not involved here because they are wholly consumed, once they enter the production process. Of the actual instruments of labour, some of them too will be consumed during the year, and as we are considering the national product of a year's labour, they too can be discounted. Finally, some of the instruments of labour will require extensive repairs to continue functioning, some may even require entire parts and components to be replaced.

“These parts belong in one category with the elements of fixed capital which are to be replaced within one year.” (p 453)

The circulating capital, in the form of the raw and auxiliary materials, as well as the labour-power consumed, must be continually reproduced, changed from the money form back into the form of productive capital. It doesn't matter if these materials are bought in large quantities infrequently, or small quantities frequently. If they are bought in large amounts less frequently, so that a stock of material builds up, waiting to be used, this does not change matters either.

Here, a larger sum of capital has been advanced at the start to purchase these means of production, and as seen previously, the capital so advanced returns as the commodities produced as a result are sold. The capital as it returns, accumulates ready to make the next purchase.

"It is not a revenue-capital; it is productive capital suspended in the form of money." (p 454)

But, this is not the case with the fixed capital. It is wholly employed in the production process, but only that part of it used up in wear and tear transfers its value to the end product. When the commodity is sold, the money equivalent of that wear and tear is realised, in the price of the commodity, along with all the other components of its value. But, the money equivalent of the wear and tear then separates off, and is hoarded until it is needed to replace the fixed capital entirely.

"This money then serves to replace the fixed capital (or its elements, since its various elements have different durabilities) in kind and thus really to renew this component part of the productive capital. This money is therefore the money-form of a part of the constant capital-value, namely of its fixed part. The formation of this hoard is thus itself an element of the capitalist process of reproduction; it is the reproduction and storing up — in the form of money — of the value of fixed capital, or its several elements, until the fixed capital has ceased to live and in consequence has given off its full value to the commodities produced and must now be replaced in kind." (p 455)

Simple commodity circulation differs from barter because of the mediating role of money within the process of exchange. Similarly, the national output is not simply a matter of mutual exchange between **Department I** and **II**, but is mediated by billions of acts of buying and selling, in which money changes hands.

But, in aggregate, as we have seen, the consequence of all these transactions is a mass exchange between **Department I** and **II**, with the former providing the latter with necessary means of production and the latter providing the former with consumer goods. Within the context of this mass social exchange, we have seen how it is possible to break the different components of the physical output down into its value components of $c+v+s$, as Marx did in *Volume 1*.

So, for example, of **Department II** output, of £3,000, £2,000 constitutes c , £500 v , and another £500 s . Of the physical product then, two-thirds could be equated with c , and one sixth each to v and s . Similarly, with **Department I**, it broke down £4,000 c , £1,000 v , and £1,000 s . Two thirds of its output was needed to replace its constant capital, and one sixth each to replace the variable capital and surplus value.

On this basis, it becomes apparent that one third of **Department I's** output is exchanged for two-thirds of **Department II's** output. The one third of **Department I** output that is exchanged is equal to that portion of its output that is equal to the new value created, i.e. equal to $v+s$, and the two-thirds of **Department II** output that is exchanged for it, is equal to that portion of its output that is equal to c .

Looking at it from the perspective of these physical components is central to Marx's analysis and explanation here. In setting it out this way, Marx can then argue in relation to the physical output that is exchanged.

"The entire constant capital-value contained in the commodity mass II representing a value of 3,000 is therefore comprised in 2,000 c, and neither 500 v nor 500 s hold an atom of it. The same is true of v and s respectively.

In other words, the entire share of commodity mass II that represents constant capital-value and therefore is reconvertible either into its bodily or its money-form, exists in 2,000 c. Everything referring to the exchange of the constant value of commodities II is therefore confined to the movement of 2,000 II c. And this exchange can be made only with I (1,000 v+ 1,000 s).

Similarly, as regards class I, everything that bears in the exchange of the constant capital-value of that class is to be confined to a consideration of 4,000 I c." (p 456)

In other words, using the same method he used in *Volume I*, it is as though the two-thirds of output is equal to the value of c, containing only constant capital, that the one sixth equivalent of the variable capital contained no constant capital at all etc. This way of looking at things simplifies the important exchange to be considered here between II(c) and I(v+s).

1. Replacement of the Wear and Tear Portion of the Value in the Form of Money

Considering then this exchange between I(v+s) and II(c), it's clear that I (v+s) contains no constant capital. The value being exchanged from this side comprises only variable capital and surplus value. But, on the other side, the constant capital is only constant capital and part of it is a part of that value that is equivalent to wear and tear. That portion is not to be replaced immediately. It is to be hoarded as money, and only used to replace fixed capital when it is exhausted. This, of course, is happening all the time. The analysis is one of an existing capitalism in which firms have existed for varying periods of time, and along with them, that fixed capital, which itself is made up of a range of equipment with varying durability.

"Therefore the exchange of 2,000 II c for 2,000 I(v + s) includes a conversion of 2,000 II c from its commodity-form (articles of consumption) into natural elements which consist not only of raw and auxiliary materials but also of natural elements of fixed capital, such as machinery, tools, buildings, etc. The wear and tear, which must be replaced in money in the value of 2,000 II c, therefore by no means corresponds to the amount of the functioning fixed capital, since a portion of this must be replaced in kind every year. But this assumes that the money necessary for this replacement was accumulated in former years by the capitalists of class II. However that very condition holds good in the same measure for the current year as for the preceding ones." (p 457)

The reason for approaching things in this way becomes clear here because on the other side,

"In the exchange between I (1,000 v + 1,000 s) and 2,000 II c it must be first noted that the sum of values I(v + s) does not contain any constant element of value, hence also no element of value to replace wear and tear, i.e., value that has been transmitted from the fixed component of the constant capital to the commodities in whose bodily form v + s exist." (p 458)

It is only in relation to **IIc** that this exists, and hence the problem. The shortfall of £200, referred to earlier can only come from **Department I**, but that leads to absurd conclusions. **Department II** has commodities for sale whose value is £2,000. **Department I** workers and capitalists must pay £2,000 for them, if the condition that commodities exchange at their value is to hold. If **Department II** has only bought £1,800 of commodities from **Department I**, only **Department I** can make up the difference. However, unlike the money that **Department I** capitalists throw into circulation to cover their consumption, which is equal to their surplus value, this additional money would not return to them, because it is not equivalent to any component of the value of the commodities they sell to **Department II**.

“In such an event we would have a money-fund for II, placed to the credit of the wear and tear of its fixed capital. But then we would have an over-production of means of production in the amount of 200 on the other side, the side of I, and the basis of our scheme would be destroyed, namely reproduction on the same scale, where complete proportionality between the various systems of production is assumed. We would only have done away with one difficulty in order to create another one much worse.” (p 459)

Marx then examines a number of formulations of the problem.

*“Expressed in terms of value, 2,000 II c equals 1,800 c + 200 c (d), this d standing for **déchet**.” (p 459) (déchet means wear and tear).*

If we divide **Department II's** output up physically into those portions that represent $c+v+s$ then we can consider the exchanges as being the purchase of commodities out of, or exchange with, these different portions. So, **Department I**($v+s$) exchanges with **Department II**(c) or put another way, workers and capitalists from **Department I** buy goods out of that portion of **Department II's** output equal to the value of c , a proportion of total output value – two-thirds, or £2,000.

So,

“I buys with £1,000, which has gone to the labourers in wages for their labour-power, 1,000 II c of articles of consumption.” (p 459)

Similarly, with the £1,000 received, **Department II** buys £1,000 of means of production, which can be thought of as coming out of the corresponding proportion of **Department I's** output, which equals v , i.e. a sixth of its total output value, or £1,000. By this process, the £1,000 that **Department I** capitalists advanced as variable capital is returned to them, and can be used to buy labour-power once more.

Department II then advances £400 to buy means of production out of **Department I** (s), and **Department I** capitalists use this £400 to buy consumer goods out of **Department II** (c), so **Department II** has received back the £400 it advanced. **Department I** capitalists then buy another £400 of consumer goods out of **Department II** (c) and **Department II** capitalists buy £400 of means of production out of **Department I** (s).

To summarise:-

Department I, buys £1,800 of consumer goods using the following means.

Department II, buys £1,800 of constant capital using the following means

At the end, **Department I** has the £1,000 in money capital available to replace its variable capital. Its capitalists have £800 of consumer goods for which they exchanged £400 in

means of production and £400 in money. They also have £400 in money.

Department II has £1,800 in means of production obtained from **Department I**, by exchanging £1,000 consumer goods (for wages) £400 consumer goods, sold to **Department I** capitalists, and £400 in money.

However, out of the total output, **Department I** still has £200 of means of production, and **Department II** has £200 of consumer goods, (equal to 200 c (d)) unsold.

Department I capitalists buy those £200 of consumer goods, but **Department II** capitalists do not spend it to buy means of production, instead hoarding it to replace fixed capital, some time later. As a result, a fifth of **Department I's** surplus value cannot be realised.

“This not only contradicts our assumption of reproduction on a simple scale; it is by itself not a hypothesis which would explain the transformation of 200 c(d) into money. It means rather that it cannot be explained.” (p 460)

We would have to assume that **Department I** capitalists exchanged this remaining £200 of means of production gratis, but, of course, that is not a likely course for capital to take, especially considering that this would have to occur year after year. Marx equates the situation to that which applies to all those parasitic classes that also share in the surplus value. If, for whatever reason, they do not spend their share of the loot, then it does not go back into circulation, does not go back into the pocket of the capitalists, and thereby ceases to be available to be paid again as rent, interest and so on.

The problem is not resolved by drawing in the role of the merchant as intermediary. **Department I** must sell £200 of means of production out of **Department I(s)** to **Department II** capitalists to match the £200 of consumer goods it has bought. Otherwise, **Department I** surplus value is not fully realised. If **Department I** sells this £200 to merchants, the merchants still have to sell it to **Department II** capitalists.

“We see here that, aside from our real purpose, it is absolutely necessary to view the process of reproduction in its basic form — in which obscuring minor circumstances have been eliminated — in order to get rid of the false subterfuges which furnish the semblance of “scientific” analysis when the process of social reproduction is immediately made the subject of the analysis in its complicated concrete form.” (p 461)

The analysis set out by Marx here presages that of Keynes by around 60 years. The points that Marx is examining here, as discussed earlier, cover the aspects of forced savings, which appear as investment in the form of inventories, in Keynes' theory, as well as the concept of under-consumption, due to changes in, or in Marx's case, differences in, the marginal propensity to consume of different social classes; a point Marx specifically refers to in explaining the basis of crises in *Capital III, Chapter 15*.

Marx's analysis here also gives the lie to the idea that Marx rejected the potential of crisis arising from such under-consumption. The analysis here is based upon simple reproduction, and constant technology. In other words, any crisis that arises here cannot be attributed to a reduction in investment due to a falling rate of profit, caused by changes in the organic composition of capital. The disproportion here between **Department I** and **Department II** arises, not because of any change in values, technology or output. It arises, because fixed capital passes on its value in wear and tear to the value of **Department II** output, but this value of wear and tear, realised by **Department II**, is not then returned to **Department I**, in the purchase of fixed capital. In essence, as Marx says directly later, this amounts to an under-consumption of constant capital by **Department II**, even though there has been no actual change in its production and consumption.

The further elaboration here shows how this is resolved in theory, so that no disproportion, in fact arises. However, Marx in the previous quote, and in his later elaboration makes clear that although the removal of any “*obscuring minor circumstances*” is necessary, in order to obtain a clear theoretical understanding of the real relations, in practice, these circumstances take on a very real role. In practice, the replacement of fixed capital does not occur mechanically and smoothly, as the theoretical explanation requires. Any lengthening of the life of existing fixed capital, will cause the kind of under-consumption by **Department II**, described here, to arise, just as any shortening of its life will cause the opposite. Marx examines those situations later in the chapter.

But, Marx's reference to the role of the other exploiting classes has a similar consequence in practice as he describes in *Capital III, Chapter 15*. The industrial capitalists, may utilise any potential money-capital, not used for personal consumption, for productive investment, so that aggregate demand is sustained, by them, as either consumption or investment. The workers will use all of their wages to finance their consumption. But, landlords after utilising rents, obtained from capitalists, to finance their personal consumption, have no drive to invest the remainder productively, as the industrial capitalists do. To the extent that they simply save this remainder, they under-consume. This remainder gets thrown into the money market, and thereby acts to reduce interest rates. Marx in *Capital III*, sets out the way that one determinant of lower interest rates is the maturity of an economy, such that older societies, with a larger group of people with wealth, who do not participate in productive investment, thereby tend to produce a surfeit of potential loanable money-capital, which causes interest rates to be low.

2. Replacement of Fixed Capital in Kind

£1,000 is advanced as variable capital by **Department I**. The £1,000 received as wages by **Department I** workers is spent by them. This money does not flow directly to **Department II** capitalists. The workers buy goods from shops, they pay rent to landlords, bills to doctors, taxes to the state and so on. The recipients of these payments may then in turn spend the money they receive in a similar manner. Only after a multitude of such transactions, and a very circuitous route, does the money eventually find its way into the coffers of the **Department II** capitalists, who provide the required consumption goods.

The longer the process takes, and the longer then before the money is used by **Department II**, to purchase additional means of production, the more capital may have to be advanced to ensure that production is continuous.

It doesn't matter whether we assume that it is **Department I** capitalists who first spend money to buy **Department II** consumer goods, or whether it is **Department II** capitalists who first advance capital to buy **Department I** means of production. In reality, both will happen. Some **Department I** capitalists – for example those that have just set up in business – will lay out money to buy consumer goods before they have sold means of production. Similarly, some **Department II** capitalists will advance capital for means of production before they have sold consumer goods.

“This assumption must be made, for it would be arbitrary to presuppose the contrary, that capitalist class I or II should one-sidedly advance to the circulation of the money necessary for the exchange of their commodities.” (p 462)

In either case, the money spent or advanced, returns to its origin. Money spent by **Department I** capitalists, to buy consumer goods, returns to them in the form of realised surplus value. Money advanced by **Department II** capitalists to buy means of production returns to them in the realised value of that constant capital in the end product.

The problem we have is that **Department II** has sold £2,000 of consumer goods to **Department I**. Part of this £2,000 value is made up of £200 for wear and tear of fixed capital. Because this fixed capital is only replaced when it is worn out, the £200 is retained as a money fund to be spent later. But, that means **Department II** now only buys £1,800 of constant capital from **Department I**, leaving it with £200 of unsold commodities.

Marx sets out an example whereby firm X produces yarn using a spinning machine, which suffers this £200 of wear and tear. It reappears in the value of the yarn it produces. Firm X could then use this £200 not to buy the fractional part of a spinning machine that it represents, but instead to buy additional cotton. X buys £200 of cotton from Y. Now Y has £200 with which to buy yarn.

So, in other words, if we consider **Department I** here as the producer of means of production then it has to be remembered that these means of production do not physically have to be the same as their value equivalents at any one time. Here £200 represented wear and tear of the spinning machine, but rather than being spent to buy part of a spinning machine, it was used to buy additional cotton. Both are means of production bought from **Department I**, but both physically different. The problem then seems to be, what happens when firm X needs to lay out the additional capital to replace its spinning machine, having spent the money set aside for that purpose instead on additional cotton? For this to work, X has to throw £200 of additional money into circulation.

“But the absurdity is only apparent. Class II consists of capitalists whose fixed capital is in the most diverse stages of its reproduction. In the case of some of them it has arrived at the stage where it must be entirely replaced in kind. In the case of the others it is more or less remote from that stage.” (p 468)

So, one group is essentially at that stage as companies just setting up in business. That is, in addition to having to lay out capital for all of the materials, and labour-power (circulating capital) it also needs to lay out capital to buy fixed capital. What we have here is essentially the situation that Marx referred to in *Volume I*, which is the distinction between the money hoard accumulated to replace fixed capital, and the accumulation of surplus value becomes blurred. Here, the money hoard, to cover wear and tear, has been used for the purchase of additional material (cotton) which thereby represents an accumulation of capital.

At the same time, the other group is made up of companies that are essentially building up money hoards to cover the cost of replacing fixed capital. Marx argues then that if half of the **Department II** capitalists throwing in their £400 for means of production, do so to cover the purchase of circulating capital, and the other to cover that purchase plus the replacement of worn out fixed capital, it averages out.

“Hence, if we assume that half of the £400 thrown into circulation by capitalist class II for exchange with I comes from those capitalists of II who have to renew not only by means of their commodities their means of production pertaining to the circulating capital, but also, by means of their money, their fixed capital in kind, while the other half of capitalists II replaces in kind with its money only the circulating portion of its constant capital, but does not renew in kind its fixed capital, then there is no contradiction in the statement that these returning £400 (returning as soon as I buys articles of consumption for it) are variously distributed among these two sections of II. They return to class II, but they do not come back into the same hands and are distributed variously within this class, passing from one of its sections to another.” (p 463)

This assumption, however, is clearly false, but worse there is a logical flaw in Marx's argument here. The assumption itself could only apply if the average life of the fixed capital is only two years. For example, if the average life of the fixed capital were ten years, then on average, in any particular year, it is only 10% of the fixed capital which is worn out and needs to be physically replaced, whilst the other 90% continues to function, and its replacement value continues to be accumulated in money hoards.

The fact that the assumption is false, however, does not change the basis of the argument. It simply means that in any single year, a greater proportion of **Department I** output can be allocated to the production of circulating rather than fixed capital. The real issue here, as I will set out later arises with the consequences of the synchronisation of this replacement cycle.

The above explanation, however, seems to breach the requirement for simple reproduction because the use of money hoards to cover replacement of fixed capital, to cover the purchase of additional material implies expanded reproduction. If additional cotton were bought, this implies additional labour-power also has to be bought to process it. Marx's assumption that half the capitalists renew their fixed capital each year is a way around this. It means that a given amount of fixed capital (half the total) is replaced each year, so that each year, half of the **Department II** capitalists are responsible for buying the society's total production of fixed capital. In doing so, they provide the funds for **Department I** to buy **Department II** consumer goods. Within this process, the additional funds advanced by half the **Department II** capitalists, for this replacement fixed capital, flow back, but not necessarily to those that advanced it.

“One section of II has, besides the part of the means of production covered in the long run by its commodities, converted £200 in money into new elements of fixed capital in kind.” (p 464)

The fact that the assumption that fixed capital lasts only two years cannot be sustained, does not undermine this argument. It is merely a question of proportion as stated earlier. If the total output value of fixed capital, to be exchanged with **Department II**, is £200 it does not really matter, in this context, whether this amounts to the physical replacement of half of a **Department II** total stock of £400, or a 10% replacement of a total **Department II** stock of £2,000. The point is that **Department II** capitalists spend £200 per year to purchase this total output of £200. Where it does matter, however, is in relation to the synchronisation of replacement cycles, and in relation to what orthodox economics calls the “*accelerator*” effect. I will deal with this later.

The logical flaw in Marx's argument above, however, is that it is clearly not possible for “*half of the £400 thrown into circulation by capitalist class II for exchange with I (to) come(s) from those capitalists of II who have to renew not only by means of their commodities their means of production pertaining to the circulating capital, but also, by means of their money, their fixed capital in kind, while the other half of capitalists II replaces in kind with its money only the circulating portion of its constant capital, but does not renew in kind its fixed capital...*”

Logically, we have to assume that each section of **Department II** spends the same on circulating capital in any one year. Both have to buy the same amount of labour-power, and the same amount of material to process to ensure that production continues at the same level, and that this meets the requirement of simple reproduction. But, if both sections spend the same on circulating capital, whilst one section additionally buys replacement fixed capital, the total £400 to be made up of half from each section. The latter must clearly provide a greater proportion of the £400.

If we set out Marx's example, what we then have is:-

Department I

c 4000 + v 1000 + s 1000 = 6000, of which 200 is fixed capital for **Department 2**.

Department II

c 2000 (including 200(d) on fixed capital) + v 500 + s 500 = 3000.

Each year then **Department II** spends £2,000 buying constant capital from **Department I**. £200 of this represents the physical replacement of half of **Department II's** fixed capital. The total value of that fixed capital must then be £400, but only half is replaced each year. So, for example, if we assume there are ten firms in **Department II**, each on average has £40 of fixed capital. Each year, five of them replace this fixed capital = £200. If this £200 flows back to **Department II** capitals evenly, in any one year, each firm will then get back $200/10 = £20$. In the year they replace their fixed capital, therefore, they only get back half the £40 they advance to buy it. They must make up the difference by throwing an additional £20 each into circulation. By contrast, however, the other section of **Department II** capitalists obtain £20 each, back out of circulation, that they have not thrown into it, because they were not renewing their fixed capital.

This section is made more difficult because Marx changes the numbers he uses in the example. As Engels says, that doesn't change the basis or validity of the argument, however, because it is merely a question of proportions.

On the basis of the £2,000 of constant capital sold by **Department I**, to **Department II**, £1,800 is for circulating capital, and £200 for fixed capital. **Department I** workers have bought £1,000 of consumer goods, thereby accounting for the exchange I(v) with half of II(c).

Marx points out that,

“Just as constant capital-value, variable capital-value, and surplus-value — into which the value of commodity-capital II as well as I is divisible — may be represented by special proportional shares of commodities II and I respectively, so may, within the value of the constant capital itself, that portion of the value which is not yet to be converted into the bodily form of the fixed capital, but is rather to be accumulated for the time being in the form of money.” (p 464)

£800 of circulating constant capital and £200 of fixed constant capital are thereby left to be exchanged, i.e. **Department I** (s) with **Department II** (c). The £200 of fixed capital has to be bought by **Department II** capitalists to replace their worn out equipment. As we have seen they achieve that by in part selling commodities to **Department I**, and in part by throwing additional funds into circulation. They could have thrown the whole of this £200 into circulation to buy this fixed capital, but then half of it would have returned to them in the sale of their commodities.

Marx says,

“As for the second half (equal to 200) of the £400 thrown into circulation by II in this final operation, it buys circulating components of constant capital from I. A portion of these £200 may be thrown into circulation by both sections of II, or only by the one which does not renew its fixed component of value in kind.” (p 465)

But this seems to just repeat the flaw in Marx's argument referred to earlier. The only way this would seem to apply would be if the section that did not replace its fixed capital, instead purchased additional circulating capital, which then covered it for the following year. Although in practice, the purchases by **Department II** capitalists of circulating capital will not be distributed evenly, for the the purpose of logical consistency, it has to be assumed that, in order for simple reproduction to continue, both sections of **Department II** capitalists (those replacing fixed capital and those not) buy the same quantity of circulating capital each year. The consequence being that in one year the former lays out £200 more capital than the latter, and vice versa in the following year.

Department I(s) amounts to £1,000, and assuming that the £1,000 of wages **Department I**(v) paid out to buy consumer goods, were then used by **Department II** to buy circulating capital, then this means that with £200 used by **Department II**(i) to buy fixed capital, £800 of circulating capital is left to buy from **Department I**. On this basis, of the argument set out above, that would mean £400 each from **Department II** (i) and (ii).

Department II (i) lays out £200 for fixed capital. **Department I** uses this money to buy consumer goods from **Department II** (i) and (ii), who thereby receive £100 each.

Department II (i) then uses the £100 to buy circulating capital. It adds a further £300 to this and thereby purchases all the circulating capital it requires.

Department II (ii) receives £100 back from the purchase of fixed capital by **Department II** (i), but without having laid out money itself, for the purchase of fixed capital. It uses this £100 and adds a further £300 to buy all the circulating capital it requires.

At the end of this process, **Department I** has sold £200 of fixed capital to **Department II** (i) and £800 of circulating capital, to **Department II** (£400 each to i and ii) which equals £1,000 or equal to **Department I** (s).

Department II (i) has bought £200 of fixed capital and £400 of circulating capital. The £200 of money-capital it began with has been used up.

Department II (ii) has bought £400 of circulating capital.

However, **Department I** has now received an additional £800 from the purchase of this circulating capital. It buys £800 of consumption goods from **Department II** (£400 each from **Department II** (i) and (ii)).

Finally, **Department I** has sold all of its output. £2,000, **Department I** (v+s), has been sold comprising £200 fixed capital and £1800 circulating capital. **Department I** workers have bought £1,000 of consumer goods, from their wages, thereby reproducing their labour-power. **Department I** capitalists have bought £1,000 of consumer goods, thereby realising their surplus value.

At the start of the next cycle, **Department II** (i) has £400 available for the purchase of circulating capital. **Department II** (ii) also has £400 available to purchase its circulating capital, but must also throw a further £200 into circulation, to cover the replacement of the fixed capital it is now its turn to replace.

As with previous examples, there are numerous variations of these exchanges such that, e.g. **Department I** may spend money to buy consumer goods prior to **Department II** (i) buying replacement fixed capital; **Department II** might advance capital to buy circulating capital ahead of replacing fixed capital, and so on. In reality, some **Department II** firms will be replacing fixed capital at the start of the year and others at the end of the year, and so

on. All of these variations still result in the mass social exchange, between **Department I** and **II**, being completed, provided that **Department II** advances the necessary capital for the replacement of the fixed capital. All of these variations are possible simply on the basis of the assumption that capital exists simultaneously in its different forms of money-capital, productive-capital and commodity-capital.

Marx then analyses three different scenarios, after the exchange for fixed capital has occurred, i.e. £200 has been advanced by **Department II** (i) to replace its fixed capital, and **Department I** has used this £200 to buy consumer goods, leaving £800 of consumer goods still to be exchanged.

- a. The remaining consumer goods have to replace circulating constant capital of £400 each for **II** (i) and **II** (ii).
- b. **II** (i) has already sold all its commodities, whilst **II** (ii) has £800 still to sell.
- c. **II** (ii) has sold all but £200.

Marx has previously pointed out that just as a physical proportion of the output can be equated with c, v and s , so a proportion can be equated with (d) the value of the wear and tear. On that basis, the £200 of commodities left with **II** (ii) in (c) above are equivalent to the value of (d), the wear and tear.

In the working of these examples, Marx uses different numbers to those he began with (he has a figure of £400 for commodities left to exchange rather than £800). For consistency, I am using the numbers he used in initially formulating the model, with the appropriate adjustments.

a) **Section II** (i) has advanced £200 to replace its fixed capital. Marx seems to assume that **Department I** then uses this £200 to buy consumer goods from **II** (i), though there is no reason why this necessarily follows. In that case, if **Department II** began with £1,000 of commodity-capital divided £500 **II** (i) and (ii) each, then **II** (i) is left with £300 of commodities and **II** (ii) with its £500 of commodities.

II (i) then advances a further £400 and **II** (ii), £400 to buy the circulating capital they both require. In reality, both could advance smaller amounts than this in varying combinations, the money then flowing back from **Department I** for the purchase of consumer goods.

Continuing the example, however, we assumed that **II** (i) and **II** (ii) both have a commodity-capital to begin with equal to £500, to exchange with **Department I** (s). **II** (i) has already sold £200 of its £500 as a reflux of the £200 advanced for fixed capital. It can then only sell £300 worth of its remaining commodity-capital. So, it sells the remainder, meaning it brings in £500, having laid out £600.

But, **II** (ii) sells all of its commodity-capital, £500, having only laid out £400 for circulating capital.

II (i) has bought £400 of circulating capital and £200 of fixed capital, equals £600, whilst receiving back £500, leaving it £100 down. **II** (ii) has bought £400 of circulating capital whilst selling £500 of consumer goods, leaving it £100 up, as a money hoard, which can be used the following year towards the purchase of fixed capital. **Department II**, as a whole, has exchanged £1,000 of its commodity-capital, for the commodity-capital of **Department I** (£200 of fixed capital and £800 of circulating constant capital). But, it achieved this on the basis that **Department II** (i) was a buyer of £100 of commodities, from **Department I**, for which it was not an equivalent seller. It made up the difference from its money hoard.

Similarly, **Department II** (ii) was a seller of £100 of commodities to **Department I**, for which it was not an equivalent buyer. **Department I** was able to buy these £100 of commodities from **II** (ii) because it had received £100 in money from **Department II** (i), which it had not used to buy an equivalent value of commodities from **II** (i).

This is a slightly different conclusion to the one that Marx arrives at (even allowing for the change in numbers), but that is because I think there is a logical flaw in Marx's argument. He assumes that **II** (i) in buying fixed capital, buys less circulating capital, whilst **II** (ii), having not bought fixed capital, buys more circulating capital.

But, there is no logical reason to assume, given simple reproduction, that the output or the demand for circulating capital would vary from year to year. Indeed, if both sections of **Department II** were to conform with the assumption set out, *“that a share of the 400 still existing with II as a remnant in the shape of commodities must replace certain shares of the circulating parts of the constant capital for sections 1 and 2 (say, one half for each)”* (p 465) then both **II** (i) and **II** (ii) must have the same output, and circulating capital to produce it. Marx seems to be aware of this problem and refers to it obliquely later in a different form, where he says,

“If the greater part of commodity-capital I consists of elements of the fixed capital of II c, then a correspondingly smaller portion consists of circulating component parts of II c, because the total production of I for II c remains unchanged. If one of these parts increases the other decreases, and vice versa. On the other hand the total production of class II also retains the same volume. But how is this possible if its raw materials, semi-finished products, and auxiliary materials (i.e., the circulating elements of constant capital II) decrease?” (p 471)

I'll come back to this later.

b) Here **II** (i) has £200 in money, having already sold all its commodities (the total commodity-capital of **Department II** is £2,000, so we can assume it is divided £1,000 each to section (i) and (ii)). In that case, **II** (i) may have sold, for example, £800 to **Department I** workers, and £200 to **Department I** capitalists. **II** (ii) may have sold £200 to **Department I** workers, leaving £800 to sell to **Department I** capitalists.

So, **II** (i) will have bought £800 of circulating capital, equal to its exchange with **Department I** (v). **II** (ii) will have bought £200 of circulating capital equal to its exchange with **I** (v). **II** (i) has advanced £200 for fixed capital. It has sold its remaining £200 of commodities to **I** (s), leaving it with £200 in money.

Now, **II** (ii) has £800 of its commodity-capital left to sell. It does this by exchanging it with **I** (s) for circulating capital of that amount.

An alternative scenario here would be that **II** (i) has sold £1,000 of its commodity-capital to **I** (v) having bought £800 of circulating constant capital, and thereby leaving it with £200 in money. **II** (ii) has bought £200 of circulating capital, and sold £200 of consumer goods to **I** (s), leaving it with £800 of consumer goods to sell. **II** (i) then uses its £200 in money to buy fixed capital. This £200 flows back to **Department II**, but can only flow back to **II** (ii) because **II** (i) has sold all its commodity-capital. **II** (ii) then exchanges its remaining £800 of consumer goods with **I** (s) made up of £600 of circulating capital, and plus the £200 **I** (s) received from **II** (i) for fixed capital.

c) Here we assume again both **II** (i) and **II** (ii) begin with £1,000 each of commodity-capital, £1,000 of which is exchanged against **I** (v) and the other with **I** (s). **II** (ii) has exchanged £800 with **I** (v), leaving it with £200 to exchange. **II** (i) has exchanged £200 with **I** (v), and

has £200 in money as a result. It has £800 of commodity-capital left to exchange with I (s). II (i) advances £1,000 in money. £200 buys its replacement fixed capital, and £800 buys its circulating capital. With the £1,000 received, **Department I** (s) buys the remaining £200 of II (ii)'s commodity-capital, and the remaining £800 of II (ii)'s commodity-capital.

As Marx points out,

“The difficulty encountered in the exchange ... was reduced to the difficulty on exchanging remainders.” (p 467)

In other words, once the requirement to produce, and replace, fixed capital is taken out, the problem resolves itself into the division of the circulating capital, and the commodity-capital.

Put simply, **Department I** has £800 of commodity-capital left to exchange with **Department II**, which has £800 of commodities plus £200 in money, which is the fund for wear and tear of fixed capital, ready to be used to purchase that replacement fixed capital.

“It is evident here that II, section 1, buys with 200 in money the component parts of its fixed capital, 200 ls. The fixed capital of II, section 1, is thereby renewed in kind and the surplus-value of I, worth 200, is converted from the commodity-form (means of production, or, more precisely, elements of fixed capital) into the money-form. With this money I buys articles of consumption from II, section 2, and the result for II is that for section 1 a fixed component part of its constant capital has been renewed in kind, and that for section 2 another component part (which compensates for the depreciation of its fixed capital) has been precipitated in money-form. And this continues every year until this last component part, too, has to be renewed in kind.” (p 468)

The important conclusion from this is that,

“this fixed component part of constant capital II, which is reconverted into money to the full extent of its value and therefore must be renewed in kind each year (section 1), should be equal to the annual depreciation of the other fixed component part of constant capital II...” (p 469)

It is important because,

“Such a balance would seem to be a law of reproduction on the same scale. This is equivalent to saying that in class I, which puts out the means of production, the proportional division of labour must remain unchanged, since it produces on the one hand circulating and on the other fixed component parts of the constant capital of department II.” (p 469)

And the consequence of a disproportion arising between the two, Marx later describes in the situation where less fixed capital is demanded in any particular period.

“There would be a crisis — a crisis of over-production — in spite of reproduction on an unchanging scale.” (p 472)

Incidentally, this is one of the clearest statements, by Marx, of what he means by a “*crisis of overproduction*”. Its clear that the crisis of overproduction he describes here has nothing to do with “*under-consumption*” because it is not consumption that is reduced here other than productive-consumption. Nor is the crisis of overproduction a consequence of the tendency of the rate of profit to fall, which, in any case, is a long-term tendency, whereas crises of overproduction are sudden ruptures.

This crisis of overproduction, described here, is simply a reflection of the fact that a given physical quantity of fixed capital has been produced, whereas the requirement, in the market, for that physical quantity does not exist. To use Marx's basic formulation of this situation, labour-time has been expended that was not socially necessary. What appeared to be capital, therefore, was not. It lacked the basic requirement of capital that it be self-expanding value. It was instead over accumulated, an overproduction of capital. But, much more has been written about Marx's theory of crisis, in my book, "*Marx and Engels' Theories of Crisis: Understanding The Coming Storm*".

Marx then looks at the consequences of such a disproportion from both angles, where the depreciation fund is less than the amount of fixed capital actually replaced, and where it is higher.

In the first case, Marx sets out, **Department I** has £200 of fixed capital, **I (s)** to exchange. **Department II (i)** has £220 in money to buy the required fixed capital, and **Department II (ii)** has £200 of commodity-capital, equal to the depreciation fund.

So, **II (i)** advances £200 to buy the fixed capital. **Department I (s)** spends the £200 buying consumer goods from **II (ii)**. That leaves £20 in the hands of **II (i)** that cannot be converted into means of production. This problem cannot be resolved by setting the remainder of **Department I (s)** at £220 rather than £200. If that were the case, **II (i)** would spend £220 buying constant capital from **I (s)**. **Department I (s)** would then have £220 to spend, but **Department II(ii)** only has £200 of commodity-capital to sell to them. **Department I (s)** is then left with £20, meaning £20 of surplus value it cannot realise.

In the second case, **Department I** has £200 in commodities to exchange, **Department II (i)** has £180 in money, and **II (ii)** has £200 in commodities, equal to the depreciation fund.

Department II (i) buys £180 of constant capital from **Department I (s)**. **Department I (s)** buys £180 of consumer goods from **Department II (ii)**. But, that leaves £20 of unsaleable constant capital, in the hands of **Department I (s)**, and £20 of consumer goods unsaleable in the hands of **Department II (ii)**, because neither now have available money-capital to advance that would facilitate the exchange.

As with the first case, it would not help to make **Department I (s)** £180.

"True, no surplus would then be left in 1, but now as before a surplus of 20 would remain in II c (section 2), unsaleable, inconvertible into money." (p 470)

What is the solution to this problem?

"If II c (1) is greater than II c (2), foreign commodities must be imported to realise the money-surplus in Is. If, conversely, II c (1) is smaller than II c (2), commodities II (articles of consumption) will have to be exported to realise the depreciation part of II c in means of production. Consequently in either case foreign trade is necessary.

Even granted that for a study of reproduction on an unchanging scale it is to be supposed that the productivity of all lines of industry, hence also the proportional value-relations of their commodities, remain constant, the two last-named cases, in which II c (1) is either greater or smaller than II c (2), will nevertheless always be of interest for production on an enlarged scale where these cases may infallibly be encountered." (p 470-1)

In other words, given the basic assumption of capitalism as a system based on capital as self-expanding value, and given this means that reproduction will occur on an extended

scale, such disproportions are an inherent feature of the system, and must then lead to crises of overproduction of capital.

“This illustration of fixed capital, on the basis of an unchanged scale of reproduction, is striking. A disproportion of the production of fixed and circulating capital is one of the favourite arguments of the economists in explaining crises. That such a disproportion can and must arise even when the fixed capital is merely preserved, that it can and must do so on the assumption of ideal normal production on the basis of simple reproduction of the already functioning social capital is something new to them.” (p 473)

A short term fix may be achieved, as Marx says above, via foreign trade, but this offers no real solution. As Marx also says,

“Foreign trade could help out in either case: in the first case in order to convert commodities I held in the form of money into articles of consumption, and in the second case to dispose of the commodity surplus. But since foreign trade does not merely replace certain elements (also with regard to value), it only transfers the contradictions to a wider sphere and gives them greater latitude.” (p 472-3)

The argument that Marx sets out here is basically the phenomenon that orthodox economics refers to as the *Accelerator Effect*. It basically goes like this. Suppose each year, firms replace 10% of their machines. If say there are 100 machines, that means orders for machine makers, each year, for 10 machines. Suppose then that trade improves by 10%, causing firms to need 10% more machines. That means in this year they demand 20 machines rather than 10. But that represents not a 10% rise in orders to machine makers, but a 100% increase!

It means they will have to double their own purchases of materials, labour-power etc. This argument is usually coupled with the multiplier effect to indicate the extent to which this increase in demand for fixed capital will have a disproportionate effect on the level of aggregate demand.

However, the contrary, also applies. If there is a slow down in trade, firms may postpone their usual replacement of equipment. In that case, machine makers suffer not a 10% reduction, but a 100% reduction in orders, with a consequent effect on aggregate demand. In short, the crisis of overproduction, Marx described.

The problem is made worse, as I suggested earlier, because of the synchronisation of equipment replacement cycles. That means large amounts of equipment may become in need of replacement one year, with very little for the next few years. The basis of Marx's assumption, that replacement was evenly spread, was that different firms begin trading at different times, they expand at different rates, and so on. Equipment is bought at varying times and thereby becomes due for replacement at a range of times.

But, Marx was aware that, in practice, this assumption does not hold. The processes of concentration and centralisation of capital mean that the spread of industrial firms is continually reduced; large firms may make existing equipment last, and replace it top to bottom, with the latest equipment, once it has been proved by other, often newer, smaller firms; moral depreciation, in the form of qualitatively newer, more efficient equipment, forces firms to abandon their existing equipment, whether it is worn out or not, and buy the new equipment.

The consequence is that an increasing proportion of equipment is bought at the same time, and subsequently wears out at the same time. Even where it is not physically worn out, it is replaced with the next generation of equipment, as part of a regular upgrade cycle.

This has been particularly marked in relation to new technology. Computer chips essentially double in power every eighteen months. Software developers base their own development cycle on this increase in speed and power, to determine the kinds of products, or development of existing products they can offer. Buyers of computers, then, have tended to gear their own upgrade cycle to when new versions of operating systems etc. are released, buying replacement machines and software together.

Given the increasing role of services within the economy, and given the centrality of personal computers and software, and mobile devices, to much service provision, this is one reason that a discernible three year economic cycle has developed over the last 20-30 years. But, microchip technology has become ubiquitous, whether it is in a mobile phone, a car, a washing machine, or the latest jet liner. Consequently, the upgrade cycle for microchips has a far more regularising and synchronising effect on a range of equipment and commodities than simply that on the PC.

3. Results

“If — all other things, and not only the scale of production, but above all the productivity of labour, remaining the same — a greater part of the fixed element of II c expires than did the year before, and hence a greater part must be renewed in kind, then that part of the fixed capital which is as yet only on the way to its demise and is to be replaced meanwhile in money until its day of expiry, must shrink in the same proportion, inasmuch as it was assumed that the sum (and the sum of the value) of the fixed part of capital functioning in II remains the same.” (p 471)

But, this leads to the series of problems listed above.

“If the greater part of commodity-capital I consists of elements of the fixed capital of II c, then a correspondingly smaller portion consists of circulating component parts of II c, because the total production of I for II c remains unchanged. If one of these parts increases the other decreases, and vice versa. On the other hand the total production of class II also retains the same volume. But how is this possible if its raw materials, semi-finished products, and auxiliary materials (i.e., the circulating elements of constant capital II) decrease?” (p 471)

Secondly, the greater the proportion of fixed capital to be physically replaced, the greater the amount of money that flows to **Department I** to purchase it, i.e. as means of payment rather than as means of circulation. But, then this greater quantity of money in the hands of **Department I** capitalists is unable to find an increased quantity of **Department II** consumer goods to buy with it. On the contrary, the more **Department II** spends on fixed capital the less it has to spend on circulating capital, and so the less it is able to increase or even sustain its level of output.

Department I then has an excess of money over the available consumer goods. It can overcome this by buying imported consumer goods. As stated previously, however, if the expenditure on fixed capital falls, this means that less money-capital is advanced by **Department II**, whilst the value of wear and tear on fixed capital, continues to accumulate in the depreciation fund. **Department I** is then unable to sell all of its output.

“There would be a crisis — a crisis of over-production — in spite of reproduction on an unchanging scale.”(p 472)

In contrast to the previous situation, one way to resolve this would be for **Department I** to export its surplus production. Yet, as Marx points out, all this does is to extend the problem

to a wider international sphere, and thereby create the conditions for a national crisis to become an international crisis.

“Such surplus is not an evil in itself, but an advantage; however it is an evil under capitalist production.” (p 472)

Once capitalism is abolished, the problem does not disappear, Marx says, but the means of dealing with it changes. If more fixed capital has to be physically replaced in one year, less will need to be replaced in the next. To maintain production at a stable level, the quantities of circulating capital have to be maintained. The solution to this problem then simply becomes the production each year of relative surpluses.

“There must be on the one hand a certain quantity of fixed capital produced in excess of that which is directly required; on the other hand, and particularly, there must be a supply of raw materials, etc., in excess of the direct annual requirements (this applies especially to means of subsistence). This sort of over-production is tantamount to control by society over the material means of its own reproduction. But within capitalist society it is an element of anarchy.” (p 473)

Part 4

XII. The Reproduction of the Money Material

Marx then turns to the reproduction of gold as the money-commodity. He lists the main gold producing countries, but, as before, proceeds on the basis of gold production occurring within the economy being considered.

The basis for that is,

“Capitalist production does not exist at all without foreign commerce. But when one assumes normal annual reproduction on a given scale one also assumes that foreign commerce only replaces home products by articles of other use or bodily form, without affecting value-relations, hence without affecting either the value-relations in which the two categories “means of production” and “articles of consumption” mutually exchange, or the relations between constant capital, variable capital, and surplus-value, into which the value of the product of each of these categories may be divided. The involvement of foreign commerce in analysing the annually reproduced value of products can therefore only confuse without contributing any new element of the problem, or of its solution. For this reason it must be entirely discarded. And consequently gold too is to be treated here as a direct element of annual reproduction and not as a commodity element imported from abroad by means of exchange.” (p 474)

Gold production, as with every other such production of metals, comes within **Department I**. Suppose the value of output is 30, made up of 20 c + 5 v + 5 s, then the 5 v and 5 s, i.e. I(v+s) are to be exchanged for consumption goods – the gold workers use their wages, and the gold capitalists realise their surplus value, by buying the consumer goods they need.

The gold capitalists buy labour-power, 5 v, using their existing money-capital. The gold workers use it to buy consumer goods from **Department II**. If **Department II** then uses £2 of this £5 to buy gold as constant capital, e.g. to produce jewellery, from **Department I**, £2, which is actually II (v) (i.e. it is a reflux of £2 out of the £5 advanced as variable capital) returns to **Department I**. In order to reproduce that labour-power, equal to £2, **Department I** capitalists must advance it once more as variable capital, paying out £2 in wages.

If **Department II** does not advance any further payment for gold, **Department I** capitalists can buy consumer goods by throwing gold into circulation from their production. As the money-commodity, gold can buy any other commodity. **Department I** is not acting as a seller. It is not selling its gold for money, in order to use that money to buy some other commodity. Its own commodity already is money, and so it is able to simply exchange it directly for the commodities required. Marx notes,

*“A considerable quantity of **gold bullion** ... is taken direct to the mint at San Francisco by the owners.” **Reports of H. M. Secretaries of Embassy and Legation**, 1879, Part III, p. 337.” (Note 54, p 475)*

Department II (c) bought £2 of gold to use as constant capital, e.g. to produce jewellery. The gold producers from **Department I**, then use a further £3 of their actual gold production so as to reproduce its £5 of variable capital, i.e. to be able to cover the wages of its workers.

Those workers will then spend that £5, buying consumer goods, from **Department II**. Having done so, **Department II** is left with money in its hands as a hoard. £2 existed to begin with, so the increase amounts to £3, equal to the additional sum thrown into circulation direct from production.

Department II has acquired all the gold it needed as constant capital, which amounted to £2, leaving it with £3 of gold as a hoard. But, this seems to contradict the equality condition established previously that the production equal to **Department I**(v+s) exchanges fully with the production equal to **Department II** (c). Here, **Department I**(v+s) = £5, but **Department II** (c) = £2.

This is a peculiarity of the production of gold as the money-commodity.

“... this money must be transferred in its entirety from II c to II s, no matter whether it exists in necessities of life or articles of luxury, and vice versa corresponding commodity-value must be transferred from II s to II c. Result: A portion of the surplus-value is stored up as a money-hoard.” (p 476)

In other words, instead of **Department II** exchanging consumer goods (be they necessities or luxuries) for **Department I** constant capital, it exchanges some of these consumer goods only for money-gold.

“In the second year of reproduction, provided the same proportion of annually produced gold continues to be used as material, 2 will again flow back to I g, and 3 will be replaced in kind, i.e., will be released again in II as a hoard, etc.” (p 476)

“We see, then, aside from I c which we reserve for a later analysis, that even simple reproduction, excluding accumulation proper, namely reproduction on an extended scale, necessarily includes the storing up, or hoarding, of money. And as this is annually repeated, it explains the assumption from which we started in the analysis of capitalist production, namely, that at the beginning of the reproduction a supply of money corresponding to the exchange of commodities is in the hands of capitalist classes I and II. Such an accumulation takes place even after deducting the amount of gold being lost through the depreciation of money in circulation.

It goes without saying that the more advanced capitalist production, the more money is accumulated in all hands, and therefore the smaller the quantity annually added to this hoard by the production of new gold, although the absolute quantity thus added may be considerable.” (p 477)

Marx returns then to the question raised earlier, about how it is that, in aggregate, capitalists can take more money out of circulation than they have thrown into it, i.e. where does the money come from to realise in money form the surplus value. The answer to that question, Marx repeats, is that it is only necessary that there is sufficient money to effect the circulation of the quantity and value of commodities themselves. If the total value of commodities, to be circulated, is, for example, £1 billion, it does not matter whether the proportion of this £1 billion comprising surplus value is £100 million or just £1 million. There is still required enough to circulate the £1 billion in either case.

This, as we have seen, essentially breaks down into a discussion between capital and revenue, the circuit of capital and the circuit of money. On the one hand, money-capital is advanced to buy those commodities that comprise productive-capital, i.e. $c+v$. On the other hand, money-revenue is spent by capitalists (s) to buy consumer goods.

“For the individual capitalist, as well as for the entire capitalist class; the money in which they advance capital is different from the money in which they spend their revenue. Where does the latter money come from? Simply from the mass of money in the hands of the capitalist class, hence by and large from the total mass of money in society, a portion of which circulates the revenue of the capitalists.” (p 478)

If we look at the capitalist only as a representative of capital, we see him continually throwing commodities on to the market that contain the surplus value, but we do not see that capitalist throwing an amount of money into circulation that would seem to be required for that surplus value to be realised. If, on the other hand, we look at the capitalist as a buyer of commodities, they only seem to throw into circulation enough money as is required as an equivalent of the value of the commodities they withdraw from it.

But, the reality is that the capitalist has obtained something for nothing. They have laid out one sum of money and obtained a larger sum of money back again. Had the capitalist been able to simply consume this surplus in kind, rather than in money, it would be obvious. The capitalist would have laid out a certain amount of means of production, and means of subsistence, required by his workers, and at the end of that process, he would have had a surplus product that he could consume himself. But, the intervention of money obscures this reality.

If the capitalist lays out £80 and obtains a product worth £100 they have obtained something for nothing. If the capitalist sells these commodities for £100, and then buys £100 of other commodities, at their value, they have still obtained something for nothing. The fact that the money they throw into circulation, to buy these latter £100 of commodities, is only equal to the value of the commodities they draw out of it, does not mean they have not thrown money into circulation to cover surplus value, precisely because the value of the commodities they withdraw from circulation already itself comprises surplus value. In buying the commodities of other capitalists, at their value, and therefore, including the surplus value, they automatically, as we have seen, throw sufficient money into circulation to enable other capitalists to buy their commodity at its value, and also, therefore, including its surplus value.

If capitalist A lays out £80 and obtains a commodity worth £100, and exchanges this with B, who has likewise laid out only £80 and obtained a commodity worth £100, it does not change the fact that A has obtained £20 for nothing, and B has done likewise. When considered at a social level that becomes clear.

“But the surplus-product in which the surplus-value is represented does not cost the capitalist class anything.” (p 478-9)

Marx again emphasises how much disdain he has for those economists like Adam Smith (who was followed in this by Keynes and others) who equated *National Income* ($v+s$) with *National Output* ($c+v+s$).

“We have seen that with Adam Smith the entire value of the social product resolves itself into revenue, into $v + s$, so that the constant capital-value is set down as zero. It follows necessarily that the money required for the circulation of the yearly revenue must also suffice for the circulation of the entire annual product, that therefore in our illustration the money required for the circulation of the articles of consumption worth 3,000 also suffices for the circulation of the entire annual product worth 9,000. This is indeed the opinion of Adam Smith, and it is repeated by Th. Tooke. This erroneous conception of the ratio of the quantity of money required for the realisation of revenue to the quantity of money required to circulate the entire social product is the necessary result of the uncomprehended, thoughtlessly conceived manner in which the various elements of material and value of the total annual product are reproduced and annually replaced. It has therefore already been refuted.” (p 479)

Businesses when they first start up, necessarily throw a considerable amount of money into circulation in exchange for the fixed capital they buy. Periodically, as this capital is replaced, they again throw large amounts of money into circulation, and this only returns to them gradually, in the value of wear and tear transferred to the end product. In addition, they also periodically have to throw money into circulation to cover large-scale repairs, or the replacement of parts of their equipment.

“While, then, on the one hand more money is withdrawn from circulation than is thrown into it, the opposite takes place on the other hand.” (p 481)

In all those industries where the production period – as opposed to the working period – is long, capitalists have to keep throwing money into circulation, because they are unable to throw commodities into circulation. A wine producer, for example, may have completed all of the working-period for the wine, but the production period continues way beyond this, as the wine ferments and matures. The capitalist cannot sell it until that process is complete. Yet, they will still have to lay out money-capital to buy labour-power to tend the vineyard, to buy means of production of various kinds, as well as spending money to cover their own consumption needs.

“During this period the money thrown by them into circulation serves to convert commodity value, including the surplus-value embodied in it, into money. This factor becomes very important in an advanced stage of capitalist production in the case of long-drawn out enterprises, such as are undertaken by stock companies, etc., for instance the construction of railways, canals, docks, large municipal buildings, iron shipbuilding, large-scale drainage of land, etc.” (p 481)

The capitalists who produce money commodities, like gold and silver, only throw commodities into circulation to the extent to which these commodities are used as constant capital by other capitalists. Otherwise, they throw money directly into circulation, and withdraw commodities from it.

“On the one hand all kinds of things circulate as commodities which were not produced during the given year, such as land lots, houses, etc.; furthermore goods whose period of production exceeds one year, such as cattle, timber, wine, etc. For this and other phenomena it is important to establish that aside from the quantity of money required for the immediate circulation there is always a certain quantity in a latent non-functioning state which may start functioning if the impulse is given. Furthermore, the value of such products

circulates often piecemeal and gradually, like the value of houses in the rents over a number of years.

On the other hand not all movements of the process of reproduction are effected through the circulation of money. The entire process of production, once its elements have been procured, is excluded from circulation. All products which the producer himself consumes directly, whether individually or productively, are also excluded. Under this head comes also the feeding of agricultural labourers in kind.” (p 481-2)

So, the money required to circulate commodities within the economy does not itself have to be produced during the current year. It already exists, and has been accumulated over long periods. The only gold produced, during the current year, that might be required, to meet the needs of circulation, is that required to replace worn out coins.

This, of course, is premised upon money being exclusively in the form of precious metals. Marx obviously had no delusions about that assumption, but there was a good reason for basing his analysis upon it, which is that although an analysis of paper money and credit money is necessary, the reality is that the fundamental laws are grounded upon the relations outlined above.

*“This assumption is not made from mere considerations of method, although these are important enough, as demonstrated by the fact that Tooke and his school, as well as their opponents, were continually compelled in their controversies concerning the circulation of bank-notes to revert to the hypothesis of a purely metallic circulation. They were forced to do so **post festum** and did so very superficially, which was unavoidable, because the point of departure in their analysis thus played merely the role of an incidental point.” (p 482)*

But also, Marx continues, under capitalism, money plays a prominent role, because it is the form in which variable capital is advanced. Actually, today this too is not strictly true. In Marx's time, and until quite recently, workers would have been paid their wages in actual money – though more recently in paper money tokens as opposed to coin. But, today, most workers are paid by bank transfer. Workers in turn pay many of their bills by similar means, so the actual transformation of labour-power into money, and money into commodities is effected without the same intervention of real money.

The use of money to buy wage labour, however, is quite the opposite of the situation under previous modes of production, Marx explains. For example, under slavery, the slave occupies the same position that fixed, constant capital does under capitalism. A large, single sum is paid out to buy the slave, whose value is transferred, through wear and tear, to the end product, and thereby recovered only gradually.

Once the basis of the annual flows of funds is understood, and established this then gives *“rise to a methodical use of the mechanical appliances of the credit system and to a real fishing out of available loanable capitals.” (p 484)*

Those flows of money, Marx lists as arising from the *“exchange of the annual products”* discussed above; the lump sum advances for fixed capital; the natural formation of money hoards, arising from the needs of circulation, due to a range of factors such as the varying lengths of production period, the different times money must be advanced to cover trade over varying distances, the different size of supply required by different businesses etc.

XIII. Destutt De Tracy's Theory of Reproduction

In examining the writing of Destutt, on social reproduction, Marx once again has to deal with many of the same false arguments he revealed in *Volume I*, in relation to the source of

profit. Marx quotes Destutt,

"I shall be asked how these industrial entrepreneurs can make such large profits and out of whom they can draw them. I reply that they do so by selling everything which they produce for more than it has cost to produce; and that they sell:

1) to one another for the entire portion of their consumption intended for the satisfaction of their needs, which they pay with a portion of their profits;

2) to the wage-labourers, both those whom they pay and those whom the idle capitalists pay; from these wage-labourers they thus extract their entire wages except perhaps their small savings;

*3) to the idle capitalists who pay them with the portion of their revenue which they have not yet given to the wage-labourers employed by them directly; so that the entire rent which they pay them annually flows back to them in this way or the other.' (Destutt de Tracy, **Traité de la volonté et de ses effets**, Paris, 1826, p. 239.)" (p 484-5)*

The basic argument here is that we have seen previously, and which Marx demolished in *Volume I*, i.e. that profit arises by selling commodities above their value. The only elaboration here by Destutt is that he separates those on whom this fraud is perpetrated into the different groups of the capitalists themselves, the workers and the '*idle capitalists*', by whom he means the landlords and money capitalists, who share the surplus value of the productive-capitalists.

But, as Marx illustrates, rather than improving things, this elaboration only results in greater confusion and absurdity. To briefly restate the refutation of the basic argument, profit overall cannot result from selling commodities above their value, for the simple reason that, if everyone does this, every gain is cancelled by the loss on the other side of the trade. If A sells a commodity for £12 that has a value of £10, they make a gain of £2. But, when A appears as a buyer rather than a seller, and similarly buys a commodity from B for £12, that has a value of £10, he makes a loss of £2!

There is no difference whether A exchanges a commodity with B, and B exchanges a commodity with A with a price tag of £12 or £10. In the end, whatever price has been put on it, no profit can arise simply from the exchange. All that has arisen is an inflation of prices. This, in fact, is what has happened with the bubbles in the prices of things like shares, bonds, and property at the present time.

"...and this would seem to be rather a method of impoverishing than of enriching themselves since it compels them to keep a large portion of their total wealth unproductively in the useless form of circulation media. The whole thing boils down to this, that despite the all-round nominal rise in the price of their commodities the capitalist class has only £400 worth of commodities to divide among themselves for their individual consumption, but that they do one another the favour of circulating £400 worth of commodities by means of a quantity of money which is required to circulate £500 worth of commodities." (p 485)

That is a perfect description of the current situation in respect of those bubbles, and the huge money printing conducted by central banks. It is not a method for increasing wealth, but of reducing it.

The argument is not improved by Destutt's application of it, in relation to the selling of commodities to workers rather than to other capitalists. If capitalists pay workers £100 in wages, and those workers buy back, the commodities they have produced, with that same

£100, then it's clear the capitalists have become not one jot richer by this process. They began with £100, they advanced the £100, and in its place obtained £100 of commodities. They sold the £100 of commodities and received in their place £100 in money, taking them back to where they started!

"The reflux of this money might therefore at best explain why the capitalists do not get poorer by this transaction, but by no means why they get richer by it." (p 486)

More importantly,

"To be sure it is another question how the capitalists came into possession of the £100 and why the labourers, instead of producing commodities for their own account, are compelled to exchange their labour-power for these £100. But this, for a thinker of Destutt's calibre, is self-explanatory." (p 486)

But, Destutt's problem is not resolved by recourse to his claim that the profit arises from selling these commodities above their value. If the capitalists have paid the workers £100 in wages, they might then charge £120 for them. But, it is impossible for the workers to pay £120, because they have only £100 in wages to spend.

The alternative is that the workers hand over this £100, but receive back commodities worth only £80. In other words, the capitalist has cut wages by 20% in real terms. In that case, the same effect could have been achieved by paying workers only £80 in wages to begin with, and then selling them £80 worth of commodities. That is provided, of course, that the workers continued to provide to the capitalist the same quantity and value of commodities as before, i.e. with a value of £100.

"This seems to be the normal way, considering the class of capitalists as a whole, for according to Monsieur Destutt himself the labouring class must receive a "sufficient wage" (p. 219), since their wages must at least be adequate to maintain their existence and capacity to work, "to procure the barest subsistence." (p. 180). If the labourers do not receive such sufficient wages, that means, according to the same Destutt, "the death of industry" (p. 208), which does not seem therefore to be a way in which the capitalists can get richer." (p 487)

That, of course, is the secret Marx elaborated in *Volume I*. Provided the £80 wages represents the value of the labour-power, i.e. is sufficient to buy the commodities to ensure its reproduction, then the workers *can* be sold back this £80 of commodities they have produced, and the capitalist *can* make a surplus value, provided the workers have produced a surplus of commodities over and above that, and those commodities represent a surplus value, that can be appropriated by the capitalist.

Once again, it is not the price tag on these commodities that is significant. The labour-power has a definite value determined by those commodities required for its production. Whatever nominal figure is placed upon it, as wages, be it £80, £100 or £120, the fact remains those wages must be sufficient to buy those commodities necessary for the worker to be reproduced.

"If the capitalist class pays the labourers £80, then it has to supply them with commodities worth £80 for these £80 and the reflux of the £80 does not enrich it. If it pays them £100 in money, and sells them £80 worth of commodities for £100 it pays them in money 25 per cent more than their normal wage and supplies them in return with 25 per cent less in commodities." (p 487)

But, if as according to Destutt, the workers are paid a 'normal' wage, i.e. enough in money to cover the value of commodities required for their subsistence, but then charges those workers above that value, its clear that they cannot then buy all of the commodities they require! They may as well have paid wages below the subsistence level.

"Hence Destutt should have reduced the entire secret of how the capitalist class gets richer to the following: by a deduction from wages. In that case the other surplus-value funds, which he mentions under 1) and 3), would not exist." (p 488)

The secret of the surplus value, as we have seen, is not that the capitalist makes a deduction from wages, or pays workers less than the value of their labour-power, which would lead to the destruction of the workers, and consequently to the destruction of capital itself. It is that the workers are paid the value of their labour-power but create, for capital, in return a greater value. But, for capital to be able to realise this surplus value, the capitalists, as a class, must possess, physically, the surplus product within which this surplus value is embodied.

"The capitalist gets richer by appropriating, besides the surplus-value — that portion of the product in which surplus-value is represented — 25 per cent of that portion of the product which the labourer should receive in the form of wages." (p 489)

Marx is both correct and incorrect in his further comment here. He says,

"The capitalist class would not gain anything by the silly method Destutt conceived. It pays £100 in wages and gives back to the labourer for these £100 £80 worth of his own product. But in the next transaction it must again advance £100 for the same procedure. It would thus be indulging in the useless sport of advancing £100 in money and giving in exchange £80 in commodities, instead of advancing £80 in money and supplying in exchange for it £80 in commodities. That is to say, it would be continually advancing to no purpose a money-capital which is 25 per cent in excess of that required for the circulation of its variable capital, which is a very peculiar method of getting rich." (p 488)

Marx is absolutely correct that there is no difference between paying the workers £100 in wages, and then selling them commodities, worth £80, for £100, than paying wages of £80, and selling workers commodities valued at £80, for £80. Provided the value of labour-power is £80, and the workers produce commodities with a value of £100, a surplus value of £20 is produced either way. There seems no logical reason to choose the former method over the latter, given that it is more convoluted.

But, of course, in the last century, we have seen precisely why capital has chosen this more convoluted option. It is this. In analysing piece wages, Marx highlighted a problem for capital. If the value of labour-power is £50 per day, then if piece workers produce 50 pieces per day, they are paid £1 per piece. With a 100% rate of surplus value, the capitalist also makes a surplus value of £50 per day, £1 per piece. But, if productivity rises, perhaps because of a new machine, then workers might produce 100 pieces per day. If they continue to be paid £1 per piece, their wages will rise to £100 per day, whilst the surplus value will disappear. Capital needs to reduce the payment per piece to £0.50. But, there is no reason workers would voluntarily agree to such a reduction. Marx points out that this led to continual conflicts between workers and employers.

But, what applies to piece rates applies also to day rates. If increases in productivity mean that whereas previously 6 hours per day were required to reproduce the value of labour-power, only 3 are now required, then nominal wages should also fall by 50%, in line with the fall in the value of labour-power.

As capital moved away from the extraction of absolute surplus value, and towards relative surplus value, it was precisely this kind of continual increase in productivity that made it possible. But, the same problem identified by Marx, in relation to piece wages, is noted by Keynes in relation to wages in general, i.e. they are “*sticky downwards*”. Productivity rises, the value of commodities falls, and so the value of labour-power falls, but workers resist any reduction in their nominal wages.

The simple answer then is to utilise precisely the kind of “*money illusion*” involved in Destutt's argument. Rather than nominal wages falling, as productivity rises, they stay the same, or increase slightly, but money prices for the commodities the workers buy for their subsistence also rise, whereas their value falls! The whole secret of Fordism was that if productivity rises by more than the rise in workers real wages, profits can also continue to rise, whilst workers become incorporated because they feel they are sharing in the benefits of the system. For example,

$$c\ 1000 + v\ 1000 + s\ 1000 = C\ 3000 = 3000\ \text{units.}$$

The price per unit is then £1. Wages buy 1000 units. If productivity doubles, the value of labour-power falls by 50%, meaning surplus value rises.

$$c\ 1000 + v\ 500 + s\ 1500 = C\ 3000 = 6000\ \text{units.}$$

Price per unit = £0.50. Wages still buy 1000 units, so real wages are constant. Workers still produce the same amount of new value, equal to £2,000, but now, surplus value accounts for 75% of it. In fact, as Marx pointed out in *Volume I*, capital benefits further here, because this surplus value of £1,500 now buys 3000 units of output, whereas previously it would only have bought 1500.

However, if nominal prices also double, as a result of a devaluation of the currency.

$$c\ 2000 + v\ 1000 + s\ 3000 = C\ 6000 = 6000\ \text{units.}$$

Here nominal wages have remained constant, and the nominal price per unit of output has also remained constant, although its value has been halved.. But, workers can still only buy 1000 units of output so, their real wage is unchanged.

Finally, if real wages also rise by 10%,

$$c\ 2000 + v\ 1100 + s\ 2900 = C\ 6000 = 6000\ \text{units}$$

The new value created by workers remains £2,000, but at the new inflated prices appears as £4,000. With a 10% rise in real wages, the workers now have nominal wages of £1,100, which buys 1100 units rather than 1000 units. But, even with this rise in real wages, surplus value has risen compared to the original situation, because of the increase in productivity, which generates a rise in relative surplus value. Originally, the surplus value of £1,000 would have bought 1000 units. Now the surplus value at nominal prices of £2,900, buys 2900 units.

Originally, the rate of profit was $s/c+v = 1000/(1000 + 1000) = 50\%$. Now the rate of profit is $2900/3100 = 93.5\%$!

The establishment of the Federal Reserve in 1913, and the role of other central banks, in printing money to ensure that nominal price levels do not fall, has been vital to this process of ‘*money illusion*’ to ensure that relative surplus value could continue to be pumped out of workers, as rapidly rising productivity brought about continual reductions in the value of

commodities. That has been marked over the last thirty years. Huge advances in technology, as well as the bringing into the realm of exchange value, of massive swathes of the globe, in Asia and elsewhere, led to a significant fall in the value of commodities, and of labour-power. To avoid large falls in nominal wages – and nominal prices which are damaging for oligopolies – central banks printed huge amounts of money to create this kind of money illusion.

The side effect was to blow up massive asset price bubbles in stocks, bonds and property, and to encourage borrowing against it. But, the potential to make huge speculative capital gains from the rise in financial asset prices, underpinned by those central banks – the so called “*Greenspan Put*” - also provided an incentive for the owners of loanable money-capital, and their representatives on company boards, to use revenues derived from surplus value (interest, rent, profit of enterprise) for further such speculation, rather than in actual capital accumulation. That acted to suppress economic growth. The resultant lower growth, together with incentive for currency to be drawn away from general circulation, and into such speculation, meant that the hyper-inflation of asset prices, was mirrored by a disinflation, and even deflation of commodity prices, creating a vicious circle.

Returning to Destutt's argument, the final group from which he sees profit being extracted is the *'idle capitalists'*. Destutt argues that the industrial capitalists cover their own consumption out of a portion of their profits. But, the industrial capitalists also have to pay the *'idle capitalists'*. If the industrial capitalist makes a profit of £200, and uses £100 to cover their consumption, they may pay over the other £100 as rent to the landlord, and interest to the money capitalist. These idle capitalists may in turn require £80 for their own consumption, and pay £20 to servants etc.

The servants with the £20 in wages, buy commodities worth £20, and thereby £20 flows back to the industrial capitalists who produced those commodities. Similarly, the idle capitalists spend their £80 on buying commodities from the industrial capitalists. But, it's clear that no profit can arise for the industrial capitalists from this process.

Firstly, if this £100 (80 + 20) simply flows back to the industrial capitalists in return for £100 of commodities, the industrial capitalist only gets back in money what they have handed over in commodities. They now just have back £100 in money in place of the £100 in commodities they have sold. But, even if the industrial capitalist gets back £100 in money, whilst cheating the idle capitalists by selling them commodities only worth £80, they have not gained thereby. They have only reduced their loss by £20. The industrial capitalist gave the landlord, money-capitalist etc. the £100 in the first place. They have simply been handed part of it back.

“Of course the land and capital borrowed by the industrial capitalists from the idle capitalists and for which they have to pay a portion of their surplus-value in the form of ground-rent, interest, etc., are profitable for them, for this constitutes one of the conditions of production of commodities in general and of that portion of the product which constitutes surplus-product or in which surplus-value is represented. This profit accrues from the use of the borrowed land and capital, not from the price paid for them. This price rather constitutes a deduction from it. Otherwise one would have to contend that the industrial capitalists would not get richer but poorer, if they were able to keep the other half of their surplus-value for themselves instead of having to give it away. This is the confusion which results from mixing up such phenomena of circulation as a reflux of money with the distribution of the product, which is merely promoted by these phenomena of circulation.”
(p 490)

But, even Destutt, who began by claiming that a part of the industrial capitalists' profit came from selling commodities to the idle capitalists above their value, is forced to recognise this.

“Whence come the revenues of these idle gentry? Do the revenues not come out of the rent paid to them out of their profits by those who put the capitals of the former to work, i.e., by those who pay with the funds of the former a labour which produces more than it costs, in a word, the industrial capitalists? It is always necessary to hark back to them to find the source of all wealth. It is they who in reality feed the wage-labourers employed by the former.” (p. 246.)” (p 490)

If the industrial capitalist sells £80 of commodities to the idle capitalists for £100, they thereby reduce the reduction of their own profit from £100 to £80. If they sell £100 of commodities to them for £120 they still only reduce the reduction of their own profit by £20. But, now this also presumes that the idle capitalists have some other form of wealth to make up the difference. If they get £100 from the industrial capitalists, but each year pay them back £120, then each year the amount of that wealth decreases, and must ultimately be exhausted.

Moreover, by the same token, that the industrial capitalists simply put a higher price tag on their commodities, they were selling, to achieve Destutt's profit, there would be no reason for the landlords and the money capitalists not to increase their own price tags for rent and interest to the industrial capitalists.

“This brilliant analysis is quite worthy of that deep thinker who copies on the one hand from Adam Smith that

'labour is the source of all wealth' (p. 242)

that the industrial capitalists

'employ their capital to pay for labour that reproduces it with a profit' (p. 246)

and who concludes on the other hand that these industrial capitalists

'feed all the other people, are the only ones who increase the public wealth, and create all our means of enjoyment' (p. 242)

that it is not the capitalists who are fed by the labourers, but the labourers who are fed by the capitalists, for the brilliant reason that the money with which the labourers are paid does not remain in their hands, but continually returns to the capitalists in payment of the commodities produced by the labourers.

'All they do is receive with one hand and return with the other. Their consumption must therefore be regarded as engendered by those who hire them.' (p. 235.)” (p 491-2)

Chapter 21 - Accumulation and Reproduction on an Extended Scale

Part 1

"It has been shown in Book I how accumulation works in the case of the individual capitalist. By the conversion of the commodity-capital into money the surplus-product, in which the surplus-value is represented, is also turned into money. The capitalist reconverts the so metamorphosed surplus-value into additional natural elements of his productive capital. In the next cycle of production the increased capital furnishes an increased product. But what happens in the case of the individual capital must also show in the annual reproduction as a whole, just as we have seen it happen on analysing simple reproduction, namely, that the successive precipitation – in the case of individual capital – of its used-up fixed component parts in money which is being hoarded, also finds expression in the annual reproduction of society." (p 493)

Suppose we have an additional capital made up:-

$$c\ 400 + v\ 100 + s\ 100 = 600.$$

The capital sells the output for £600, and can thereby reproduce itself by buying again £400 of constant capital, and £100 of labour-power. But, given certain assumptions, it can also use the £100 of surplus-value to accumulate, to buy additional constant capital, and labour-power, and thereby to produce an even larger amount of value and surplus value. The assumptions are that this £100 of surplus-value is enough to purchase the additional means of production and labour-power required. In *Volume I*, it was seen that capital can only expand in accordance with certain technical limits determined by the *Technical Composition of Capital*. For example, a glass manufacturer might have a furnace with six openings. To run it efficiently, they need enough capital to employ teams of workers for each opening, and materials for them to work with.

But, the surplus value does not have to expand an existing business. It could be used to start some new business. However, the same assumption applies. It must be sufficient to enable the required amount of capital to be set in motion. If not, the surplus value may not be consumed unproductively. It could be hoarded in money form, waiting for the time when a sufficient hoard exists to set in motion the required capital. We will see later that the development of credit, as well as the development of socialised capital in the form of joint stock companies and co-operatives, are a means of mobilising these individual capitals and putting them to work, rather than them lying fallow.

The second assumption made is that production on an extended scale has been in process previously. This might seem to involve a circular argument – explaining the existence of expanded reproduction on the basis of an assumption of expanded reproduction. It isn't, for the simple reason that the whole of Man's history has been characterised by expanded reproduction. From the first primitive humans, mankind has learned how to utilise social surpluses for the production of means of production so as to extend its productive potential further still. All this assumption does is to accept that reality, and demonstrate how this operates under capitalist production.

Marx has demonstrated how the money society requires to circulate commodities already exists. It has built up over long periods of history. In being sufficient to circulate all of these commodities, it is automatically able to circulate the surplus value, which is embodied within those commodities. But, the other side of this, which requires the assumption of

expanded reproduction, is precisely that, in order that the money form of this surplus value can be realised in additional productive capacity – means of production and labour-power – that money must be able to buy them, i.e. the additional means of production and labour-power must be available to be bought.

“It makes no difference if they are not bought as finished products but made to order. They are not paid for until they are in existence and at any rate not until actual reproduction on an extended scale, an expansion of hitherto normal production, has taken place so far as they are concerned. They had to exist potentially, i.e., in their elements, as it requires only the impulse of an order, that is, the purchase of commodities before they actually exist and their anticipated sale, for their production really to take place. The money on the one side then calls forth extended reproduction on the other, because the possibility of it exists without money. For money in itself is not an element of real reproduction.” (p 494)

This is a point I have made in recent years in relation to the situation in Greece, that what it required to resolve its problems was not more money, but more capital. It is not the money that arises from the realisation of surplus value that constitutes new wealth. That was a view that affected the *Mercantilists* and the *Money School*. The new wealth existed as soon as a surplus product came into existence. If 100 kilos of wheat seed are required to produce wheat, and a worker requires 10 kilos for their own subsistence, then having grown 200 kilos of wheat, the additional wealth resides in the 90 kilos of wheat, that exists at the end of this process over and above what existed prior to it.

Moreover, if this additional 90 kilos is left locked up in a store, and used neither to enable additional planting, nor additional consumption, it does not even then function as additional wealth, but only as a sterile hoard. The same is true if the product is realised in the money form. The additional wealth arises with the production of the surplus product. A capitalist may sell that product, and thereby obtain an amount of money over and above what they require to simply reproduce their constant and variable capital. It is not the money equivalent of the surplus product that constitutes additional wealth, however, but the surplus product itself.

If the capitalist is not able to utilise this surplus value, but has to store it up until it can be used, it simply forms a sterile hoard.

“This hoard of A, which is potentially new money-capital, is not additional social wealth, any more than it would be if it were spent in articles of consumption. But money withdrawn from circulation, which therefore previously existed in circulation, may have been stored up at some prior time as a component part of a hoard, may have been the money-form of wages, may have converted means of production or other commodities into money or may have circulated portions of constant capital or the revenue of some capitalist....Only in the production of gold – inasmuch as the gold product contains a surplus-product, a depository of surplus-value – is new wealth (potential money) created, and it increases the money material of new potential money-capitals only so far as the entire money-product enters into circulation.” (p 494-5)

In the latter case, the gold constitutes new wealth not because gold is money, but quite the opposite, because it is a commodity! The hoarded money is potential money-capital because it is being hoarded for the purpose of buying productive-capital, at some point. In this respect, it is like the depreciation fund, analysed in the previous chapter, whose purpose is to store up the money equivalent of the value of the wear and tear of fixed capital so as to be able to purchase its replacement at some future time, when the fixed capital has become worn out.

The apparent problem there was that an amount of value equivalent to wear and tear was being taken out of circulation without an equivalent amount of value appearing to be thrown back in. **Department II** appeared to be selling to **Department I** without buying back to an equivalent extent. The answer was that though **Department II** was selling to **Department I** without buying, in respect of this wear and tear, a section of **Department II** was buying from **Department I** without selling, because that section of **Department II** was handing over its depreciation fund to buy new fixed capital, without selling an equivalent amount of commodities to **Department I**, to bring about a reflux of that money.

Here we have a comparable situation. Each year, every individual capital produces surplus value. Every capitalist realises the surplus value in money form with the selling of their commodity-capital. They then hoard the money form of the surplus value.

“Money is withdrawn from circulation and stored up as a hoard by selling commodities without subsequent buying. If this operation is therefore conceived as a general process, it seems inexplicable where the buyers are to come from, since in that process everybody would want to sell in order to hoard, and none would want to buy. And it must be conceived generally, since every individual capital may be in the process of accumulation.” (p 495)

Marx then gives an explanation that even he describes as based on “absurd” assumptions, but whose purpose is to “do nothing more than explain the possibility of a universal simultaneous formation of a hoard” (p 495). He assumes that instead of exchanges taking place in the way they do, A-B, C-D, E-F, F-B, D-A, and so on, in other words numerous bilateral simultaneous exchanges, instead exchanges take place only in a linear fashion, with all other capitals exchanging only with a gold producer.

As a gold producer, i.e. producer of money, the gold producer always here only buys without selling. This is the converse of the situation above where the surplus value is hoarded in money because, in respect of the surplus value, the capitalist sells without buying. They sell the surplus product, and then hoard its money equivalent rather than buying anything with it.

Here, the gold producer produces gold-money and simply buys commodities with it.

“In that case the entire yearly social surplus-product (the bearer of the entire surplus-value) would pass into his hands, and all the other capitalists would distribute among themselves pro rata his surplus-product, which naturally exists in the form of money, the natural embodiment in gold of his surplus-value. For that portion of the product of the gold producer which has to make good his active capital is already tied up and disposed of. The surplus-value of the gold producer, created in the form of gold, would then be the sole fund from which all other capitalists would draw the material for the conversion of their annual surplus-product into money. The magnitude of its value would then have to be equal to the entire annual surplus-value of society, which must first assume the guise of a hoard.” (p 495)

To put this another way, we can think about the process we have analysed several times before. Under simple reproduction, the capitalists advance money-capital to buy labour-power. The workers so employed use the wages paid to them to buy commodities, and thereby the capitalists who have paid their wages, by advancing variable capital, see that capital return to them. By the same token, the capitalists advance capital to buy means of production, and that money goes into circulation, and finds its way back to them via the sale of the corresponding proportion of their output. Finally, the capitalists spend a part of their money hoard, to buy the commodities required for their own consumption, equal to

their surplus value, and thereby they put into circulation themselves the money required to realise their own surplus value.

In this process, it was assumed that the commodities the capitalists bought – equal to their surplus value – with the money equivalent they threw into circulation, were the things they required for their own reproduction – food, shelter, clothing etc. But, we can just as easily assume that what they buy with this money-capital, equal to surplus value, is instead gold. In that case, as Marx describes, the whole of the society's surplus product would be held in the form of gold. But here, gold is also money, and so we have arrived at the position that demonstrates the logical possibility of such a universal money hoard, of capital selling its surplus product, and realising its value without the need also to buy an equivalent of that surplus product. The whole surplus product now exists solely as a money hoard, as gold, waiting to be mobilised.

I. Accumulation in Department I

1. The Formation of a Hoard

Marx examines first the process of accumulation in **Department 1**. As stated previously, the situation is essentially the same as that encountered in relation to the replacement of fixed capital. Some capitals are buying without selling, and others are selling without buying.

“One part of the capitalists is continually converting its potential money-capital, grown to an appropriate size, into productive capital, i.e., with the money hoarded by the conversion of surplus-value into money they buy means of production, additional elements of constant capital. Another part of the capitalists is meanwhile still engaged in hoarding its potential money-capital. Capitalists belonging to these two categories confront each other: some as buyers, the others as sellers, and each one of the two exclusively in one of these roles.” (p 496)

In other words, some businesses are just starting up. They buy large amounts of fixed capital, and circulating capital thereby throwing large amounts of money-capital into circulation, but taking only a small amount out by comparison. They are buyers but not sellers, at least for a large proportion of what they have bought. There are other capitals, who have stored up sufficient money hoards that they now have sufficient money capital to expand their business, buying additional machines, constructing a new factory or branching out into some new type of business. They too now throw this large amount of new additional money-capital into circulation, buying all of these additional commodities as well as labour-power.

But, the commodities they throw into circulation themselves in no way are equal to the value of all these commodities they have bought. They too are buyers without being sellers. In both cases, the difference between what is bought and what is sold, the commodities withdrawn from circulation and the commodities thrown into circulation is made up by the additional money-capital thrown into circulation. But, for everything to balance out here, so that there is not a surplus or a deficit of commodities available to be bought or sold to match all of these capitals that are buyers but not sellers, there must be sellers who are not buyers. There must be capitals that throw more commodities into circulation than they take out of it, and who thereby take more money out of circulation than they throw into it, just as the former throw more money into circulation than they took out of it.

This is the key to understanding the actual process of accumulation, and given that under capitalism, this proceeds according to no plan, and not even from year to year, but via billions of individual acts of saving and spending, over different periods of time, the true complexity of the process can be grasped. As Marx comments later,

"...all these necessary premises demand one another, but they are brought about by a very complicated process, including three processes of circulation which occur independently of one another but intermingle. This process is so complicated that it offers ever so many occasions for running abnormally." (p 500)

If A sells to B commodities with a value of £600, made up of $c\ 400 + v\ 100 + s\ 100$, and then hoards the £100 of surplus value, this simply means that this £100 cannot go to expanding production. If, as with simple reproduction, he, along with other capitalists, throws it back into circulation to buy articles of consumption, this provides the means for him and other capitalists to realise their surplus value.

But, if they realise that surplus value as described previously, by buying gold and thereby accumulating a money hoard, this in no sense means that simple reproduction ceases. The necessary funds are still generated to once more purchase the constant and variable capital, and the surplus value now exists in the form of a hoard of gold rather than a quantity of commodities to be consumed by capitalists. All of the individual acts of hoarding appear as obstacles to circulation, but, in fact, the opposite is true.

"But it must be borne in mind that hoarding takes place in the simple circulation of commodities long before this is based on capitalist commodity production. The quantity of money existing in society is always greater than the part of it in actual circulation, although this swells or subsides according to circumstances. We find here again the same hoards, and the same formation of hoards, but now as an element immanent in the capitalist process of production.

One can understand the pleasure experienced when all these potential capitals within the credit system, by their concentration in the hands of banks, etc., become disposable, "loanable capital," money-capital, which indeed is no longer passive and music of the future, but active capital growing rank." (p 497)

We are still concerned here only with the situation as regards accumulation in **Department I**. So, here, capitalist A is selling constant capital to some other businesses in **Department I**. That is they are selling means of production for the purpose of producing means of production, e.g. a coal producer selling coal to a steel producer. So, if A is a coal producer and their capital is made up $c\ 400 + v\ 100 + s\ 100$, then one sixth of their output is equal to their surplus value. If their output is equal to 6000 tonnes, 1000 tonnes is equal to their surplus product.

We have seen the significance of this previously in *Volume I*, in explaining how it is possible for this expanded reproduction to occur (*Capital Volume I, Chapter 24*). That is the surplus production of each individual capital constitutes an aliquot part of the aggregate social surplus product. One capital is able to expand its purchases of physical elements of its capital precisely because other capitals have themselves increased their output of those commodities, which in turn form their surplus production.

This is obvious and tautologically true if we think about it in terms of Robinson Crusoe. He reproduces his means of production and consumption and is left with a surplus product. How can he then invest this surplus product, e.g. a quantity of seeds, additional livestock etc.? The question answers itself. Whatever his physical surplus product, it is thereby

available as additional means of production for next year. Even surplus food for his own consumption means the potential to devote less time procuring it next year, and thereby additional available social labour-time for alternative activities.

Similarly, the steel producer is able to increase their output and buy more coal, because the coal producer has also produced a surplus product of coal that is itself available to meet the additional needs of the steel producer.

“It must be noted at this point first and foremost that although withdrawing money to the amount of his surplus-value from circulation and hoarding it, A on the other hand throws commodities into it without withdrawing other commodities in return. The capitalists B, B', B'', etc., are thereby enabled to throw money into circulation and withdraw only commodities from it. In the present case these commodities, according to their bodily form and their destination, enter into the constant capital of B, B', etc., as fixed or circulating element. We shall hear more about this anon when we deal with the buyer of the surplus-product, with B, B', etc.” (p 497)

Suppose, here we think about our coal producer. They sell coal to be able to obtain the money to once again buy means of production and labour-power. Suppose they used the surplus product represented by 1000 tonnes for their own personal consumption. But, then there would be no surplus available for the steel producers to increase their consumption of coal to increase their own output.

The coal producer sells his surplus coal production to the steel producer and hoards the money they receive. The steel producer takes money from their hoard and buys the surplus coal, thereby increasing their capital and output. The former throws commodities into the market without taking commodities of the same value out. The latter takes commodities out of the market without throwing commodities of the same value in. The former takes money out of the market, the latter throws money into it.

This fact, that there must be a balance within the economy, that the value of commodities thrown into circulation must equal the value of the commodities taken out of it, that the money thrown in must equal the money taken out, does not mean that the economy has to remain static, or in a condition of simple reproduction, though simple reproduction, as Marx stated earlier, is always a fundamental basis for expanded reproduction. The balance is maintained if production is expanded and more commodities and money are thrown into circulation, provided that more commodities and money are also taken out. And a condition of expanded reproduction is as much that more commodities are taken out of circulation – to fulfil the function of means of production, to become means of consumption for an increased workforce etc. - as it is that more commodities are thrown into circulation.

“So far as the balance is restored by the fact that the buyer acts later on as a seller to the same amount of value, and vice versa, the money returns to the side that advanced it on purchasing, and which sold before it bought again. But the actual balance, so far as the exchange of commodities itself, the exchange of the various portions of the annual product is concerned, demands that the values of the commodities exchanged for one another be equal.” (p 498)

This, of course, does not mean as *Say's Law* suggests that in order to achieve this balance, every sale must be followed by a purchase. The whole essence of capitalism is a series of one sided trades, whereby at one time a seller is not a buyer, and a buyer is not a seller. It is only in the aggregate that this balance must exist. But, of course, in reality, that balance never does exist perfectly. Demand and supply only every balance accidentally; there is always a misallocation of capital so that there is overproduction here, and under

production there. Its in this sense that capitalism is a system in permanent crisis, but there is a marked difference between these permanent, but partial crises, which are a part of the dynamic nature of capital, and the means by which capital is perpetually being reallocated, and the periodic, generalised crises of capitalism.

“But inasmuch as only one-sided exchanges are made, a number of mere purchases on the one hand, a number of mere sales on the other – and we have seen that the normal exchange of the annual product on the basis of capitalism necessitates such one-sided metamorphoses – the balance can be maintained only on the assumption that in amount the value of the one-sided purchases and that of the one-sided sales tally. The fact that the production of commodities is the general form of capitalist production implies the role which money is playing in it not only as a medium of circulation, but also as money-capital, and engenders certain conditions of normal exchange peculiar to this mode of production and therefore of the normal course of reproduction, whether it be on a simple or on an extended scale – conditions which change into so many conditions of abnormal movement, into so many possibilities of crises, since a balance is itself an accident owing to the spontaneous nature of this production.” (p 498-9)

In the exchange between I(v) and II(c) there is an exchange of the same amount of value, but not of their respective commodities.

“II c sells its commodities to working-class I. The latter confronts it one-sidedly, as a buyer of commodities, and it confronts that class one-sidedly as a seller of commodities. With the money proceeds so obtained II c confronts aggregate capitalist I one-sidedly as a buyer of commodities, and aggregate capitalist I confronts it one-sidedly as a seller of commodities up to the amount of I v. It is only by means of this sale of commodities that I finally reproduces its variable capital in the form of money-capital. If capital I faces that of II one-sidedly as a seller of commodities to the amount of I v, it faces working-class I as a buyer of commodities purchasing their labour-power. And if working-class I faces capitalist II one-sidedly as a buyer of commodities (namely, as a buyer of means of subsistence), it faces capitalist I one-sidedly as a seller of commodities, namely, as a seller of its labour-power.” (p 499)

All of these one sided exchanges are required for the social capital to be reproduced, for **Department I** workers and capitalists to obtain the consumer goods they need, to live and so that labour-power can be reproduced, and equally that **Department II** can obtain the constant capital it requires to continue its own production. All of these one sided trades involve separate circuits of capital, money and commodities that intertwine.

“This process is so complicated that it offers ever so many occasions for running abnormally.” (p 500)

2. The Additional Constant Capital

The basic difference between simple reproduction and extended reproduction is not the production of a surplus – which exists in both – but in how this surplus is utilised. Under simple reproduction, the surplus, c-m, becomes merely revenue that functions to cover unproductive consumption, whilst M itself continues to buy productive-capital. Under extended reproduction, a portion of m itself is accumulated.

“The difference is here only in the form of the surplus-labour performed, in the concrete nature of its particular useful character. It has been expended in means of production for I c instead of II c, in means of production of means of production instead of means of production of articles of consumption... In order that the transition from simple to extended

reproduction may take place, production in department I must be in a position to fabricate fewer elements of constant capital for II and so many the more for I. This transition, which does not always take place without difficulties, is facilitated by the fact that some of the products of I may serve as means of production in either department.” (p 500-1)

So, within the terms of the current example, Capitalist A does not themselves have to have gone beyond simple reproduction for extended reproduction to occur within society. All that needs to change is that their surplus product is used for purposes of creating additional means of production as opposed to consumption. So, for example, 4,000 tonnes of coal might in any case have been used for steel production, with 2,000 tonnes going for domestic fuel. If now this other 2,000 tonnes goes instead to steel production, it will be the basis for increased production of steel, and thereby an increase in the means of production themselves.

*“In the case under consideration, this surplus-product consists from the outset of means of production of means of production. It is only when it reaches the hands of B, B', B", etc. (I) that this surplus-product functions as additional constant capital. But it is this **virtualiter** even before it is sold, even in the hands of the accumulators of hoards, A, A', A" (I).” (p 500)*

Under simple reproduction the capitalists used their surplus value to buy commodities for their own consumption. But, in order to realise this surplus value in these commodities, they had to themselves throw money into circulation equal to that surplus value. At the end of the circuit, that additional money they had thrown in came back to them, ready to be thrown in to realise this surplus value once more. The key to understanding the expanded reproduction is their ability to realise this surplus value without throwing money into circulation to do so. They threw money into circulation to realise their surplus value in other commodities. But, as Marx demonstrated with the example whereby all capitals exchange their commodities with a gold producer, it is logically possible for all capital to simultaneously hold that surplus value in the form not of commodities to be consumed, but in the form of a money hoard.

That money hoard becomes potential money-capital. For any individual capital it becomes possible to exchange its money hoard not for articles of consumption, but for additional articles of production. It only requires that the society devote a greater proportion of available social labour-time to the latter rather than the former.

To put this in terms of our example, the coal producer's capital is $c\ 400 + v\ 100 + s\ 100 = 600$. They spend their £100 surplus value to buy food, clothing etc. In order to achieve this, they must throw £100 of money into circulation themselves, which means that other capitalists have the money to buy the coal, and thereby also realise the £100 surplus value in the coal. But, if the coal producer instead of buying clothes and so on decides to hoard the surplus value, they have no need to throw this additional money into circulation to realise this surplus value. In essence, they simply exchange the coal with the gold producer. From that gold, they cover the £400 to replace their constant capital, and the £100 to replace their variable capital, so that they can continue producing at the same level. But, they still now have £100 in gold, as a money hoard.

We have now gone from a situation under simple reproduction where the surplus value of one capital is realised in the surplus production of other capitals, as a result of each capitalist throwing into circulation the monetary equivalent of their surplus value, to one in which the surplus value instead is realised in a money hoard. In the former, the capitalists were sellers to become buyers, as well as buyers to become sellers, but in the latter they are sellers without being buyers. It is then a simple logical step from there to understand

this process in terms of the capitalists once again also becoming buyers, but this time buyers of additional productive-capital, rather than buyers of consumer goods.

“It follows, then, that, considering the matter merely from the angle of volume of values, the material substratum of extended reproduction is produced within simple reproduction. It is simply surplus-labour of working-class I expended directly in the production of means of production, in the creation of virtual additional capital I. The formation of virtual additional money-capital on the part of A, A' and A" (1) – by the successive sale of their surplus-product which was formed without any capitalist expenditure of money – is therefore simply the money-form of additionally produced means of production 1.” (p 501)

Our coal producer continues to throw his product into circulation, withdrawing gold/money from it, without throwing that money back into circulation. They accumulate a hoard of money that is potential money-capital. At a point where this potential money-capital is sufficiently large to become actual capital, the coal producer can then expand their capital, for example, by opening an additional mine. This process is essentially no different in this respect to any new capital coming into existence. The only requirement here is that the new capital should find in existence the means of production and labour-power required to start production.

“Consequently production of virtual additional capital expresses in our case (we shall see that it may also be formed in a quite different way) nothing but a phenomenon of the process of production itself, production, in a particular form, of elements of productive capital.

The production of additional virtual money-capital on a large scale, at numerous points of the periphery of circulation, is therefore but a result and expression of multifarious production of virtually additional productive capital, whose rise does not itself require additional expenditure of money on the part of the industrial capitalist.” (p 501)

Repeated one sided sales without purchases swells this money hoard, and thereby creates the potential for a new large productive-capital, just as the process of primary accumulation created the potential for the beginning of capitalist production. But, as other forms of money are introduced – notes, coins, credit, bank deposits – besides gold, there is no need for this money hoard to be in the form of gold.

“Except in the case where the buyer is a gold producer, this hoarding does not in any way imply additional wealth in precious metals, but only a change in the function of money previously circulating. A while ago it functioned as a medium of circulation, now it functions as a hoard, as virtually new money-capital in the process of formation. Thus the formation of additional money-capital and the quantity of the precious metals existing in a country are not in any causal relation to each other.” (p 501)

Moreover, precisely because it is the physical surplus product that is at the root of this potential for expansion, the more developed the economy, the larger the existing stock of productive capacity, the higher the level of productivity, the greater the potential for such expansion *“... the greater therefore the quantity of the surplus-product both as to its value and as to the quantity of use-values in which it is represented – so much the greater is*

- 1. the virtually additional productive capital in the form of surplus-product in the hands of A, A', A", etc., and*
- 2. the quantity of this surplus-product transformed into money, and hence that of the virtually additional money-capital in the hands of A, A', A". The fact that Fullarton for instance does not want to hear of over-production in the ordinary sense but only of the*

over-production of capital, meaning money-capital, again shows how extremely little of the mechanism of their own system even the best bourgeois economists understand.”
(p 502)

Once again, we get an explanation of what Marx means by overproduction here. The accumulation of increasing money hoards, as rising quantities of surplus value are withdrawn, do not constitute overproduction of capital for Marx, though it is only this kind of overproduction, rather than the overproduction of commodities, that the bourgeois economists were prepared to admit. On the contrary, for Marx an overproduction of money-capital is something of a contradiction in terms. Money-capital is itself ephemeral. It only exists momentarily on its transformation into becoming productive-capital. Money-capital that is not immediately in the process of becoming productive-capital is not money-capital at all, but only a money hoard. It cannot, therefore, be over produced or over accumulated capital.

Capital can only be overproduced or over accumulated if it is in the form of productive-capital or commodity-capital. Commodity-capital, as Marx described earlier, is over produced where large stocks of commodities exist in the market, which cannot be sold at prices that reproduce the capital used to produce them. Productive-capital is over accumulated where it cannot employ additional labour-power that can produce absolute or relative surplus value. The former is then a problem in being able to realise produced surplus value, whereas the latter is a problem in being able to produce surplus value in the first place.

The former problem may be a symptom of disproportion. Either the wrong things may have been produced, or else have been produced in the wrong proportions to meet the requirements of demand. It may be a problem that arises from the contradictory nature of demand that arises from the nature of distribution that results from a society divided into classes of landlords, capitalists and workers. It may also be a symptom of the system's own success confined within its limits. In other words, if capital accumulates rapidly, and revenues rise, the ability of each of the above classes to satisfy their demands for the existing ranges of commodities is increased. What orthodox economics calls the marginal propensity to consume, may then fall, at least for those existing ranges of commodities. As Marx points out, when there is full employment, and high wages, workers may also begin to consume some of those luxury commodities that previously were only part of the consumption of the rich. In those conditions, although it becomes possible to produce commodities at an ever faster pace, consumers may only be persuaded to buy increasing quantities of them, if the prices are reduced by ever larger amounts.

The problem of producing the surplus value, is related to such a condition, because it is during such periods of boom that wages rise, squeezing surplus value, but also during such periods, the demand for materials will rise sharply, which might cause sharp spikes in material prices, which cannot be passed on into final prices, because of the problem described above of realising produced surplus value. Moreover, during such periods of sharply rising production, due to rising productivity, the rate of turnover of capital rises, so that even as the annual rate of profit rises, the profit margin falls, so that the potential for market prices to drop below cost prices rises sharply, so that losses arise. As Marx points out, these crises of overproduction, are therefore, the consequence of high and rising profits, and periods of prosperity engendering high levels of consumption.

However,

“Whereas the surplus-product, directly produced and appropriated by the capitalists A, A', A" (I), is the real basis of the accumulation of capital, i.e., of extended reproduction,

although it does not actually function in this capacity until it reaches the hands of B, B', B'', etc. (I), it is on the contrary absolutely unproductive in its chrysalis stage of money – as a hoard and virtual money-capital in process of gradual formation – runs parallel with the process of production in this form, but lies outside of it. It is a dead weight of capitalist production. The eagerness to utilise this surplus-value accumulating as virtual money-capital for the purpose of deriving profits or revenue from it finds its object accomplished in the credit system and "papers." Money-capital thereby gains in another form an enormous influence on the course and the stupendous development of the capitalist system of production.” (p 502)

The view that economic growth is easier, or can be more rapid where there is a lack of capital, or that capital has to be physically destroyed to bring about a more rapid growth is also demolished here by Marx.

“The surplus-product converted into virtual money-capital will grow so much more in volume, the greater was the total amount of already functioning capital whose functioning brought it into being.” (p 502)

Marx makes a similar point in *Volume III of Capital*, where he writes that, at a certain point, a large capital grows faster with a low rate of profit than a small capital with a high rate of profit.

Of course, were it true that economies with small capitals grow faster, then places like Upper Volta would have enjoyed stellar performance. Economies with larger existing amounts of productive capacity not only generate larger volumes of surplus value, of potential money-capital etc., but also, because of that, this potential capital is more easily converted into productive-capital. Small money hoards may have to be accumulated for long periods before they reach the minimum level where they can be actually converted into productive-capital. But, a large money hoard can more easily be used to be transformed into a new machine, new factory and so on, or alternatively can be effectively separated from an existing capital to begin some new venture.

For example, large amounts of surplus value produced by *Virgin* from one type of activity, accumulated as a money hoard, becomes available to commence a new venture in some other industry. A small, back street business can never generate those volumes of surplus value, to accumulate money-capital, to engage in such activity. At a macro level, an economy like the US can utilise existing huge money hoards to develop whole new industries, e.g. space technology that a small economy cannot achieve. That is why relatively small economies like the UK, have to join larger federations, such as the EU, or face economic catastrophe.

Capitalist A may continue to produce at the same level, and on the same basis they have done previously, under simple reproduction. It is only when this surplus product appears in the hands of the buyer, B, who uses it to increase the size of their constant capital that the process of expanded reproduction begins.

“... it should be noted here that a large portion of the surplus-product (virtually additional constant capital), although produced by A, A', A" (I) in a given year, may not function as industrial capital in the hands of B, B', B" (I) until the following year or still later.” (p 503)

For B to buy this additional constant capital from A, they must advance money-capital for it, and the question then arises where this money-capital comes from. But, in reality, this question is no different than the question raised under simple reproduction of where the money comes from to realise the surplus value for unproductive consumption. The only

difference here is the nature of the commodities purchased, and of the money paid for them. Under simple reproduction, the commodities purchased are for consumption and the money paid for them is revenue. Under extended reproduction, the commodities bought are for productive consumption, and the money advanced for them is money-capital.

In the former instance, the value of the commodities purchased is consumed along with their use value, and disappears. In the latter instance, the use value is consumed in the production process of some new commodity, and the value is transferred to that new commodity. In the former case, the money-revenue is spent and disappears into circulation. It returns to the capitalist not because of this act of spending, but because of his subsequent act of throwing his surplus product into circulation, and receiving back from circulation, the revenue he had thrown in. In the latter case, the money-capital is advanced to buy the commodities. It returns as the money-form of the commodity-capital it has helped to produce. This is separate from the surplus value incorporated into that commodity-capital, as a result of the production process, and which is also realised when that commodity-capital is sold.

Whether the money is advanced as capital or spent as revenue, it can arise in circulation from one of two sources. Either B throws it into circulation from their own money hoard,, or else A has previously thrown it into circulation from their money hoard, to purchase B's surplus product.

Once we move from an assumption of exchanges mediated by money as coin, the question resolves itself merely into a matter of the differences of balances of payments, i.e. B buys from A, and A buys from B for the same amount. If both raise bills of exchange, or pay by cheque, or electronic transfers, the two cancel out. Today, A would invoice B, and B would invoice A. In reality, of course, the series of exchanges would be far more complex, with A selling to B, B to D, E and F, D to A,G and X and so on. But, the total of payments are still netted off to balances, and it is only the balances which require actual payment to occur.

At this point, of trying to understand the underlying relations of social reproduction, introducing credit relations only acts to obscure rather than clarify. There are also other reasons to continue to focus on the role of actual money. Marx equates simple reproduction with the period of commodity production and exchange prior to industrial capitalism, and extended reproduction with the latter. In relation to the role of money this has the consequence that more is required.

“... first, because under capitalist production all the products (with the exception of newly produced precious metals and the few products consumed by the producer himself) are created as commodities and must therefore pass through the pupation stage of money; secondly, because on a capitalist basis the quantity of the commodity-capital and the magnitude of its value is not only absolutely greater but also grows with incomparably greater rapidity; thirdly, because an ever expanding variable capital must always be converted into money-capital; fourthly, because the formation of new money-capitals keeps pace with the extension of production, so that the material for corresponding hoard formation must be available.

This is generally true of the first phase of capitalist production, in which even the credit system is mostly accompanied by metallic circulation, and it applies to the most developed phase of the credit system as well, to the extent that metallic circulation remains its basis.”
(p 504)

At the same time, the more money required for circulation, the more pronounced the effect can be of shortages or abundances of the money-commodity, e.g. as happened with the discoveries of gold in California, Australia, and Alaska. This is true of the situation in Greece in recent years. If Greece converted all of its currency into electronic transfers based on Euro denominated prices, it could remove the need for physical Euro notes and coins, and, therefore, its dependence on the ECB for currency. The decision to measure values in Euros rather than Drachma, is essentially no different than a decision to measure distances in metres rather than yards. The money in this respect, only acts as unit of account. It could continue to undertake transactions denominated in Euros, but with all of its currency requirements provided under its own internal control, by the simple procedure of the Greek central bank creating new electronic deposits, i.e. quantitative easing.

“On the other hand the entire credit mechanism is continually occupied in reducing the actual metallic circulation to a relatively more and more decreasing minimum by means of sundry operations, methods, and technical devices. The artificiality of the entire machinery and the possibility of disturbing its normal course increase to the same extent.” (p 504)

Also, in a situation where we may have a series of A's who are sellers, but not buyers, and of B's who are buyers but not sellers, the B's may have to buy some of their additional constant capital from each other. Once again, this complex web of payments and receipts only requires the outstanding balances to be paid.

“But it is important first and foremost to assume here, as everywhere, metallic circulation in its simplest, most primitive form, because then the flux and reflux, the squaring of balances, in short all elements appearing under the credit system as consciously regulated processes present themselves as existing independently of the credit system, and the matter appears in primitive form instead of the later, reflected form.” (p 505)

3. The Additional Variable Capital

Marx deals with this issue rather summarily. In *Volume I*, it was shown that capital always finds the labour-power it requires. It can draw on the reserve army of labour; it can increase the length or intensity of the working day (even if it has to pay more in overtime or other enhanced payments to do so); it can introduce machines to raise labour productivity and so on.

What Marx does not deal with here, but perhaps should have done, is not the availability of this labour-power, but the availability of the additional means of subsistence implied by the employment of this labour-power. Workers paid wages for the first time, or paid more wages spend them buying means of subsistence, which means society has to devote more social labour-time to that production. Marx deals with this later in looking at accumulation in **Department II**.

The consequence can be seen from the huge increase in the global workforce, arising from the current long wave boom – around 500 million additional workers, according to the ILO, in the first decade of the 21st century – that has brought about a large increase in demand, globally, for food and consumer goods.

In addition to labour-power always being available, it was shown, in *Volume I*, that, within limits, production can be increased without additional factories, machines and other instruments of labour. But, nearly all such increases still require an increase in the circulating capital advanced for materials to be processed.

In fact, it can be seen that the limiting factor is not the availability of money, but the availability of capital, and of social labour-time. The latter is only a manifestation of the law of value as it affects every mode of production, and of how it affects capitalism in particular.

If we take the gold producer, for example, they have immediately, in their own surplus product, the means by which to employ additional labour-power and additional constant capital without the need to sell their output. A proportion of their gold surplus can immediately be paid as gold-money wages to additional workers, or for existing workers to work longer hours. It can also immediately be used to buy the extra constant capital required. But, the question is, will there be sufficient additional means of subsistence for workers to buy with those additional wages, will there be sufficient additional commodities available as constant capital? Marx does not ask or deal with these questions here.

A look at the experience of the current long wave boom, is that from its inception, around 1999, the increased demand for raw materials has caused global prices for them to rise sharply, as supply struggled to match demand. Similarly, the 30% increase in the size of the global working class, caused its demands for food and other consumer goods to rise. As food production struggled to rise to match increased demand, global food prices rose sharply. Other consumer goods prices did not rise, because some of the same forces that generated the new boom, i.e. significant rises in productivity, created by the introduction of new technology, sharply increased the volume of such use values brought to market, and likewise reduced their individual values. In all of the production of goods and services in Man's entire history, 25% occurred in the first decade of this century, such has been the massive increase in productive potential.

The answer to the questions above, and which Marx only gives later, in examining accumulation in **Department II**, is that extended production means that certainly more means of subsistence as well as production will become available on the basis so far outlined, and on the basis Marx turns to next in relation to **Department II**, but there is no guarantee that they will increase sufficiently to meet all the needs for expansion. It is quite likely then that a crisis of disproportion can develop, and certain that short-term imbalances will only be dealt with by fluctuations of market prices above and below the price of production.

II. Accumulation in Department II

In considering simple reproduction, the assumption was that all surplus value was spent as revenue. But, for capitalism this assumption cannot hold. The purpose of capitalist production is not consumption, but the production of surplus value. For surplus value to be produced on an extended scale, existing surplus value must be used to expand production, not to provide revenue. Because capitalists also need to eat, be clothed, sheltered etc. a proportion of surplus value will always need to be devoted to revenue to pay for these purchases, but another portion must be used to expand capital itself.

The problem we have in analysing accumulation in **Department II** is once more a problem of imbalance.

Assume once more, we have a number of **Department I** capitals that accumulate surplus value in money form, through selling but not buying. These can be denoted A, A', A". In **Department II**, we have a series of capitals denoted B, B', B" that buy without selling, this meaning, as previously, not that they do not sell at all, but that they buy more than they sell, and vice versa in the case of A.

Consequently, if A sells constant capital to B, equal to $A(v+s)$, B will have physically replaced their constant capital. We assume that A's workers will use their wages to buy consumer goods, and so B will receive back a portion of the capital they have advanced for constant capital, equal to this amount. However, if A capitalists, who have sold, now do not buy, but retain their surplus value in money form, B cannot now sell that portion of its output and so also cannot realise that portion of its advanced capital.

The converse of A's money hoard is a money deficit, and a surplus of commodity-capital, for B, that cannot be sold. There is an imbalance causing a disproportion between **Department I** and **II**.

“In other words, a portion of the commodities of B (II), and indeed prima facie a portion without the sale of which he cannot reconvert his constant capital entirely into its productive form, has become unsaleable. As far as this portion is concerned there is therefore an over-production, which, likewise as far as the same portion is concerned, clogs reproduction, even on the same scale.” (p 506)

The consequence, therefore, of this accumulation of surplus value, as a money hoard, is not only that extended reproduction does not occur, but even simple reproduction is frustrated.

“As the formation and sale of the surplus-product of A (I) are normal phenomena of simple reproduction, we have here even on the basis of simple reproduction the following interdependent phenomena: Formation of virtual additional money-capital in class I (hence under-consumption from the view-point of II); piling up of commodity-supplies in class II which cannot be reconverted into productive capital (hence relative over-production in II); surplus of money-capital in I and reproduction deficit in II.” (p 507)

We have here, the Keynesian notion of the “*paradox of thrift*”.

But, if A utilises their surplus product to expand their own production, an even worse situation could arise. If we have $A(v+s) = £2,000$, but A utilises half of their surplus product to expand their own output (e.g. a farmer who uses a proportion of their surplus production of wheat to use as additional seed to increase planting for next year's crop) then this also means that B cannot fulfil their own requirement to physically replace all of their constant capital. Previously, A would have sold £2,000 of wheat to B, to produce bread and other such products. B would then have sold £2,000 of these products to A – £1,000 to A's workers, £1,000 to A's capitalists. But, now A sells £1,500 of wheat to B, and uses £500 of wheat to expand their own production. A's workers spend their £1,000 of wages buying cakes and bread, and A capitalists spend their £500.

We need here to be aware of something referred to earlier, and central to the analysis of social reproduction. That is the point that Marx made concerning the *Tableau Economique*. It is that the starting point is not this year's production, but last year's. Neither A nor B start off here as a blank sheet. Both have capital at the start of the year in different forms – money-capital, productive-capital, and commodity-capital. Every business has money in the bank, work in progress, as well as a stock of materials and finished products.

When B buys constant capital from A, therefore, this is to replace the materials it uses in current production, and not the material it uses in that actual current production. That indeed is why, in order to reproduce its capital, the value of the commodities currently being produced is determined by the reproduction cost of that capital not by its historical cost.

Consequently, B already had constant capital, in the form of materials in stock, and work in progress, and it already had commodity-capital waiting to be sold. Because capitalism produces without knowing whether a market exists for its output, it is possible that B could have continued to produce on the same scale, i.e. £2,000 of output (indeed, Marx referred to exactly that situation previously, in relation to the supply of commodities to merchants that enabled production to continue, even though the commodities themselves were still in the market) but now finds it only has £1,500 of demand for that output. Moreover, there is only £1,500 of replacement constant capital physically available in the market to reproduce its capital.

“Instead of being converted into articles of consumption (and here in this section of the circulation between I and II the exchange is actually mutual, that is, there is a double change of position of the commodities, unlike the replacement of 1,000 II c by 1,000 I v effected by the labourers of I), it is made to serve as an additional means of production in I itself. It cannot perform this function simultaneously in I and II. The capitalist cannot spend the value of his surplus-product for articles of consumption and at the same time consume the surplus-product itself productively, i.e., incorporate it in his productive capital. Instead of 2,000 I(v+s), only 1,500, namely (1,000 v + 500 s) I, are therefore exchangeable for 2,000 II c ; 500 II c cannot be reconverted from the commodity-form into productive (constant) capital II. Hence there would be an over-production in II, exactly equal in volume to the expansion of production in I. This over-production in II might react to such an extent on I that even the reflux of the 1,000 spent by the labourers of I for articles of consumption of II might take place but partially, so that these 1,000 would not return to the hands of capitalists I in the form of variable money-capital. These capitalists would thus find themselves hampered even in reproduction on an unchanging scale, and this by the bare attempt to expand it.” (p 508)

These stocks of materials, as well as the stocks of commodity-capital, and the money hoards, in the hands of capitals, in both **Department I** and **II**, are a necessary condition of the continuity of capitalist production, a continuity which is inseparable from it.

Marx writes, describing this dialectal process,

“The consumption-fund, which is as yet in the hands of its sellers who are at the same time its producers, cannot fall one year to the point of zero in order to begin the next with zero, any more than such a thing can take place in the transition from today to tomorrow.” (p 509)

In other words, there can be no point in time. A point is infinitely small = 0. But, a zero in time is time that does not exist. There can be no single zero point where the day stops being today and becomes tomorrow, for the same reason.

“Since such supplies of commodities must constantly be built up anew, though varying in volume, our capitalist producers II must have a reserve money-capital, which enables them to continue their process of production although one portion of their productive capital is temporarily tied up in the shape of commodities. Our assumption is that they combine the whole business of trading with that of producing. Hence they must also have at their disposal the additional money-capital, which is in the hands of the merchants when the individual functions in the process of reproduction are separated and distributed among the various kinds of capitalists.” (p 509)

But, its not just **Department II** capitalists that have to have these stocks and hoards; **Department I** does too. Their existence does not change the nature of the problem as

cited of imbalances between the two, but it is a necessary element in understanding how that problem is resolved.

III. Schematic Presentation of Accumulation

Marx repeats the point made earlier that the essence of expanded reproduction is that a portion of surplus value is used for accumulation rather than revenue. In other words, there is a rearrangement of various components of total social capital. It is the reorganisation of these components that is the key to understanding how the extended reproduction is achieved without the problem of imbalance. To make this clear, and to show that it is not just a matter of how much capital is involved, Marx sets up another model where the total social capital is smaller than the £9,000 in the original scheme.

To show that it is the reorganisation of different components that is key, Marx provides two versions of this model with varying proportions – one where there is simple reproduction, the other where there is extended reproduction. Because I think it makes it easier to understand, I'm giving his second version (**Scheme B** – simple reproduction) first, and (**Scheme A** – extended reproduction) second.

Scheme B

Department I

$$c\ 4000 + v\ 875 + s\ 875 = 5750$$

Department II

$$c\ 1750 + v\ 376 + s\ 376 = 2502$$

Total £8,252

There is simple reproduction here because $I(v+s) = £1,750 = II(c)$. £4,000 of **Department I** output simply replaces **Department I** constant capital. The other £1,750 of output is sold to **Department II**, who in turn, sell £1,750 of consumer goods to **Department I** workers and capitalists.

The remaining £752 of **Department II** output is consumed by **Department II** workers and capitalists. Everything is consumed, and in the proportions that ensure things continue on the same scale.

In **Scheme A**, the amount of social production is still £8,252, but the elements are arranged differently showing extended reproduction.

Scheme A

Department I

$$c\ 4000 + v\ 1000 + s\ 1000 = 6000$$

Department II

$$c\ 1500 + v\ 376 + s\ 376 = 2252$$

Total = £8,252

There are several obvious differences here. Firstly, $I(v+s)$ no longer equals $II(c)$. The former is £2,000, the latter only £1,500. Secondly, the output of **Department I** is larger, whilst the output of **Department II** is smaller than in **Scheme B**. Given that a fundamental to expanded reproduction is that more means of production are required, this is to be expected. Even if **Department II** output rises, it will require more materials to effect that increase in production, thereby necessitating an increase in **Department I** production. A society can increase its consumption by cannibalising its existing capital stock, but this is only possible under certain conditions and for limited periods. For example, less resources can be given to carrying out repairs and replacing fixed capital, and the resources used for increased production of consumer goods, but sooner or later, more material has to be produced, broken machines result in fewer consumer goods being produced and so on, so resources then have to be switched from **Department II** to **Department I**.

It is the switch of resources from producing consumer goods to an increased production of producer goods that is the basis of expanded reproduction.

If we assume that capitalists in both **Department I** and **II** accumulate half of their surplus value rather than spend it, as revenue, we can see how this happens. We have previously seen how capitals can simultaneously realise their surplus value, as money hoards, rather than in consumer goods, i.e. the example Marx gave of all capitals exchanging their output with a gold producer. Marx further emphasises this point in supplementary remarks at the end of the chapter.

It is sufficient to say, at this point, that, just as all of the surplus value can be simultaneously realised as a money hoard, so can half of the surplus value, whilst the other half is realised through the purchase of consumer goods. The important point here is that the gold is not just money, but is also a commodity produced by **Department I**. Logically then, if the surplus value can be simultaneously realised as a money hoard, it can be realised in the form of other **Department I** commodities. It is, of course, necessary to bear in mind here the special nature of gold as money-commodity. It is one thing to realise surplus value in the form of a gold hoard, and quite a different thing to realise it as a hoard of lathes, wheat etc. Consequently, the problem of balances still has to be addressed.

We now have:

Department I

c 4000 + v 1000 + s 1000

Department II

c 1500 + v 376 + s 376

and out of the surplus value in both departments, 50% is to be accumulated, £500 in **Department I**, and £188 in **Department II**. It can be seen that, in both departments, the organic composition of capital is 4:1, i.e. there is £4 of constant capital to £1 of variable capital. If the £500 of surplus value in **Department I** is to be accumulated in the same proportion, that means £400 is invested in additional constant capital, and £100 in additional variable capital.

In short, what this means is that capitalists in **Department I** have spent less on consumer goods out of that surplus value, and instead advanced that money as capital to buy more machines, material etc. as well as to employ more workers to process it. Another way of thinking about it is a farmer who, rather than consuming all of the food he produces, sets

some of it aside to sow more seeds, increase his herd etc., as well as to feed the additional workers they need to work on the farm.

In **Department II**, £188 is to be accumulated. Marx makes a mathematical error here. He says a quarter of this - £47 – is to be allocated as wages. In fact, if the £188 is allocated 4:1, a fifth goes to variable capital, £37.60 or rounded to £38, and £150 allocated to constant capital.

So, **Department I's** output is £6,000, and of this it has to allocate £4,000 to replace its own constant capital. It also now adds another £400 to it. It also has to reproduce its workers, paying them £1,000 in wages. It raises this by selling £1,000 of constant capital to **Department II**. **Department I** workers return this money to **Department II**, by using their wages to buy £1,000 of consumer goods. But, **Department I** also increases its workforce, and pays out another £100 in wages, again raising this by selling constant capital to **Department II**. These additional workers spend their £100 of wages with **Department II**.

So, **Department I** now has,

c 4400 + v 1100,

and it has £500 of surplus value in cash, which its capitalists use to buy consumer goods from **Department II**. **Department II** has sold £500 of consumer goods to **Department I** capitalists, and £1,100 of consumer goods to **Department I** workers. This figure of £1,600 is equal to the amount of **Department I** goods available, out of its total output of £6,000, to exchange with **Department II**.

However, we have seen that **Department II** also wants to accumulate 50% of its surplus value, which means increasing its constant capital from £1,500 to £1,650, and its variable capital from £376 to £414. That means there is still an imbalance. **Department II** requires £1,650 of constant capital, but only £1,500 is available from **Department I**.

Marx comments,

“Therefore II must buy 140 (should be 150, AB,) Is for cash without recovering this money by a subsequent sale of its commodities to I. And this is a process which is continually repeating itself in every new annual production, so far as it is reproduction on an extended scale. Where in II is the source of the money for this?” (p 512)

That is possible, if as stated earlier, this 150 units of output exist as **Department I** commodity-capital. But, if not, and Marx does not specifically say they do so exist, the problem is not where the money is to come from to buy them, but where the **Department I** physical product itself is to come from! If we consider the output of **Department I** not in terms of £'s value, but in terms of homogeneous physical units, 4400 units have to be used to replace the **Department I** constant capital consumed; 1100 units have been exchanged with **Department II** for wage goods; the remaining 500 units have been exchanged with **Department II** for consumer goods for **Department I** capitalists.

So, whether **Department II** can raise additional money-capital to advance for a one sided trade with **Department I**, to buy the additional 50 units it requires – it requires 1650, and has obtained 1100 + 500 = 1600 – is then irrelevant, because unless **Department I** has at least 50 units still in stock, it has no more physical product to sell to them.

Rather than investigating where this additional product might come from, at this point, Marx investigates where **Department II** can find the money needed to buy it. Firstly, one source of this required money-capital is that **Department II** capitalists could depress the wages of

their workers below the value of labour-power. Now, we know that employers do this when the opportunity arises, and the necessary conditions exist, e.g. when there is a large reserve army of labour, when the opportunities for extracting relative surplus value are limited, and they have to fall back on absolute surplus value.

They utilise methods such as the Truck System of the 19th century whereby workers were paid in tokens, which could only be used in the company stores. The modern equivalent of the Truck System is the Welfare State, which allows the capitalist state to forcibly deduct payments from workers' wages in return for commodities such as healthcare, education and social insurance for old age, and unemployment. The capitalist state then exercises a monopoly of provision of these commodities to workers, thereby determining the quantity and quality of them to be provided to meet the needs of capital. It can then reduce the supply or quality of these commodities when required, whilst maintaining or increasing the deductions for them from the workers' wages.

Another method of achieving this is that referred to previously of "money-illusion". In other words, of maintaining nominal wages but reducing real wages via inflation.

"Every industrial country (for instance Britain and the U.S.A.) furnishes the most tangible proofs of the way in which this advantage may be exploited — by paying nominally the normal wages but grabbing, alias stealing, back part of them without an equivalent in commodities; by accomplishing the same thing either through the truck system or through a falsification of the medium of circulation (perhaps in a way too elusive for the law)." (p 513)

But, as seen previously, these methods for extracting additional surplus value are limited, and tend to be counter-productive for capital in the longer-term. For example, the capitalist state can reduce the quality of healthcare provided by the NHS, but this simply raises the real value of labour-power, as workers become poorer in quality, and less reliable. Moreover, the analysis has been based on the assumption that labour-power, as with all other commodities, is exchanged at its value, so this is an unsatisfactory solution to the problem faced within the theory.

There are two other possibilities. Either some capitalists in **Department II** rob other capitalists in **Department II**, which again, in practice, we know does occur, but infringes the requirement set out that commodities exchange at their value, or alternatively, **Department II** capitalists allocate a smaller proportion of their surplus value to the consumption of luxuries (which also means less resources are devoted to that production) and devote more to the purchase of labour-power (which also means a greater proportion of **Department II** resources are devoted to the production of wage goods.)

However, I think that the scenario presented by Marx is the wrong way around. It proceeds from accumulation in **Department I** rather than **Department II**. Why would **Department I** capital accumulate unless it saw the potential to meet increased demand from **Department II**? In essence, what this comes down to is what is meant by expanded reproduction in the particular case. On the one hand, if what is meant is simply the normal reproduction of the economy on an expanded scale, Marx's argument is correct. It is the argument he puts in opposition to Ricardo, in the discussion on rent in *Volume III*.

Ricardo argued that the driver for accumulation was the rate of profit. Farmers would only invest additional capital, if the rate of profit was rising, which required rising market prices, he argued. But, Marx sets out why this is wrong. The farmer, Marx says, assumes that demand for food etc. will rise each year, because, each year, the population grows, which means more mouths to feed. The farmer anticipates the growth of demand, and allocates

additional capital each year to increase supply to meet that demand. As a capitalist, the farmer is led to do that, because they know that if they do not, other farmers will, and they will lose market share. The farmer is led to accumulate capital on that basis, even if the rate of profit on the production is constant, or even falling.

“... the extension of cultivation to larger areas — aside from the case just mentioned, in which recourse must be had to soil inferior than that cultivated hitherto — to the various kinds of soil from A to D, thus, for instance, the cultivation of larger tracts of B and C does not by any means presuppose a previous rise in grain prices any more than the preceding annual expansion of cotton spinning, for instance, requires a constant rise in yarn prices. Although considerable rise or fall in market-prices affects the volume of production, regardless of it there is in agriculture (just as in all other capitalistically operated lines of production) nevertheless a continuous relative over-production, in itself identical with accumulation, even at those average prices whose level has neither a retarding nor exceptionally stimulating effect on production. Under other modes of production this relative overproduction is effected directly by the population increase, and in colonies by steady immigration. The demand increases constantly, and, in anticipation of this new capital is continually invested in new land, although this varies with the circumstances for different agricultural products. It is the formation of new capitals which in itself brings this about. But so far as the individual capitalist is concerned, he measures the volume of his production by that of his available capital, to the extent that he can still control it himself. His aim is to capture as big a portion as possible of the market. Should there be any over-production, he will not take the blame upon himself, but places it upon his competitors. The individual capitalist may expand his production by appropriating a larger aliquot share of the existing market or by expanding the market itself.”

(Capital III, Chapter 39)

But, that does not explain why such accumulation may be much greater, at some times, compared to others. I can see why **Department II** capitalists should seek to accumulate to satisfy consumer demand, and, indeed in the case of a farmer, they would be expanding their output to meet this additional consumer demand for food, but why would a machine maker, for instance, seek to increase supply unless they saw the potential for selling their additional machines. For **Department I** to take the lead in expanding seems to me to be a recipe for overproduction, leading to falling prices, and business failure.

Things do not normally proceed in that manner. Usually, **Department II** demand rises leading to first the run down of inventories, as **Department II** capitalists wait to see if the upturn is real. Then they place orders for additional material, utilising existing capacity and workers; then they take on additional workers, working shifts etc. Then they invest in additional production capacity, more machines, factories etc.

A look at what happens with materials is an illustration. The development of new mines etc. only occurs some time after demand for iron ore etc. has risen. In the meantime, existing mines are worked more intensively. That is why at the start of new periods of growth, prices for materials rise sharply, as the bringing on stream of new productive capacity seriously lags demand from **Department II** producers, who increase their consumption of materials to meet consumer demand.

During a period of boom, its quite possible accumulation in **Department I** could eventually get ahead of **Department II**, especially given long development time for new mines etc. The kind of investment currently being seen in things such as shale gas, as well as the opening up of vast new mines in Central Asia, Africa and Latin America are part of that

process. That does then lead to overproduction in **Department I**, or at least to stagnant or falling primary product prices, followed by long periods of under investment.

(**NB.** I wrote the above two paragraphs, originally, in 2014, prior to the sharp drops in the price of oil, copper, iron ore and other primary products. But, those falls do support the argument presented here. After 1999, the new long wave boom commenced. The demand for a whole range of new types of consumer goods based around the technology of the microchip, the Internet and mobile communications led to a sharp increase in trade, and employment. It led to sharp rises in the demand for food and other consumer goods, as large numbers of additional workers were created across the globe. This additional demand created a sharp rise in demand for **Department I** commodities that could not be immediately fulfilled from existing supply and production. Shortages of some commodities, particularly food, arose, and global prices of primary products rose sharply. That eventually provoked large scale accumulation in **Department I**, of the type described above, which in turn, as predicted, resulted in overproduction, and the sharp collapse of prices for those primary products, seen at the end of 2014, and start of 2015.)

The case of copper is illustrative.

“As a result of booming demand, operating profits in the copper industry have grown dramatically – operating margins up from 8% in 2001 to 38% in 2005. So why does copper supply not increase faster, as the industry clearly has plenty of cash to invest? To answer this question, we need to look at the basic economics behind investment decisions in the copper industry. Much of the added value in production of copper arises in the mining stage: only 25% of added value is in smelting / refining but the rest is in extraction and processing of copper ore. Thus the key supply constraint is the limited number of mines. When copper demand was lower, there was a surplus of production capacity and additional supply could be added simply by increasing throughput from existing mines. But supply cannot be increased indefinitely without additional copper production capacity, i.e. new mines. Despite the prevailing very high level of copper prices, copper supply from mines has not risen as fast as might be expected.

The economic theory is that when prices rise due to higher demand, supply will increase as it becomes possible to operate marginally economic mines at a profit due to the higher prices. The problem in practice is that copper is supplied from facilities that require huge investment in the mine and supporting infrastructure, and a major investment decision is required. A short-term rise in copper prices – even when sustained over several months – does not necessarily change industry investors’ perceptions of the long-term copper price. Mining companies will not invest in a project unless their expectations of long-term prices are at a level where the project becomes attractive.”

(International Copper Federation – Trends in Copper)

There seems no reason to me why, if **Department I** capitalists have produced additional means of production **Department II** capitalists will oblige them by buying them, unless they also experience rising demand for their products, which in itself is unlikely other things being equal, if **Department I** capitalists have reduced their consumption of consumer goods in order to invest more in production. Its far more likely that **Department II** capitalists will take advantage of the relative over production in **Department I**, to force down prices of inputs, increase their profits and realise them in a shift towards **II(b)** production.

If demand for necessities in **Department II** is rising so that **II(a)** prices and profits rise, then there is a reason why **Department II** capitalists not only shift resources to **II(a)** from **II(b)**,

but why they would also accumulate, but without that impetus, its hard to see why they would do so. I'll come back to this later.

"We know that the actual, and therefore also the additional, variable capital consists of labour-power. It is not capitalist I who buys from II a supply of necessities of life or accumulates them for the additional labour-power to be employed by him, as the slaveholder had to do. It is the labourers themselves who trade with II. But this does not prevent the articles of consumption of his additional labour-power from being viewed by the capitalist as only so many means of production and maintenance of his eventual additional labour-power, hence as the bodily form of his variable capital." (p 519)

Is this true? I don't think so. Other than where the capitalist operates some form of *Truck System*, I don't think any individual capitalist has any thought or consideration of where or how their workers obtain the commodities required for their subsistence. The capitalist pays the wages and leaves it to the workers to spend them as best they might to obtain those necessities. The capitalist assumes that others of their ilk will seize an opportunity to realise their profits by supplying the workers needs.

The only sense in which capital might have some concern in that regard is two-fold. Firstly, in the sense that Marx describes, i.e. of a concern that workers might use their wages on consumption that does not enhance or even reproduce their labour-power, i.e. a concern for temperance, and secondly, the other side of that coin, that workers do spend their wages on those commodities necessary to reproduce and enhance their labour-power. This tends to be a consideration at the level of "*capital in general*", rather than a concern by any individual capital. So, for example, Marx says,

*"By the by. The capitalist, as well as his press, is often dissatisfied with the way in which the labour-power spends its money and with the commodities II in which it realises this money. On such occasions he philosophises, babbles of culture, and dabbles in philanthropical talk, for instance after the manner of Mr. Drummond, the Secretary of the British Embassy in Washington. According to him, **The Nation** (a journal) carried last October 1879, an interesting article, which contained among other things the following passages:*

*"The working-people have not kept up in culture with the growth of invention, and they have had things showered on them which they do not know how to use, and thus make no market for." [Every capitalist naturally wants the labourer to buy his commodities.] "There is no reason why the working man should not desire as many comforts as the minister, lawyer, and doctor, who is earning the same amount as himself." [This class of lawyers, ministers and doctors have indeed to be satisfied with the mere desire of many comforts!] "He does not do so, however. The problem remains, how to raise him as a consumer by rational and healthful processes, not an easy one, as his ambition does not go beyond a diminution of his hours of labour, the demagogues rather inciting him to this than to raising his condition by the improvement of his mental and moral powers." (**Reports of H. M.'s Secretaries of Embassy and Legation on the Manufactures, Commerce, etc., of the Countries in which they reside.** London, 1879, p. 404.)" (p 519-20)*

This is one reason that capital establishes the welfare state. It thereby ensures that a necessary minimum portion of workers wages are set aside to ensure that workers are reproduced to a minimum standard to meet its increasing requirement for an educated and skilled labour-power, and that those workers are maintained, so as to be able to work consistently, and for a long period of years, without losses due to sickness. In this respect, capital treats its labour-power like any of its other machines, requiring it to be of the highest

quality and the greatest reliability. It develops the welfare state as the most efficient means of achieving that, on a mass scale, and under its direct control and regulation.

Marx then sets out how extended reproduction can occur under three different scenarios.

1. First Illustration

Department I

$$c\ 4000 + v\ 1000 + s\ 1000 = 6000$$

Department II

$$c\ 1500 + v\ 750 + s\ 750 = 3000$$

Total £9,000

Half of **Department I**(s) is accumulated = £500. Of this, on the basis of the organic composition of capital, £400 becomes additional constant capital, and £100 additional variable capital.

So, **Department I** now stands as

$$c\ 4400 + v\ 1100 = 5500$$

Its total output is £6,000, but now £4,400 of this goes just to replace and increase its own constant capital. That leaves it with £1,600 of output to exchange with **Department II**.

So, **Department I** workers buy £1,100 of consumer goods from **Department II**, whilst **Department I** capitalists buy £500 of consumer goods from **Department II**. With the £1,600 received from these sales, **Department II** buy £1,600 of constant capital to replace that it has used up.

But, **Department II** only had £1,500 of constant capital, so this assumes that it has to also accumulate so as to expand its constant capital, and its own output. But, in accordance with its organic composition of capital, if its constant capital rises by £100, its variable capital must rise by 50, i.e. it needs more labour-power to process this greater quantity of material.

So, **Department II** has increased its capital advanced by £150 – £100 for constant capital, and £50 for variable capital. It advances this capital from its surplus value. £150 of **Department II** commodities, previously consumed by its capitalists are now consumed by workers (£100 **Department I** - £50 **Department II**).

So, the situation now is:-

Department I

c 4400 + v 1100. Capitalists now have £500 to spend buying consumption goods.

Department II

c 1600 + v 800. Capitalists have £600 to spend.

So, if the capital was accumulated on this basis, with the previous 100% rate of surplus value, the larger amount of labour-power would now process the larger quantity of constant

capital resulting in a higher level of output. It is now.

Department I

$$c\ 4400 + v\ 1100 + s\ 1100 = 6600$$

Department II

$$c\ 1600 + v\ 800 + s\ 800 = 3200.$$

Total = £9,800.

Output in **Department I** has risen by $600/6000 = 10\%$, and in **Department II** by $200/3000 = 6.66\%$.

The process of accumulation then continues. Half of **Department I's** surplus value of £1,100 is accumulated. That is £550, allocated £440 to constant capital, and £110 for variable capital.

Now we have:

$$c\ 4840 + v\ 1210 (+ s\ 550 \text{ after } £550 \text{ has been accumulated}) = £6,600.$$

Now, $v+s$ (£1210 + £550 = £1760) becomes the new demand for **Department II** consumer goods. But, again **Department II** only has £1,600 of goods available to exchange with **Department I**, i.e. the proportion of its output equal to c . So, £160 of goods currently consumed by **Department II** capitalists must instead be sold to **Department I** in exchange for the additional constant capital.

So, **Department II** then has £1,760 of constant capital, but must then increase its variable capital to £880 (half of £1,760) in line with its organic composition of capital.

We will then have in the next cycle.

Department I

$$c\ 4840 + v\ 1210 + s\ 1210 = 7260$$

Department II

$$c\ 1760 + v\ 880 + s\ 880 = 3520$$

That gives a rise of $660/6600 = 10\%$ for **Department I**, and $320/3200 = 10\%$ for **Department II**.

“If things are to proceed normally, accumulation in II must take place more rapidly than in I, because otherwise the portion $I(v + s)$ which must be converted into commodities II will grow more rapidly than II c , for which alone it can be exchanged.” (p 516)

This was one problem in the USSR, where the plan continually gave priority to increasing accumulation in **Department I**.

Continuing on this basis we get after five years.

Department I

$$c\ 6442 + v\ 1610 + s\ 1610 = 9662$$

Department II

$$c\ 2342 + v\ 1172 + s\ 1172 = 4686$$

That represents an increase of $3662/6000 = 61\%$ for **Department I**, and $1686/3000 = 56\%$ for **Department II**. **Department I** capital has risen from $4000 + 1000 = \text{£}5000$ to $6442 + 1610 = 8052$. That is an increase of $3052/5000 = 61\%$. **Department II** capital has risen from $1500 + 750 = \text{£}2250$ to $2342 + 1172 = \text{£}3514 = 56\%$.

2. Second Illustration

Here the organic composition of capital is 5:1 in both Departments, reflecting a greater level of development.

Department I

$$c\ 5000 + v\ 1000 + s\ 1000 = 7000$$

Department II

$$c\ 1430 + v\ 285 + s\ 285 = 2000.$$

All of this output exists as commodity-capital, i.e. it has been produced, and is available to be exchanged.

Department I accumulates half its surplus value in the same proportion, so:-

$$c\ 5000 + (500 \times 5/6 = 416.66 \text{ rounded to } 417) + v\ 1000 + (500 \times 1/6 = 83.33 \text{ rounded to } 83), \text{ so}$$

$$c\ 5417 + v\ 1083.$$

Department I workers now buy £1,083 of consumer goods from **Department II**, whilst **Department I** capitalists buy £500 of consumer goods. In return, **Department II** buys an equivalent amount of constant capital from **Department I**, i.e. $I(v+s) = II(c)$ or £1,583. However, the proportion of **Department II** consumer goods currently available to be allocated to this exchange amounts to only £1,430, because currently £285 of **Department II** output is allocated to reproduce **Department II** labour-power, and £285 is allocated to meet the consumption needs of **Department II** capitalists.

The deficit can only be made up, if part of the allocation to **Department II** capitalists is used to exchange with **Department I**. That would in turn mean that **Department II** not only replaces its £1,430 of constant capital, but increases it to £1,583, to meet this higher level of demand. Consequently, £153 of **Department II** output currently destined for consumption by **Department II** capitalists goes to **Department I**, whilst **Department II** capitalists reduce their own unproductive consumption, by £153, and use this money as capital to advance for additional constant capital.

So, **Department II** constant capital rises to £1,583, but in order to maintain its own organic composition of capital, it also has to advance more variable capital, i.e. $1583/5 = 316$. That means **Department II** capitalists have to reduce their own unproductive consumption by a further $(316 - 285 = \text{£}31)$ So, **Department II**, now has:-

$$c\ 1583 + v\ 316. \text{ Department II capitalists have } (285 - [153 + 31 = 184] = 101) \text{ left over to spend on consumption goods, equal to the amount of consumer goods left to be bought.}$$

Department I capital has risen from (5000 + 1000) £6,000 to (5417 + 1083) 6500. That is an increase of $500/6000 = 8.33\%$.

Department II capital has risen from (1430 + 285) £1715 to (1583+316) £1899 = 10.7%.

If production continues on this basis.

Department I

$$c\ 5417 + v\ 1083 + s\ 1083 = 7583$$

Department II

$$c\ 1583 + v\ 316 + s\ 316 = 2215$$

The table below gives the result over five years. Numbers are rounded to the nearest whole number.

The result also shows that total output rises by 38.44%. The rise in **Department I** capital is 37.74%, whilst the rise in **Department II** capital is 52.59%.

Marx notes,

“It goes without saying that as soon as we assume accumulation, $I(v + s)$ is greater than Ic , not equal to Ic , as in simple reproduction. For in the first place, I incorporates a portion of its surplus-product in its own productive capital and converts five-sixths of it into constant capital, therefore cannot replace these five-sixths simultaneously by articles of consumption II.” (p 518-9)

If **Department I** capitalists use part of their surplus product, to increase their own constant capital, then clearly they have less product to exchange with **Department II**. That means that this demand for **Department II** consumer goods falls. There is a shift from production of consumer goods to producer goods. That is implicit, though Marx does not actually discuss it, in the fact that in his model here, where he first describes the situation in terms of simple reproduction, where he sets out “**Scheme A**”, constant capital for **Department II** is given as £2,000, but falls to £1,500 under expanded reproduction in *Illustration 1*, and £1,430 in *Illustration 2*.

As stated earlier, its not clear to me why, other than where there is overproduction, **Department I** would accumulate and expand production where demand in **Department II** was falling, as presented in the model. The only reason **Department II** output remains at £3,000 in Marx's *first illustration* is because having reduced the amount of constant capital from £2,000 to £1,500, he increases the amount of variable capital and surplus value from £500 to £750. That would mean that the organic composition of capital under simple reproduction would have been 4:1, but falls to 2:1 under expanded reproduction, which is the opposite of what would be expected, where accumulation occurs.

In fact, if we take the *second illustration*, and assume that there is no accumulation by **Department I** capitalists, we would have $I(v+s) = £2,000 =$ demand from **Department I** for **Department II** goods. If we look at the model, then, if this demand had to be met out of current production, **Department II** could not meet it. **Department II** production is $c\ 1430 + v\ 285 + s\ 285 = £2,000$. So, all of **Department II** production would go just to meet **Department I** demand. But, **Department II** also has to meet £570 of demand from **Department II** workers and capitalists. The consequence of **Department I** *not* accumulating then, is that **Department II** demand rises beyond what **Department II** can

meet from current production. That means that consumer goods prices rise, and so do **Department II** profits, thereby giving the necessary impetus for **Department II** capitalists to accumulate, and thereby increasing their demand for **Department I** goods, which then *does* provide an incentive for **Department I** to accumulate.

The argument against this is that, as Marx points out, for capital, in either department, to accumulate, the necessary means of production and labour-power must themselves be available to be bought. But, the assumption Marx makes here is that £7,000 of producer goods *did* exist as commodity-capital waiting to be bought by **Department II** capitalists, and similarly £2,000 of consumer goods *did* exist as commodity capital waiting to be bought by workers and capitalists from both departments.

Given that consumption of this commodity-capital does not occur all at once, but is spread out over the year, then if **Department I** and **II** workers and capitalists continued to buy consumer goods at the rate suggested by the model, that would mean that **Department II** inventories would necessarily be run down, as demand outstripped supply. That would be the driver for **Department II** capitalists to reduce their consumption spending, and increase accumulation, which would then cause the run down of **Department I** inventories to speed up, thereby giving the incentive to **Department I** capitalists to accumulate.

In fact, on the basis of the model Marx presents here, the logical primary driver for accumulation must be **Department II**, and not **Department I**, as he suggests, because on these figures **Department II** is clearly under-capitalised to meet society's demand for consumer goods. With no accumulation in **Department I**, **Department II** is £570 short of the supply it needs to meet demand. It needs to raise its supply by more than 25%. In fact, on the basis of the higher prices and profits in **Department II**, that would result from this, the tendency would be for capital to migrate from **Department I** to **Department II**, to take advantage of these higher profits.

I'd suggest the following scenario is more realistic on the basis of the situation Marx describes.

Department I

$$c\ 5000 + v\ 1000 + s\ 1000 = 7000$$

Department II

$$c\ 1430 + v\ 285 + s\ 285 = 2000$$

all of this output exists as commodity-capital, and so can be sold from stock. However, if we assume that it is only sold a bit at a time (as it would be), and is replaced by current production, we can for convenience assume that it is consumed say in tenths. However, as stated, on these figures, total demand for **Department II** goods is $I(v+s) = 2000 + II(v+s) = 570 = £2,570$, so **Department II** stocks are run down at a rate of £257 per month, whilst current production only adds £200 per month, making it apparent that demand exceeds supply.

That makes it apparent to **Department II** capitalists that they should increase accumulation. In fact, in reality, if we assume that **Department II** capitalists had £285 of money-revenue set aside for their annual consumption, and only spend it at a rate of £28.50 per month, they do not actually even have to reduce their current consumption at all, but only have to advance some of those money funds immediately as capital rather than revenue. On this basis, they increase their purchases of constant capital.

£2,000 of constant capital existed as commodity-capital, available to be exchanged with **Department II**. But, if we assume it is drawn down in tenths, then according to the model £143 is drawn down each month. If **Department II** capitalists increase their purchases of constant capital to £150 per month, that would mean in a year their constant capital would rise to £1,500. That still means that **Department I** supply equal to $2000/10 = £200$ per month, exceeds demand of £150 per month.

If we now have **Department II** constant capital equal to £1,500 then the variable capital must also rise to £300. Even, though **Department I** stocks of commodity-capital exceed current demand, the increase in demand from **Department II**, might still prompt **Department I** capital to increase its own accumulation. Certainly, if **Department II** capitalists continued to purchase consumer goods at the rate of £28.50 per month, whilst **Department II** workers now consume £30 per month rather than £28.50 per month, demand for **Department II** goods will continue to outstrip supply, whether **Department I** meets the increased demand for constant capital, from stocks, or by increasing its own production.

On an annualised basis, if the constant capital was £1,500 (150 per month x 10) and the variable capital was £300, and the surplus value was £300, **Department II** supply would rise to £2,100. but demand would be, £2,000 (**Department I** [v+s]) + £300 (**Department II** workers) + £285 (**Department II** capitalists) = £2,585. So, **Department II** stocks are run down now at a rate of £258.5 per month, but increased by only £210 per month. So, **Department II** still needs to increase its output by around 25%, even without any increased demand from **Department I**.

In fact, given this level of under capitalisation, and the prices and rate of profit implied, its quite likely that a considerable investment in additional capacity would be set in place, some of which might come from a reallocation of capital from **Department I**, where profit rates would be lower. That process may well involve, then, an over investment in **Department II**, before capital is again reallocated back to **Department I**.

But, it can be seen then how **Department II** accumulation can then proceed further to meet this shortage of supply, which then causes a draw down of **Department I** stocks, leading to an increase in accumulation in **Department I**. Because **Department I** production of means of production, in itself requires a considerable investment in **Department I** constant capital, that means that total production of means of production has to increase.

On that basis we can arrive back at the situation described by Marx, but via a different route in which **Department II** acts as the primary driver of accumulation. So, if **Department II** increases its purchases of constant capital to £1,583, that implies a variable capital of £317. If **Department I** capitalists utilise a larger portion of their surplus value then to buy productive capital to respond to this higher level of demand from **Department II**, **Department I** constant capital rises to £5,417, whilst its variable capital rises to £1,083. **Department II** now supplies £1,083 to **Department I** workers, and £500 to **Department I** capitalists, matching their demand. **Department II** provides £317 to **Department II** workers, and £100 to **Department II** capitalists.

It should be born in mind that, as this process unfolds, over a year (or longer), it is the stocks of existing commodity-capital that are being run down, and replenished as a consequence of current production. On the basis of expanded reproduction, the stocks are not just replenished, but enhanced at the end of the year. That does not mean that the stock of commodity-capital continues to grow proportionately as the size of the capital grows. The size of the stock of commodity-capital will tend to grow in absolute terms, because a larger portion of it will be stored by wholesalers and retailers, who themselves

become larger, but as Marx describes earlier, capital is held in stocks, reserves and money hoards at multiple points throughout the economy. So, at one point the size of the commodity-capital may rise, and at another the size of money hoards may rise, or the size of the productive supply, i.e. the amount of material held waiting to be processed, may rise. Most significantly, the size of the productive-capital itself will continue to rise.

The explanation for Marx's argument in relation to this expanded reproduction arising in **Department I**, rather than **Department II**, I believe comes down to whether we are talking about expanded reproduction as an inextricable part of social reproduction, under capitalism, or whether we are talking about periods of higher or lower growth. In other words, if we are talking about what might be called "*normal*" conditions, then this expanded reproduction is, as Marx describes predicated on an expansion of **Department I**, as the primary mover.

Under such conditions, there is, for example, a steady rise in population, and this, of itself, leads to a rise in demand for all commodities. Firms start from the assumption of such year on year rises in demand for their products, and plan to increase their production to meet that higher demand accordingly. The producers of **Department I** goods, assume that the demand for their output, will then rise each year, and so plan to increase their output, by accumulating capital, accordingly.

However, there are periods where accumulation may be more or less than this natural process of expanded reproduction. Some periods will be marked by much faster rises in demand for consumer goods, which will cause **Department II** producers to run down inventories as described, and to increase their demand for producer goods, so that the drive for this higher level of accumulation comes from **Department II**. At other times, there will be difficulty selling consumer goods, inventories will rise, the demand for producer goods will fall.

3. Replacement of Ic in Accumulation

In *Illustration 1*) $I(v+s/2) = II(c) = \text{£}1,500$. In *Illustration 2*) $I(v+s/2)$ is greater than $II(c)$. The difference is made up by a reallocation of the supply of consumer goods previously allocated to **Department II** capitalists, and a consequent reallocation of their funds from consumption spending to capital accumulation.

"Here the replacement for II is not a simple reproduction of its constant capital, but accumulation, an augmentation of its constant capital by that portion of its surplus-product which it exchanges for means of production of I . This augmentation implies at the same time a corresponding addition to variable capital II out of its own surplus-product." (p 524)

In 3) " $I(v + \frac{1}{2}s)$ is smaller than Ic . In this case II does not fully reproduce its constant capital by means of exchange and must make good the deficit by purchase from I . But this does not entail any further accumulation of variable capital II , since its constant capital is fully reproduced only by this operation. On the other hand that part of capitalists I who accumulate only additional money-capital, have already accomplished a portion of this accumulation by this transaction." (p 524)

In other words, demand from **Department I** workers and capitalists is insufficient to cover the consumption of constant capital in **Department II**. The implication being that the additional demand for consumer goods comes from within **Department II** itself. **Department II** makes up the difference by advancing additional money-capital, buying without selling, enabling **Department I** capitalists to sell without buying, and thereby to hoard the difference as potential money-capital.

“The premise of simple reproduction, that $I(v + s)$ is equal to IIc , is not only incompatible with capitalist production, although this does not exclude the possibility that in an industrial cycle of 10-11 years some year may show a smaller total production than the preceding year, so that not even simple reproduction takes place compared to the preceding year.” (p 524)

But, during a process of accumulation, $II(c)$ could become bigger than $I(v+s)$. In other words, the total output of **Department II**, having met the needs of its own workers and capitalists might have more production than can be exchanged with **Department I**.

“This would mean an over-production in II and could not be adjusted in any other way than by a great crash, in consequence of which some capital of II would get transferred to I.” (p 525)

Under capitalism, because expanded reproduction is inherent, $I(v+s)$ cannot equal $II(c)$.

“On the other hand, if $I(s/x)$ is taken as that portion of I_s which is spent by capitalists I as revenue, $I(v + s/x)$ may be equal to, larger, or smaller than, IIc . But $I(v + s/x)$ must always be smaller than $II(c + s)$ by as much as that portion of II_s which must be consumed under all circumstances by capitalist class II.” (p 525)

3. Replacement of IIc in Accumulation

“The original source of the money for II is $v + s$ of the gold industry I exchanged for a part of IIc . The $v + s$ of the producer of gold does not enter into II only to the extent that he accumulates surplus-value or converts it into means of production I, i.e., to the extent that he expands his production. On the other hand, since the accumulation of money on the part of the gold producer himself leads ultimately to reproduction on an extended scale, a portion of the surplus-value of gold production not spent as revenue passes as additional variable capital of the gold producer into II, promotes here the formation of new hoards or supplies new means with which to buy from I without selling to it direct. From the money derived from this $I(v + s)$ of the production of gold that portion of the gold must be deducted which certain branches of production II need as raw material, etc., in short as an element for the replacement of their constant capital.” (p 526)

In other words, a portion of gold production goes towards production of jewellery etc., and therefore does not become money. Of the rest, a proportion, equal to c , has to be exchanged with other **Department I** capitals to buy means of production to replace those used up. Only the gold paid directly to gold workers, v , and the gold used directly as revenue by gold capitalists, is available to act as money-revenue to buy consumer goods from **Department II**, and thereby becomes part of the money hoard of **Department II** capital, available for use as money-capital to advance for its expansion.

In fact, as Marx sets out in “A Contribution To The Critique of Political Economy” (Chapter 2), once central banks have control of money supply, and notes and coins circulate as money tokens, the central bank determines how much money is required to circulate commodities, and effect payments. It increases or reduces the supply of notes and coins accordingly. But, with fractional reserve banking, the commercial banks themselves create bank money in the form of deposits. Capitalists seeking to expand their capital by accumulating surplus value can simply obtain the money they require via an exchange of bank deposits.

As Marx points out, this only obscures the underlying relations, which are best understood in terms of money based on precious metals. The more concrete analysis of actual

relations, and the role of credit and bank finance is left to *Volume III*.

“An element for the preliminary formation of hoards — for the purpose of future extended reproduction — exists in the exchange between I and II: for I only if part of Is is sold one-sidedly, without a balancing purchase, to II and serves there as additional constant capital II; for II, when the same is the case on the part of I for additional variable capital; furthermore, if a part of the surplus-value spent by I as revenue is not covered by IIc, hence a part of IIs is bought with it and thus converted into money. If $I(v + s/x)$ is greater than IIc, then IIc need not for its simple reproduction replace in commodities from I what I consumed out of IIs. The question arises to what extent hoarding can take place within the sphere of exchange of capitalists II among themselves, an exchange which can consist only of a mutual exchange of IIs.” (p 526)

So, if **Department I** sells additional constant capital to **Department II**, but does not buy a corresponding amount of consumer goods, from **Department II**, the difference must exist as a money hoard in the hands of **Department I** capitalists. That could be the case, for example, where a new boom occurs, or there is a process of industrialisation occurring.

In such conditions, **Department II** capitalists as a mass, including new firms just established, will need to buy lots of fixed capital from **Department I**. They will require to buy all of their initial stocks of materials to be processed, and so on. The sum total of all these large purchases will be considerably more than the flow of funds back in the other direction, and necessarily so in the case of fixed capital that only gives up its value gradually. We have seen this many times. Whenever a new boom arises, **Department I** producers such as OPEC, miners, agricultural producers, steel producers etc. see their revenues rise rapidly ahead both of any capacity to increase investment, or unproductive consumption. So, large money hoards are built up, which today can be seen in the shape of sovereign wealth funds of many economies based heavily on **Department I** production.

Similarly, money hoards are built up in **Department II** if it one sidedly sells to **Department I**. For example, **Department I** may accumulate capital, and employ additional labour-power, which thereby causes an increase in demand for **Department II** consumer goods, i.e. more **Department I** workers means more wages are spent on consumer goods. **Department II** sells these goods, but does not buy additional constant capital of the same amount.

That could happen because the additional demand is met out of existing stocks; because **Department II** makes its fixed capital last longer; because it improves the efficiency of its use of fixed capital and/or material etc. For example, users of oil have improved the efficiency of its use tremendously, whether it is in petrochemicals, or as a fuel. So, now when GDP rises, the demand for oil rises by only a fraction of what it did 20-30 years ago.

Global oil consumption rose from 63 million barrels per day in 1980, to 85 million barrels per day in 2006. That is an increase of 35%. But, between 1980 and 2012, Global GDP increased from \$18.8 Trillion to \$71.8 Trillion (1990 dollars). That is an increase of 282%! Even allowing for the six years difference in periods that means that global GDP rose by around seven times the increase in oil consumption.

Similar means by which the demand for **Department I** goods may not rise proportionate to demand for **Department II** goods, include the use of alternative types of materials, or simply technological advancement. For example, demand for telephones has risen hugely, but much less material is required for the production of modern mobile phones than for the phones of 20-30 years ago.

*“The question arises to what extent hoarding can take place within the sphere of exchange of capitalists II among themselves, an exchange which can consist only of a mutual exchange of IIs. We know that direct accumulation takes place within II by the direct conversion of a portion of II s into variable capital (just as in I a portion of Is is directly converted into constant capital). In the various age categories of accumulation within the various lines of business of II, and for the individual capitalists in each line of business, the matter is explained **mutatis mutandis** in the same way as in I. Some are still in the stage of hoarding, and sell without buying; the others are on the point of actual expansion of reproduction, and buy without selling. The additional variable money-capital is, true enough, first invested in additional labour-power, but this buys means of subsistence from the hoarding owners of the additional articles of consumption entering into the consumption of the labourers. From these owners, **pro rata** to their hoard formation, the money does not return to its point of departure. They hoard it.” (p 526-7)*

In other words, just as was seen with **Department I**, some capitals are in the process of hoarding money. That can be because some of that hoard is the depreciation fund for fixed capital, or it can be a hoard of money capital not yet large enough to be productively invested.

On the other hand there are capitals that are replacing their fixed capital, and also those that have sufficient resources to advance as additional productive capital. The fact that some capitals are buying but not selling, whilst other are selling but not buying, enables money hoards to be developed, which are then available to be used to replace and extend fixed capital and productive-capital. That relation exists both within each department and between **Department I** and **II**.

The fact that capitalism is a system of continuous production – there is no zero of time, any more than capitals reduce any portion of their capital to zero before increasing it again – means that each individual capital has stores of money-capital, productive-capital, and commodity-capital. It is the existence of these stores that enables not only production to proceed smoothly and continuously, but also enables accumulation to take place.

One capital can, for example, increase its activity, and employ more workers, precisely because elsewhere, stocks of consumer goods exist to meet their subsistence needs, whilst this prompts an increase in **Department II** production, not just to replace the draw down in these inventories, but to respond to the increased demand.

One capital can increase its activity by expanding its constant capital, precisely because stocks of constant capital exist – even if for some of it, it is only the potential that exists, which is set in motion once an order is received. The existence of hoards of money-capital, stocks of productive-capital, and commodity-capital enable the initial increase to be met from stocks, and subsequently for the various capitals then to replace and add to these stocks themselves.

That is why capitalism never runs to a level of 100% capacity utilisation, and why the first stage of any economic boom is seen in a drawing down of inventories.

Marx has now, in *Volume I*, analysed the building blocks of capital, i.e. the commodity, and the general laws that determine its production and exchange. He has developed that analysis to show at the level of many capitals how the production and exchange of commodities necessarily results in the production of capital.

In *Volume II*, he has moved from an analysis of the production of capital at the level of many capitals, i.e. of the firm, to an analysis of the circulation of capital, first at the level of

many-capitals, and then at the level of capital in general. That meant an analysis at its most abstract level, of a mass social exchange of commodities and capital between **Department I** and **II**.

In doing so, he has shown how this mass social exchange can occur. But also in doing so, he has demonstrated the many different points of exchange both of commodities and of capital, where this can, and is likely to break down. It opens up the possibility of crises of a number of sorts – financial or monetary crises arising in, but not necessarily contained within, financial markets; crises of overproduction of commodities that then lie unsold in markets; and crises of over accumulation of capital whereby capital has been accumulated to such a degree, relative to the available supply of labour-power, that it cannot extract either additional absolute or relative surplus value, by further expansion.

In *Volume III*, Marx examines how these potential forms of crisis become actualised. His analysis is conducted now not at the level of abstraction of mass social exchanges, but at a more concrete level of the way capital in general is divided into *Money-capital*, *Productive-capital*, and *Merchant-Capital* as distinct branches.

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