

Proposal: Calculating the FIC in the App Using a Sliding Time Window

Summary:

At present, we calculate the Factor of Individual Consumption (FIC) in our app at a single point in time, i.e. based on the plans that are active at the time of calculation. This text proposes instead calculating the FIC using a sliding time window.

Problem:

As is known, the Factor of Individual Consumption (FIC) is calculated according to the following formula:

$$FIC = \frac{A - (P_o + R_o)}{A + A_o}$$

The variables of this formula are:

- Labour in productive plans (A)
- Labour in public plans (A_o)
- Circulating means of production in public plans (R_o)
- Fixed means of production in public plans (P_o)

These variables are aggregated across individual plans. The GIK merely states that the costs of public enterprises are “added together”¹ and refers to a “summation”² without specifying in detail how this aggregation is to be carried out.

In our app, we take into account all currently active³ plans and sum up the a , p_o and r_o specified in them.

Mathematically expressed, if n is the number of currently active plans, we calculate:

$$A = \sum_{i=1}^n a_i$$

$$A_o = \sum_{i=1}^n a_{o_i}$$

$$R_o = \sum_{i=1}^n r_{o_i}$$

$$P_o = \sum_{i=1}^n p_{o_i}$$

1 GIK, Grundprinzipien kommunistischer Produktion und Verteilung. Hamburg 2020, 179

2 GIK, Grundprinzipien kommunistischer Produktion und Verteilung. Hamburg 2020, 195

3 A plan is active if it has been approved, its planning cycle has begun, and it has not yet ended.

This naïve FIC calculation would be sufficient if all plans had identical plan cycles, e.g. from 1 January to 31 December. However, since we want to allow different plan cycles, this calculation is inadequate:

- First, because at the moment only those plans that are active at the current time are considered. A plan that ended only a few hours ago therefore has no influence on the current FIC. Yet macroeconomic processes can only meaningfully be assessed over appropriate periods.
- Second, we include the total a , p_o and r_o of each active plan, regardless of the duration of the plan. Here too, no adequate time frame is defined within which plan values are relevant for the current FIC.

Solution:

The FIC is to be captured over a defined time window. The procedure is as follows:

We define a time window of t days that extends from the current time $t/2$ backwards into the past and $t/2$ forwards into the future. The value chosen for t depends on the respective economy, e.g. on the number, duration, frequency, and volume of plans. For our app, 180 days could be a first approximation.

Planned labour and means of production that fall within this window are weighted in the FIC: If a plan lies 100% within the current time window (i.e. it starts and ends within the window), its a , p_o and r_o enter the FIC at 100% (coverage factor 1). If it lies 50% within the window, they enter at only 50% (coverage factor 0.5). If it lies entirely outside the window, it does not contribute at all (coverage factor 0), and so on.⁴

We can now aggregate the values lying within the time window for the FIC and then compute the FIC using the known formula.

A sliding window is thus chosen around the calculation period, which proportionally takes into account plans from both the past and the future.

$$A = \sum_{i=1}^n a_i \cdot \text{coverage}_i$$

$$A_o = \sum_{i=1}^n a_{o_i} \cdot \text{coverage}_i$$

$$R_o = \sum_{i=1}^n r_{o_i} \cdot \text{coverage}_i$$

4 The approach proposed here simplistically assumes that a , p_o and r_o are expended evenly over the duration of a plan, which can only be a very rough approximation of reality. For example, it may be the case that p_o and r_o are statistically expended more toward the beginning of a plan, while a is expended more toward the end. As a result, the FIC will at times be too high and at other times too low. This inaccuracy is not a fundamental problem, because the account of the Public Sector Fund (PSF) records the work certificates that were paid out in excess or too sparingly and thereby enables society to respond accordingly.

$$P_o = \sum_{i=1}^n p_{o_i} \cdot coverage_i$$

A sliding window is thus chosen around the calculation period, which proportionally takes into account plans from both the past and the future.

Discarded solutions:

- If all plans had identical start and end times, the naïve calculation of the FIC could be retained. This is, however, unrealistic in complex economies.
- Instead of using a sliding window around the current calculation period, one could use a fixed window (e.g. 1 January to 31 December). However, this leads to unnecessarily sharp jumps in the FIC at the boundaries of the window and does not correspond to the dynamic nature of plan creation in labour-time accounting.