METHODOLOGY FOR THE COMPILATION OF TRANSACTIONS

Transactions complement data on outstanding amounts with information on developments arising from financial transactions between monetary financial institutions (MIF) and other sectors in the economy. The approach to calculate transactions adopted by the National Bank of Poland (NBP) – consistent with the European Central Bank (ECB) methodology – allows for estimating the value of transactions when actual financial transactions are not reported directly by reporting institutions. The change in outstanding amounts between two subsequent reporting periods is affected by both financial transactions and developments arising from non-transactions. In order to present developments in a certain instrument that are the result of financial transactions only it is necessary – in line with the ECB methodology – to remove from the difference in two subsequent end-month outstanding amounts changes arising from non-transactions. Transaction data provide more accurate and analytically meaningful information on growth rates in monetary categories.

Financial transactions occur when an MFI acquires or disposes financial assets (e.g. grants loans or buys/sells securities) and incurs or repays liabilities (e.g. accepts or repays deposits). The value of transactions reflects actual activity of an institution.

On the other hand, changes in outstanding amounts due to **non-transactions** are the result of, for example, changes in the price of securities held by an MFI or changes in the exchange rate of a currency in which some MFI's assets and liabilities are denominated.

Information on operations other than transactions, i.e. adjustments, cover change in outstanding amounts resulting from:

A revaluations:

- revaluations of securities,
- write offs/write-downs of loans,

B reclassifications and other adjustments, e.g. reporting errors and other statistical factors,

C exchange rate adjustments.

Types of non-transactions (adjustments)

A. ***Revaluations of securities*** cover changes in outstanding amounts due to valuation of securities held by MFIs in two subsequent reporting periods. Such changes affect the value of securities portfolio, however, do not result from any purchase or sale of securities.

Revaluations do not apply to deposits and loans, which are recorded at their nominal value, as provided for in the regulation EBC/2008/32. Thus deposits and loans are not affected by such changes (with the exception of foreign currency denominated instruments which are affected by exchange rate changes – see point C).

In case of loss loans they may be derecognized from the MFI balance sheet in part or in whole, i.e. removed from MFI claims on a counterparty, and the value of these claims is ***written off/down***[1]. Such an operation has to be presented as an adjustment as it affects (decreases) the outstanding amount of loans, which decrease, however, was not the result of the loan repayment (i.e. a transaction), and it does not change the level of MFI financing either.

B. ***Reclassification and other adjustments*** comprise:

- changes in the composition of the reporting population,
- reclassification of assets and liabilities, e.g. due to methodological changes or reporting errors.

The deletion from/inclusion into the MFI population due to liquidation of an institution or changes in the MFI definition[2] are examples of changes in the composition of the reporting population.

Reclassification of assets and liabilities comprises, for example, a change in the sector or instrument classification, including a change in the maturity breakdown. Such changes do not

[1] In this respect MFIs follow International Accounting Standards/International Financial and Reporting Standards or the regulation of the Minister of Finance of 16 December 2008 on provisioning for risks related to banks' activity, Journal of Laws No. 235, item 1589.

[2] For example, inclusion by the NBP of credit unions (*spółdzielcze kasy oszczędnościowo-kredytowe – SKOK*) and money market funds into the MFI sector.

result from transactions but only from changes in recording, and thus an adjustment must be introduced to remove the impact from the statistics on transactions.

C. ***Revaluation adjustments due to exchange rate changes*** refer to changes in outstanding amounts arising from changes in the value of assets and liabilities positions denominated in foreign currencies, and which are due to changes in exchange rates of these currencies.

Calculation of monthly transactions and growth rate

The starting point for calculating monthly growth rate is the computation of monthly changes arising from transactions (F_t^M), calculated based on the difference in outstanding amounts between two subsequent reporting months (L_t - L_{t-1} – where L_t stands for the reporting month *t* and L_{t-1} for the previous reporting month *t-1*), adjusted for monthly changes in non-transactions (i.e. reclassifications (C_t^M), exchange rate changes (E_t^M) and revaluations (V_t^M)).

$$\mathrm{F}_{\mathrm{t}}^{\mathrm{M}} = \left(L_t - L_{t-1}\right) - C_t^M - E_t^M - V_t^M$$

For simplicity changes not resulting from transactions described above are referred to as CEV_t^M.

$$\mathrm{F}_{\mathrm{t}}^{\mathrm{M}} = \left(L_t - L_{t-1}\right) - CEV_t^M$$

Having calculated monthly transactions (F_t^M) one can proceed to calculating ***monthly growth rate*** (a_t^M) according to the following formula:

$$\mathrm{a}_{\mathrm{t}}^{\mathrm{M}} = \frac{\mathrm{F}_{\mathrm{t}}^{\mathrm{M}}}{\mathrm{L}_{\mathrm{t-1}}}$$

In order to obtain monthly growth rate in percentage terms the above formula is multiplied by 100.

The difference between the formula for the calculation of monthly growth rate adjusted for non-transactions and the formula for not adjusted growth rate $\boldsymbol{s_t^M}$ is in the value of CEV_t^M which is deducted from the difference in outstanding amounts between two subsequent reporting months ($\boldsymbol{L_t - L_{t-1}}$).

$$a_t^M = \frac{(L_t - L_{t-1}) - CEV_t^M}{L_{t-1}} * 100 \qquad \text{while} \qquad s_t^M = \frac{L_t - L_{t-1}}{L_{t-1}} * 100$$

Calculation of 12-month growth rate ($\boldsymbol{a_t}$)

12-month growth rate adjusted for non-transactions is calculated based on the relative value of monthly changes in transactions according to the below formula:

$$a_t = \left[\prod_{i=0}^{11}\left(1 + \frac{F_{t-i}^M}{L_{t-1-i}}\right) - 1\right] * 100$$

$$a_t = \left[\left(1 + \frac{F_t^M}{L_{t-1}}\right)\left(1 + \frac{F_{t-1}^M}{L_{t-2}}\right) * \ldots * \left(1 + \frac{F_{t-11}^M}{L_{t-12}}\right) - 1\right] * 100$$

12-month not adjusted growth rate does not consider CEV and is calculated according to the below formula:

$$s_t = \left[\prod_{i=0}^{11}\left(1 + \frac{L_{t-i} - L_{t-1-i}}{L_{t-1-i}}\right) - 1\right] * 100$$

$$s_t = \left[\left(1 + \frac{L_t - L_{t-1}}{L_{t-1}}\right)\left(1 + \frac{L_{t-1} - L_{t-2}}{L_{t-2}}\right) * \ldots * \left(1 + \frac{L_{t-11} - L_{t-12}}{L_{t-12}}\right) - 1\right] * 100$$