Methodological notes to the press release on the aggregated balance sheet of credit institutions

Contents

1. Defining the net transaction values

In the reports underlying the publication, data suppliers provide the period-end closing balances of individual items, the currency in which the individual balances are stated in their balance sheet, and the value of the price change and other flows related to the reporting period. The value of the monthly transactions is defined based on these.

The value of – full or partial – loan write-offs in the reporting period, as well as the difference between the principal receivable and sales prices when selling loans are stated as price change in the publication.

Other changes in volume include all flows in the reporting period that occurred for reasons other than change in exchange rate or prices, which cannot be linked to a real economic event. These may include, for example, a change in the counterparty's country or sector.

Transaction is defined in accordance with the methodology of the European Central Bank, i.e. the balance sheet method: transaction is the amount remaining after reducing flows by the amount resulting from the exchange rate change, the price change and other changes in volume.

For example, according to the aggregated balance sheet of credit institutions containing seasonally not adjusted data, the following data on foreign exchange borrowing by households are shown in October 2009:

Assets	Opening stock	Revaluations and other changes	Transactions	Change in stock	Closing stock
Households (S.14)					
FX loans	5148.5	32.3	-8.2	24.1	5172.6

The difference between the opening and closing stocks (5172.6 less 5148.5) is HUF 24.1 billion, that is, the total value of households' FX loans increased. This resulted from two factors: net repayments of HUF 8.2 billion and revaluations and other changes of HUF 32.3 billion. Having eliminated the impact of the latter changes in stock, households' outstanding FX loans – due to transactions only – declined in October 2009.

2. Seasonally adjusted time series and growth indices

Seasonal adjustment is performed by a software that analyses time series relying on mathematical models, identifies the recurring periodic – i.e. seasonal – effects, and adjusts the time series for such effects.

In the case of the loans and deposits of non-financial corporations and households seasonal adjustment is performed on transaction data, while in the case of amounts of money we examine the seasonal features of stocks.

For example, the original transaction data of non-financial corporations' loans clearly show that the values registered in December fall short of the values registered in November every year. The software identifies this seasonal decline by a mathematical model adapted to the time series and when performing the adjustment it "reduces the seasonal decline in transactions", i.e. smoothes the movements due to seasonal changes.

Another graphic example is the seasonal adjustment of cash holdings: the volume of currency in circulation soars every year around Christmas, and then in January there is a large fall compared to the December level. When performing the seasonal adjustment, the software smoothes this (seasonal) fluctuation, observed every year, i.e. the adjustment here as well is based on the principle that "if it were not for Christmas, there would be no outliers and the holding would grow steadily." This process is easy to trace in the seasonally adjusted time series.

Accordingly, after removing the seasonal changes we get time series where the data from adjacent periods are more comparable.

The seasonal adjustment is performed by the JDemetra+ application, which adapts an optimal mathematical model to the time series.

The formula used to calculate real growth rates (R_t) presented in the press release only takes into account the effects of transactions and eliminates changes in the price level, apart from revaluations and other changes in stock (see, for example, the chart plotting the growth of the monetary aggregates):

$$R_t = \frac{\dfrac{X_{t-12} + T_{t-11}}{P_{t-11}}}{\dfrac{X_{t-12}}{P_{t-12}}} * \frac{\dfrac{X_{t-11} + T_{t-10}}{P_{t-10}}}{\dfrac{X_{t-11}}{P_{t-11}}} * \ldots * \frac{\dfrac{X_{t-1} + T_{t}}{P_{t}}}{\dfrac{X_{t-1}}{P_{t-1}}} - 1$$

where

t = serial number of the current period
X_t = closing stock at time t
T_t = transaction in the t^{th} time period
P_t = relative price level in the t^{th} time period (average of 1995=100)

3. Disclosure of revisions

The press releases belonging to the publication always reflect the status of the first data release; these are not modified retrospectively due to revisions by the data suppliers. (Although in extraordinary cases retrospective modifications may arise; in this case we issue a press release on the change also indicating the date of the modification.)

The time series and interactive graphs are updated upon each publication: reports are supplemented with the data of the new period, and the figures may also change retrospectively as a result of the amendments submitted by the data suppliers.

4. Loans and deposits in the balance sheet

Loans on the assets side also include the deposits placed by the data supplier credit institution with other monetary financial institutions and assets from repo transactions.

Deposits on the liability side also include the amount of liabilities arising from the loans taken by the data supplier credit institution and from repo transactions.

5. Management of stock changes related to the purchase/sale of loans

In the case of loans purchase, the amount of the purchase price is shown as a transaction with a positive sign, while any difference between the gross principal value of the loans and the purchase price is indicated as other revaluation adjustments, also with a positive sign.

In the case of the sale of loans, the sale price is shown as a transaction with a negative sign, while, if the gross principal amount of the loans is greater than the sale price, the difference is reported as other revaluation adjustments with a negative sign.

6. Derecognition of credit institutions under liquidation or dissolution

Although credit institutions under liquidation or dissolution are still in operation until the end of the liquidation/dissolution procedure, they are moved from the group of credit institutions to the sector of other financial intermediaries in statistical statements.
Data on such institutions are shown in the items relating to credit institutions for only the last whole month of their operation as a credit institution. In the next publication for the following month, the items are excluded from the stocks of credit institutions as reclassification and other changes and not transactions.
Claims and liabilities linked to credit institutions under liquidation or dissolution have also been reclassified from the balance sheet of credit institutions still in operation to claims/liabilities linked to other financial intermediaries.

7. Retroactive modifications to other financial intermediaries' loans and deposits

In the publication released in January 2021, the stocks of companies classified into the captive financial institutions sector, were reclassified from the non-financial corporations sector to the other financial intermediaries sector, going back to January 2017.

8. Correction of seasonally adjusted loan transactions related to the coronavirus pandemic

The moratorium on payments, ordered with a view to mitigating the consequences of the coronavirus pandemic and its impacts on the national economy, cannot be linked to seasonal effects. Accordingly, upon the seasonal adjustment of households' credit transactions the combined effect of the loan instalments omitted due to the moratorium on payments and non-materialised borrowing due to the coronavirus pandemic is treated as an outlier. By doing so, its effect is ignored during seasonal adjustment, while the time series containing household forint loan transactions data continue to be adjusted for other seasonal effects.

9. Reclassification of funds increasing the security of financial investments into the central government

In accordance with the Eurostat's decision and in consultation with the Hungarian Central Statistical Office, the funds increasing the security of financial investments have been removed from the sectors of financial corporations and non-financial corporations and reclassified into the general government sector in monetary statistics from the end of July 2017 onwards. The sectoral reclassification affected the following institutions: National Deposit Insurance Fund, Investor Protection Fund, Guarantee Fund for Cooperative Credit Institutions, Compensation Fund, Resolution Fund, Hungarian Resolution Asset Management Plc., Resolution Receivable Management Plc., RESIDEAL Plc.

10. Changes in data on credit institutions from the release of January 2017 data

From 2017, resident credit institutions are allowed to use International Financial Reporting Standards in compiling individual financial reports and maintaining accounting records. This has required a revision of the data collection system for credit institutions used to compile central bank statistics and the introduction of reports that could be competed by credit institutions on the basis of both domestic and international accounting standards. From the statistical releases for January 2017 as a reference period, the main source of credit institutions' balance sheet statistics is the M01 (M11 in respect of annual frequency) monthly balance sheet data report and detailed M02-M05 data reports. These data reports are primarily intended for statistical purposes, and therefore the requirements and recommendations of international accounting standards have more importance in them than in the earlier supervisory balance sheet reports. This in turn has made it possible to clarify information contained in data reports as well.

Instead of the traditional business breakdown used in previous data collections (financial services and investment services), assets and liabilities in the balance sheet are broken down exclusively by types of instrument. As a result, loan receivables and deposit liabilities related to investment services, previously recorded under other assets and other liabilities and werenot broken down by instrument, have been re-recorded under loans and deposits, respectively. The increase in the value of loans on the assets side was caused by the fact that assets purchased from other financial institutions should be recorded at gross value in the balance sheet, in the same way as own loans, replacing the previous practice of recording at purchase price. All reporting credit institutions (not only those opting for fair value accounting and those using fair value accounting due to the changeover to IFRS) record their financial derivatives at fair value in the new data reports, which has led to changes in other assets and other liabilities. Following the changeover to IFRS, the valuation of various securities and equity positions, impairment loss and revaluation adjustment, the value of provisions and, in conjunction with these, equity in the balance sheet have also changed at the credit institutions affected.

The new, detailed data reports are based on data derived from analytical records instead of general ledger data. Consequently, there may be a few days' differences across maturities of certain instruments. As a result, original maturities, defined in years, in the previous sources of data, the supervisory balance sheet and the new data reports may differ slightly. Reporting based on analytical records yields more precise data.

The effect of the above methodological changes are shown among other volume changes in the time series of monetary statistics publication for the reference period of Dec 2016.

11. Treatment of forint conversion and settlement of foreign currency loans in the monetary statistics

A. Forint conversion of non-mortgage household loans

Under Act CXLV of 2015 on the *settlement of issues related to the conversion of claims arising from household loans*, credit institutions are required to convert foreign currency non-mortgage loans to household into forint, as provided for in the Act (hereinafter: forint conversion). The effect of the forint conversion of non-mortgage loans appears first in the November 2015 data.

B. Forint conversion and settlement of mortgage loans

Under Act LXXVII of 2014 on the *settlement of issues related to the change in the foreign currency denomination of certain household loans and interest rate rules*, credit institutions are required to convert foreign currency mortgage loans to households into forints, as provided by the Act (hereinafter: forint conversion).

Under Act XL of 2014 on the *rules of financial settlement and certain other issues set out in Act XXXVIII of 2014 on the settlement of certain issues concerning the uniformity decision by the Supreme Court related to loan agreements between financial institutions and households*, credit institutions are required to settle with their debtors (hereinafter: settlement), as provided by the Act.

The effect of the forint conversion and settlement of mortgage loans appears first in the February 2015 data.

Changes in volume arising from both forint conversions and settlements are treated as transactions in the monetary statistics.

Calculating the forint value of loans affected by forint conversion in the monetary statistics

In December 2014, an amendment to Government Decree No 250/2000 (XII. 24.) on special provisions regarding the annual reporting and book-keeping obligation of credit institutions and financial enterprises allows credit institutions to value foreign currency-denominated mortgage loans affected by mandatory forint conversion as well as the related stocks of loans at the exchange rate provided by the Forint Conversion Act at their own discretion.
However, in order to ensure that all stocks of foreign currency loans are presented at uniform exchange rates in their reports to be made to the MNB, credit institutions are required to continue to calculate forint values of foreign currency-denominated loans, including those affected by mandatory forint conversion, at the MNB's official end-of-month mid-rates, in line with past reporting practice and using unchanged methodology.
Furthermore, in order to ensure that the balance sheet totals in credit institutions' statements and their reports to be made to the MNB are identical, part of credit institutions show the difference between the MNB's official end-of-month exchange rate and the fixed exchange rate among Assets in the row Provisions/Valuation difference. In this case, the net stock of loans affected is recorded at the fixed exchange rate in the balance sheet and the statements detailing it. Some credit institutions show the difference among Prepayments with a negative sign, instead of using the row Provisions/Valuation difference.

In summary, in line with past publication practice, forint values of foreign currency-denominated loans published in the MNB's publications containing balance sheet items of credit institutions are calculated using unchanged methodology, at the MNB's official end-of-month mid-rates, in order to present outstanding lending to households at uniform exchange rates.

Adjustments to seasonally adjusted loan transactions data due to forint conversion

Due to the fact that forint conversions cannot be related to any seasonal effect, upon the seasonal adjustment of households' loan transaction data the effect of the forint conversion/settlement is treated as an outlier. By doing so, its effect is ignored during seasonal adjustment, while the time series containing transactions data continue to be adjusted with other seasonal effects.

12. Treatment of the MNB's Funding for Growth Scheme in the monetary statistics

The MNB launched its Funding for Growth Scheme (FGS) on 1 June 2013, in the first phase of which it granted refinancing loans at preferential interest rate to credit institutions until the end of September 2013, which they lent on to SMEs under a capped interest margin. (The details of the Scheme are available on the Bank's website at the following link.)

The transaction values published as part of the publication of monetary statistics also include loans granted to non-financial corporations under the FGS.

Adjustment of seasonally adjusted loan transaction to reflect the effect of the FGS

For the purposes of the seasonal adjustment, the transactions related to the new loans disbursed in Pillar I of FGS in July, August or September 2013, together with the transactions related to the forint conversion of foreign currency loans are ignored, i.e. treated as outliers.On the other hand, we continue to make adjustments for other seasonal effects to the time series containing the transactions adjusted for the effect of Pillar 1 of FGS.
On 11 September 2013, the Monetary Council decided to continue the Scheme, by launching Pillar 2 of the FGS. Loans granted each month under Pillar 2 and additional pillars of the Scheme are treated as part of normal business, and therefore the time series is not adjusted for such loans in the seasonal adjustment process.

13. Presenting impairment loss and revaluation adjustment data

In order to enable easier comparison and better analysis of data published by European central banks, the MNB has modified its methodology of recording data on provisions set aside against asset side loans and deposits and revaluation adjustments in its publications presenting credit institutions' balance sheet items, in line with the methodology of the European Central Bank.

Previously, provisions for impaired loans and revaluation adjustments were recorded as items reducing the stock of other assets in the Bank's statistical publications. The impairments and valuation differences recognised in respect of assets side loans and deposits are shown – retrospectively to January 2010 – on the liabilities side with a positive (+) sign, together with the provisions, for the first time in the publication presenting data for January 2014. In parallel with this, provisions will be treated separately from other liabilities.

In the publications, the sum of items transferred from the assets side to the liabilities side will increase balance sheet totals reported by credit institutions in their accounting balance sheets.

14. Changes in the stocks of loan impairments and specific provisions

In order to enable better analysis of transaction values of credit institutions' balance sheet items calculated and published by the MNB, from the press release of 28 February 2014 presenting January 2014 data, any change in the stock of provisions made against asset side loans and revaluation adjustments as well as specific provisions – i.e. any change which cannot be related to exchange rate changes or other volume changes – will be shown as revaluation.

The recording of volume changes as revaluation, previously treated as transactions, has been taken back to January 2010.

15. Statistical treatment of the change in the definition of money market funds

The European Central Bank, in cooperation with the European Securities Markets Authority, has changed the definition of money market fund. The MNB has been using this new definition for the statistical classification of mutual funds since 1 January 2012. For the new definition see:
http://www.mnb.hu/letoltes/penzpiaci-alapok-uj-definicioja-2012-1.doc

With the change in definition, 10 mutual funds are no longer classified as money market funds in a statistical sense from 2012. The main balance sheet items of these funds have been reclassified from the sector of money market funds (C6) to the sector of non-money market funds (D3) at the values contained in the table below:

Main balance sheet items of reclassified money market funds, 31 December 2011	HUF billions
Total assets	178.7
Cash and deposits	102.9
Net asset value of mutual fund shares	177.2

16. Treatment of early repayment in the monetary statistics

On 19 September 2011, Parliament passed Act CXXI of 2011 amending certain laws on home protection, which was brought into force on 29 September. Under the amendment, the law defined a range of consumers with foreign currency-denominated loans who could prepay, i.e. to repay in full, their existing debt at a fixed exchange rate which was lower than current market rates.

- **Calculating early repayments of foreign currency loans**

  In the statistics, early repayments of foreign currency loans are recorded as transactions. As with all other publications on monetary statistics, the basis for calculating transactions is the monthly average foreign exchange rate of the MNB, instead of the amount actually paid by households at the early repayment exchange rate defined by the law.

- **Calculating monthly data on early repayments and loans granted for early repayment**

  Data on early repayments and loans granted for early repayment are derived from weekly reports, while aggregated balance sheet data are derived from monthly reports. Given that in most cases data for a calendar month cannot be produced by aggregating weekly data, monthly data produced on the basis of weekly reports are estimated, in order to achieve comparability across data.

  Monthly volume of early repayments and loans for early repayment = (opening value for the week containing the last day of the month – estimated closing value for previous month) + (closing value for the week containing the last day of the month – opening value for the week containing the last day of the month)*(number of working days of the week containing the last day falling within the month)/(number of working days of the week containing the last day of the month).

- **Correction of seasonally adjusted loan transactions data due to early repayments**

  As an effect of early repayments, outstanding debt of households in other currencies – taking into account only transactions – have fallen significantly from October, while forint loans for early repayment have increased. However, these changes cannot be related to any seasonal effect.

  If the data to be adjusted were not corrected by data on early repayments and loans for early repayment, it would significantly distort the seasonally adjusted transaction values. Due to this, when performing the seasonal adjustment for the transaction time series of both forint and foreign currency loans, the effect of early repayment is ignored, i.e. treated as an outlier, while we continue to adjust the time series of transactions for other seasonal effects.

17. Treatment of repo type transactions in the monetary statistics

At the time of releasing 2011 Q2 data, the MNB published revised balance of payments and financial accounts statistics back to January 2008, due to changes in the treatment of securities repo transactions. Consistent with this, in its press release on 28 October 2011 the Monetary Statistics Area also performed the revision of credit institutions' aggregated balance sheet data back to 2008 (at the time of releasing data for September 2011). The data published after that date contain the repo correction detailed below until the end of 2016 – from December 2016, in line with the IFRS requirements, the securities sold/purchased under a repurchase agreement are not removed from/included in credit institutions' (statistical) balance sheet, and thus the correction described below is no longer necessary.

The Hungarian statistical standards required that in the case of delivery repos (excluding special purpose delivery repos) and securities lending transactions, security assets should be reduced or increased (i.e. the sale or purchase of a security should be recorded). The supervisory balance sheet compiled in accordance with the Hungarian accounting standards was the basis for the most important monetary statistical reports. Accordingly, until November 2016 data on repo and securities lending transactions were published in accordance with the Hungarian accounting standards.

By contrast, in international statistical methodology, ownership of the securities does not change in economic terms in a repo transaction or a securities lending transaction, and therefore the value of security assets may not change in statistical publications. In addition, the related cash movements must be recorded as credit or deposit claims or liabilities.

All data providers obliged to report their balance sheet data are also required to report data on their repo positions. During the adjustment of positions in repo-type transactions, data provided by credit institutions are adjusted by gross purchase price data reported on their own repo-type transactions.

Adjustments according to types of transaction:

- Repo transaction: delivery repo (excluding special delivery repo), Sale and Buy Back
- Securities lending transaction: collateralised loan provided against cash or miscellaneous collateral, securities lending provided against other collateral and uncollateralised securities lending

Effect of data adjustments on the positions in various repo-type transactions:

- Data provider transfers securities under a repo transaction:
    - Increase in the securities position
    - Increase in deposits (repo liability)

- Data provider receives securities under a repo transaction:
    - Decrease in the securities position
    - Increase in loans provided

- Data provider transfers securities under a securities lending transaction:
    - Increase in the securities position
    - Decrease in loans provided

- Data provider receives securities under a securities lending transaction:
    - Decrease in the securities position
    - Decrease in borrowing

- Securities positions are adjusted in the currency denomination of securities, according to the place of issue, issuing sector and original maturity.

- The related stocks of loans/deposits are always adjusted in forints, according to the country and sector of the counterparty as well as the maturity of the transaction.

Transaction and exchange rate effects are calculated after the data adjustment is made.

- **Adjustment of liabilities side securities data for repo transactions**

  In the time series presenting the aggregated balance sheet of monetary financial institutions (MFIs) the breakdown of securities holdings on the liabilities side of their balance sheet by resident and non-resident holders is defined in harmony with international accounting standards, by taking into account the holder of securities in economic terms. Accordingly, when a repo transaction in securities issued by MFIs is made in the secondary market, as a result of which the securities are temporarily transferred from the resident holder to a non-resident or from a non-resident holder to a resident, such securities are recorded for their holders in economic terms rather than on the account of the party borrowing the securities under repo.

From December 2016, in parallel with the introduction of a new data collection system, the MNB no longer applies repo corrections. Credit institutions that changed over to IFRS and in 2017 still applied the Hungarian accounting standards, report repo transactions in the M reports as loans, in accordance with the IFRS requirements.

18. Introduction of a new data processing system in the monetary statistics releases from 2010

In September 2010, the Bank's Statistics area introduced a new processing system to compile monetary statistics. Because the new framework has greater capacity to handle statistical data, it is now possible to directly use individual securities statistics and to execute computing and estimating procedures applied in monetary statistics at the individual level. The methodological developments also rely on extra information made available by collecting monetary statistics from January 2010, in accordance with the new ECB regulation, in addition to the opportunities offered by the new framework.
The multi-dimensional database enables the new system to disaggregate changes in stocks for all instruments separately, at the level of individual data providers.

19. Methodological changes applied in the consolidated balance sheet of monetary financial institutions from 2010

From 2010 another methodological change, consistent with the IMF's handbook on monetary statistics, is that credit institutions' equity stakes in each other will not be consolidated in the future.

In the consolidated balance sheet of monetary financial institutions (Table 3), the column 'Shares and other equity issued by residents' also includes investments within the credit institutions sector. At the same time, the related adjustments will not be shown in the column 'Excess of inter-MFI liabilities'.

The size of this change is equal to the data in the times series for investments within the credit institutions sector, which are included in column No. 20 of 'Aggregated balance sheet of MFIs (S.122)' (Table 2.1) detailing shares and other equity issued by monetary financial institutions.