

## 7. CURRENCY AND BALANCE OF PAYMENTS

The source of the data presented in this chapter is the Czech National Bank. All tables where the titles of reports are given are exhaustive investigations. Otherwise, qualified estimates and calculations are used.

### Notes on Tables

#### Table 7-1 Monetary aggregates and counterparts

The table on monetary aggregates and their counterparts is a concise balance sheet of monetary financial institutions (MFIs) providing users with a basic overview of the position of the MFI sector vis-à-vis other resident and non-resident sectors.

Monetary aggregates represent the amount of money in the economy and are calculated from the monetary liabilities of resident monetary financial institutions (the money-creating sector) to other resident sectors (the money-holding sector).

The money-holding sector comprises all Czech residents other than MFIs (excluding central government). In addition to households and NPISH, it includes non-financial corporations, financial corporations other than MFIs, local government and social security funds. In the Czech Republic, MFIs comprise the central bank (S.121) and other monetary financial institutions (S.122 and S.123), i.e. banks, money market funds and credit unions. Central government is considered to be a money-neutral sector.

Monetary aggregates differ according to the degree of liquidity of the individual components.

The **narrow monetary aggregate M1** comprises currency in circulation plus overnight deposits.

The **intermediate monetary aggregate M2** comprises M1, deposits redeemable at a period of notice of up to and including three months, and deposits with an agreed maturity of up to and including two years.

The **broad monetary aggregate M3** comprises M2 plus marketable instruments consisting of money market fund units/shares, debt securities with a maturity of up to and including two years, and repurchase agreements.

The main counterparts of the monetary aggregates are as follows:

**Longer-term financial liabilities**, which comprise deposits redeemable at a period of notice of over three months, deposits with an agreed maturity of over two years, capital and reserves.

**Loans to general government** (S.13) under the ESA 2010 classification, including purchased debt and equity securities issued by general government.

**Loans to the private sector** (S.11+S.124+S.125+S.126+S.127+S.128+S.129+S.14+S.15) under the ESA 2010 classification, including purchased debt and equity securities issued by this sector.

**Net external assets**, which comprise external assets of Czech MFIs (such as monetary gold, non-koruna cash, securities issued by non-residents and loans granted to non-residents) minus external liabilities of the Czech MFI sector (such as non-residents' holdings of deposits, repurchase agreements, money market fund shares and units, and debt securities with a maturity of up to and including two years issued by MFIs and held by non-residents).

Monetary aggregates and their counterparts in the Czech Republic are compiled on the basis of the harmonised consolidated balance sheet of the MFI sector. It is the sum of the balance sheet of the central bank and the aggregated balance sheet of other monetary financial institutions excluding mutual loans and deposits, including non-marketable securities; cash at MFI cash desks is subtracted from issued currency in circulation and other debt, and equity securities held by MFIs on the asset side are subtracted from MFI liabilities arising from the issuance of such instruments.

Money and banking statistics statements and the CNB's own calculations are the data sources for the compilation of the MFI consolidated balance sheet.

The collection methodology (statistical principles, sector definitions, instrument classification, method of calculation of annual changes) is harmonised with European and international standards (ECB Regulations and Recommendations, IMF Monetary and Financial Statistics Manual, etc.).

### Calculation of growth rates

The growth rates for the reference period are calculated from the volumes of monthly financial transactions and the outstanding amounts at the beginning of each month. Monthly transactions are calculated from differences in outstanding amounts adjusted for reclassifications, other revaluations, exchange rate variations and other changes which do not arise from transactions. This data thus reflects only those changes that arise from accepting financial assets or providing financial liabilities. Reclassifications and other non-transaction corrections are introduced into the transaction statistics to preserve the comparability of the gradual monitoring results, thereby enabling calculation of the indices of expected outstanding balances of the monitored variables and determination of their growth rates.

Method of calculation

1. The month-on-month percentage change  $a_t^M$  for month  $t$  is calculated as:

$$(a) \quad a_t^M = \left( \frac{F_t^M}{L_{t-1}} \right) \times 100$$

2. The annual growth rate for month  $t$ , i.e. the change for the last 12 months ending with month  $t$ , is calculated as the product of the twelve coefficients for each previous month. The calculation of the annual growth rate from the month-on-month growth rates thus enables transaction changes and non-transaction effects in the individual months to be taken into account:

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

where

$F_t^M$  – transactions in month  $t$

$F_t^M = (L_t - L_{t-1}) - C_t^M - E_t^M - V_t^M$

and

$L_t$  – outstanding amount at the end of month  $t$

$C_t^M$  – reclassifications in month  $t$

$E_t^M$  – exchange rate variations in month  $t$

$V_t^M$  – valuation changes in month  $t$

The growth rates for other reference periods are derived from formula (b).

Table 7-2 Monetary base of the CNB

The monetary base (reserve money) includes currency and reserves held by commercial banks and credit unions (since 2012) on accounts with the central bank. These items together constitute the **use of the monetary base**. The monetary base expresses the central bank's relations with other sectors of the economy. The counterparts of the monetary base are therefore the external sector, the government sector, the banking sector and the non-banking sector. These factors affecting the monetary base are referred to as the **sources of the monetary base**.

**The external sector** represents the balance of short-term and long-term assets and liabilities of the central bank vis-à-vis non-residents in the domestic currency and in foreign currencies. This item also includes the foreign exchange position vis-à-vis residents (domestic banks).

**The government sector** expresses the difference between the assets and liabilities of the central bank vis-à-vis the government sector.

**The Financial Market Guarantee System** includes the Deposit Insurance Fund and the Crisis Resolution Fund.

**Claims on non-bank entities** represent the claims of the central bank on different non-bank entities. These include e.g. banks without licenses.

**Other net assets** include various items, for example the central bank's own funds, tangible and intangible property, claims on commercial banks by virtue of drawing currency in circulation, other deposits of commercial banks with the central bank, other non-government deposits and non-government securities and participations, etc.

**The volume of sterilisation** expresses the volume of CNB bills held by commercial banks, credit unions, other non-bank entities and the Ministry of Finance.

**Stand-by facilities** include overnight lending and deposit facilities, which enable to manage the daily reserve position of banks and credit unions (since 2012) so that an optimum balance on the payment system account is maintained.

- Lombard repo (lending facility): a repo operation serving to provide liquidity to commercial banks and credit unions (since 2012). On granting the credit, 100% coverage by securities, as a rule Treasury bills and CNB bills, is required. Interest on the credit is calculated at the Lombard rate. The minimum volume is not stipulated.

- O/N deposit (deposit facility): commercial banks and credit unions (since 2012) have a possibility to deposit their free funds with the central bank. The deposit is not secured and is remunerated at the discount rate. The stipulated minimum volume is CZK 10 million.

**Currency** represents a liability of the central bank by virtue of issued banknotes and coins held by banks, credit unions (since 2012) and the non-bank public.

**Reserves of banks and credit unions** (since 2012) include required minimum reserves and excess reserves on accounts with the central bank:

- The required minimum reserves are the funds which banks and credit unions (since 2012) are obliged to maintain on their accounts with the central bank. The prescribed volume amounts to 2% of banks' primary liabilities with a maturity of up to 2 years in Czech and foreign currencies. The required minimum reserves are maintained in one-month cycles and remunerated at the valid repo rate.
- The excess reserves represent the difference between the prescribed and actual volumes of the required minimum reserves.

**Tables 7-3 and 7-4 Client loans granted by commercial banks, total: by purpose, sector and activity**

A survey of the balances and structure of loans granted to clients and the bank's receivables from clients (including bank overdrafts and debit balances on clients' current accounts), broken down by economic subsector of the clients-debtors, by economic activities classification of the clients--debtors and by loan purpose.

Data File VST (CNB) 1-12: Monthly statement of client loans and receivables.

**Tables 7-5 and 7-6 Client deposits accepted by commercial banks, total: by sector, activity and duration**

A survey of the amounts and structure of total deposits and other loans accepted from clients (including general government), broken down by agreed duration of the deposit or maturity of the accepted loan and by economic characteristics of the client (economic sector and economic activities).

Data File VST (CNB) 11-12: Monthly statement of deposits and loans from clients.

**Table 7-7 Average interbank offered rates (annual averages)**

**PRIBOR** (Prague Interbank Offered Rates) are reference interest rates on the interbank deposit market calculated on the basis of quotations of selected banks (hereinafter "reference banks"). The interest rates are fixed by the CNB daily at 11.00 a.m. Quotation means publication of an orientation price at which banks are willing to sell deposits in a standard volume to a standard counterparty.

The CNB defines the maturities for which PRIBOR rates are set, the algorithm for their calculation, the reference bank structure, the standard counterparties, the standard volumes and the method of publishing quotations.

PRIBOR rates are set for the following maturities: overnight, 1 and 2 weeks, and 1, 2, 3, 6, 9 and 12 months. They are calculated from the reference banks' quotations on the interbank deposit market in the following manner:

- if more than five reference banks quote an interest rate for a certain maturity, the highest quotation (or one of the highest quotations) and the lowest quotation (or one of the lowest quotations) are eliminated and the PRIBOR is calculated from the remaining quotations as the arithmetic mean rounded to two decimal places;
- if four or five reference banks quote an interest rate for a certain maturity, the PRIBOR is calculated from all quotations as an arithmetic mean rounded to two decimal places;
- if less than four reference banks quote an interest rate for a certain maturity, the PRIBOR is not set.

PRIBOR rates are published daily by the CNB in *Hospodářské noviny* and through the Reuters, Telerate and Bloomberg agencies. The number and structure of the reference banks are given in the notes appended to each table of historical PRIBOR rates.

**Table 7-8 Repo rate, Discount rate, Lombard rate**

The main monetary policy instrument takes the form of **repo** tenders. The CNB accepts excess liquidity from banks and in return transfers eligible securities to them as collateral. The two parties agree to reverse the transaction at a future point in time, when the CNB as borrower repays the principal of the loan plus interest and the creditor bank returns the collateral to the CNB. The basic duration of these operations is 14 days, although repos with shorter maturities are executed from time to time depending on the forecasts of banking sector liquidity. Owing to the systemic liquidity surplus in the Czech banking sector, repo tenders are currently used exclusively for absorbing liquidity.

The CNB conducts variable rate tenders, which means that the declared repo rate serves as the maximum limit rate at which banks' bids can be satisfied in the tender. The bids are settled using the American auction procedure, i.e. those with the lowest interest rate are satisfied as having priority and those with successively higher rates are accepted until the total predicted liquidity surplus for the day is exhausted. If the volume ordered by the banks exceeds the predicted surplus, the CNB either completely refuses the bids at the highest rate or reduces them pro rata. Repo tenders are usually announced every business day at around 9.30 a.m. Banks may submit their bids – i.e. the amounts of money and the interest rates at which they want to enter into transactions with the CNB – within a prescribed time. The minimum acceptable volume is CZK 300 million. Bids exceeding the minimum must be expressed as multiples of CZK 100 million.

**The Discount rate** is a key CNB rate. Up to 30 September 1997, the CNB provided acceptance credits to banks at this rate. Since 1998, when these credits were abolished, the discount rate has been used for deposit facilities. These are non-collateralised overnight deposits with the CNB that any Czech bank may place before the end of the business day. The minimum amount is CZK 10 million.

**The Lombard rate** is the rate at which the CNB grants Lombard credit. Lombard credit is granted against a pledge of selected securities included in the "List of securities accepted by the CNB as collateral for Lombard credit".

#### Tables 7-9 and 7-10 Average interest rates on CZK client loans and deposits

Average interest rates applied by banks on CZK-denominated deposits and loans vis-à-vis clients. The rates are calculated as weighted average where the weights are the volumes in the respective deposit and loan categories.

The methodology was harmonised with the requirements of Regulation (EU) No 1072/2013 of the European Central Bank of 24 September 2013 concerning statistics on interest rates applied by monetary financial institutions (recast) (ECB/2013/34). Since then the interest rates have been reported as annualised agreed rates instead of nominal agreed rates.

The outstanding amounts are defined as outstanding balances of deposits accepted and loans granted by the bank at the time of reporting, broken down by original agreed maturity. Statistics relating to new business were launched in 2004. New business includes all new agreements between bank and client in the reference period (regardless of the start of drawdown). New business is broken down by original interest rate fixation period, i.e. a period at the start of the contract during which the interest rate cannot be changed.

In Table 7-9 new business for households and NPISHs is further broken down by category into:

- **Net new loans including increases** – loans which entered the economy in the given month for the first time. Also includes increases in refinanced loans and other renegotiations.
- **Refinanced loans** – loans provided earlier by an institution other than the reporting bank and for the outstanding amount of which a new loan agreement has been signed with the reporting bank. In cases where the loan was increased when it was refinanced, this category only contains the non-increased portion of the new refinanced loan. The increase forms part of net new loans. This item also includes consolidated loans whose original lender was another institution.
- **Other renegotiations** of existing loans – loans provided earlier by the reporting bank and merely renegotiated (e.g. refixation of interest rates on loans for house purchase). Also includes consolidated loans whose original lender was either another institution/other institutions in addition to the reporting bank, or only the reporting bank. As in the case of refinanced loans, any increase in a loan forms part of the net new loans category.

Non-marketable securities are not included in the individual new business categories. As a result, the interest rates are not necessarily equal to the figures for new business (for consumption and for house purchase) provided in the upper part of Table 7-9.

New business is equal to outstanding amounts in the following types of categories: overnight deposits, deposits redeemable at notice, current account deposits and overdrafts.

The overall indicators of new business, which included new business corresponding to the outstanding amounts of deposits at the end of the reference period, were removed from the interest rate statistics for methodological reasons.

The source of the data is the interest rate statistics statements submitted by banks to the Czech National Bank.

#### Table 7-11 Number of active commercial banks

The data are taken from Report E (CNB) 5-04, Statement on the organisational structure and qualifying holdings of the bank. Banks are divided into groups according to the ratio of paid-up domestic and foreign capital.

#### Table 7-12 Balance of payments

The balance of payments records economic transactions with other countries (i.e. between residents and non-residents) during a certain period. The basic structure of the balance of payments, using the IMF Balance of Payments Manual (6th edition, 2009), consists of the current, capital and financial accounts including the change in reserve assets.

**The current account** records flows of goods (exports and imports) and services (exports and imports of processing, maintenance and repair services, transport services, travel services and other commercial and non-commercial services), primary income on capital, investment and labour (interest, dividends, reinvested earnings, wages and part of contributions and subsidies vis-à-vis the EU budget) and compensating items for real financial resources granted or obtained without countervalue (secondary income such as subsidies and contributions vis-à-vis the EU budget and other EU funds, pensions, foreign aid, contributions, etc.).

**The capital account** comprises capital transfers relating to debt forgiveness, ownership rights to fixed assets, investment grants above all from the EU budget and other EU funds that are reported on the capital account, and transfers of non-produced non-financial tangible assets (e.g. purchase or sale of land by embassies) and intangible assets (patents, licences, copyrights, trading in emission allowances etc.).

**The financial account** records transactions connected with the creation, liquidation and change of ownership of financial assets and liabilities of the government, the banking and corporate sectors and other entities vis-à-vis the rest of the world. It provides information on financial (capital) flows, broken down into direct investment (equity capital and reinvested earnings, debt securities), portfolio investment of an equity and debt nature, financial derivatives, other investment and reserve assets. Other investment is broken down by financial instrument used (equity and debt securities, currency in circulation and deposits, loans, insurance, pension and standardised guarantee schemes, trade credit and advances, other accounts receivable or payable and Special Drawing Rights), by maturity (long-term, short-term) and by sector (the CNB, commercial banks, government and other sectors).

**Reserve assets** shows the foreign asset transactions of the central bank. These assets may be easily mobilised as a source of direct financing of a payments imbalance and of indirect regulation of such an imbalance through interventions on the foreign exchange market. Reserve assets are included in the financial account.

**Errors and omissions** are a correction item between the resulting balance on the current and capital accounts on the one hand and the balance on the financial account on the other hand. They represent the balance of unidentified flows in the current, capital and financial accounts.

The sources used for compiling the balance of payments include the national statistics of external trade in goods and services (CZSO), reporting data from banks and non-banks, information from administrative sources from central authorities and other institutions, and the CNB's own calculations.

#### **Tables 7-13 and 7-14 Foreign direct investment in the Czech Republic by country and activity**

The reported data show the inflow (flow) of foreign direct investment into the Czech Republic in the given year. The presentation of data on foreign direct investment has changed due to the introduction of the sixth edition of the Balance of Payments and International Investment Position Manual (in 2014). The results are broken down according to the asset/liability principle. The assets side shows credit relations with direct investors (a change in loans provided). The liability side contains deposits in equity capital including reinvested earnings and credit relations with direct investors (a change in loans accepted). The NET item shows the net inflow of foreign direct investment from non-residents into the Czech Republic (liabilities net of assets). The presentation of the inflow of foreign direct investment is broken down by territory (the country of the immediate investor) and economic activity (NACE Rev. 2).

Foreign direct investment means such cross-border investment that reflects the objective of obtaining a lasting interest in a direct investment enterprise in the Czech Republic by a non-resident (direct investor). The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise, and a significant degree of influence on the management of the enterprise.

The data on foreign direct investment are based on information and documents in the form of statistical statements of non-banks pursuant to Article 41(1)(c) of Act No. 6/1993 Coll., on the Czech National Bank, as amended by Act No. 227/2013 Coll. The content, form, time-limits and manner of compiling and submitting information are stipulated in Decree No. 235/2013 Coll. The main sources used are the quarterly statements on selected external assets and liabilities and annual statements of non-financial corporations on stocks of foreign direct investment in the Czech Republic. Additional sources of information include statements from banks, Ministry of Finance statements on foreign payments, stock exchange information, the Commercial Bulletin and the press.

#### **Table 7-15 International investment position**

The international investment position provides a survey of the overall composition of the financial assets and liabilities of national economic agents (residents) vis-à-vis foreign countries (non-residents) as of a certain date.

The structure of the investment position corresponds to that of the financial account; its assets and liabilities are broken down by instrument into direct investment (equity including reinvested earnings and debt instruments), portfolio investment (equity and debt), financial derivatives and other investment, which are broken down by financial instrument (equity and debt securities, currency in circulation and deposits, loans, insurance, pension and standardised guarantee schemes, trade credit and advances, other accounts receivable or payable and Special Drawing Rights), by maturity (long-term, short-term) and by basic institutional sector group. The asset side also includes the CNB's reserve assets. Reserve gold (as well as gold in possession of commercial banks) has been valued at market price since 2000. Liabilities arising from the allocation of Special Drawing Rights are provided separately on the liabilities side.

The net investment position (the difference between total assets and liabilities) represents the net relationship vis-à-vis foreign countries (creditor or debtor position).

In addition to transactions undertaken in previous periods and recorded in the balance of payments, the stock of assets and liabilities recorded as of a certain date in the investment position reflects exchange rate, price and other effects.

The sources used for compiling the investment position are as follows:

*Direct investment* – quarterly survey of non-financial corporations focusing on assets and liabilities and annual statements of non-financial corporations focusing on direct investment stocks in the Czech Republic and abroad.

*Portfolio investment* – monthly statement of monetary and other financial institutions, quarterly survey of non-financial corporations focusing on assets, monthly statement of investment firms (client-account and own-account transactions), residents' notifications of securities issues on foreign markets and information from the SKD (the Short-Term Bond System administered by the CNB). The received data are compared with information from the Central Securities Depository.

*Financial derivatives* – monthly statement of external assets and liabilities of the banking sector (the CNB and other monetary and financial institutions), quarterly statements of foreign assets and liabilities of the non-financial corporations, insurance companies and central government sectors and monthly statement of assets and liabilities of the pension funds sector.

*Other investment* – monthly statement of external assets and liabilities of the banking sector (the CNB and other monetary and financial institutions), quarterly survey of non-financial corporations focusing on assets and liabilities (trade credits), monthly statement of financial loans and accounts abroad of non-financial corporations and other financial institutions, monthly statement of government assets and liabilities, administrative sources.

Reserve assets – CNB balance sheet.

#### **Table 7-16 External debt of the Czech Republic**

External debt constitutes the stock of financial liabilities (with fixed maturity date) of national economic agents (residents) vis-à-vis foreign countries (non-residents), i.e. the value of amounts drawn (by contractual agreement) and outstanding (owed) as of a certain date. It does not include equity investment, i.e. direct investment (equity capital including reinvested earnings) and portfolio investment (equity securities, other participating interests and derivatives).

The sources used for compiling the external debt figures are the same as the data sources for the international investment position (see the methodology related to the table 7-15).

#### **Table 7-17 Reserve assets**

Reserve assets consist of short-term (liquid) foreign assets held by the Czech National Bank and denominated in convertible currencies (deposits with foreign banks, credit provided, securities, foreign exchange and gold, Special Drawing Rights and the reserves position with the IMF) which are available to finance and regulate a balance of payments disequilibrium.

The CNB balance sheet serves as the basis for calculating the reserve assets.

#### **Table 7-18 Nominal and real CZK effective exchange rate indices**

The nominal effective exchange rate of the koruna (NEER) expressed as an index shows the appreciation (index above 100) or depreciation (index below 100) of the national currency towards the basket of selected currencies for a given period against the base period (2015).

The most widespread method of weighted geometric average of nominal exchange rates was used, taking into account the weights of total exports and imports of the Czech Republic's largest trading partners. These countries account for approximately 90% of the Czech Republic's foreign trade. Apart from euro area countries, represented by a single weight and the EUR exchange rate, these countries are China, Poland, United Kingdom of Great Britain and Northern Ireland, Hungary, Russian Federation, United States of America, Switzerland, Korea, Republic of, Romania, Sweden, Japan and Denmark. The weights were calculated in two alternatives. Alternative I – used by the International Monetary Fund – comprises the entire trade turnover of the Czech Republic. Alternative II – used by the European Central Bank – comprises only four commodity groups (SITC groups 5–8) of the Czech Republic's foreign trade.

Data sources: CNB exchange rate list, CZSO publications on the Czech Republic's foreign trade.

The real effective exchange rate of the koruna (REER) is one of the indicators of the country's international competitiveness and is generally understood to mean various levels of relative prices or costs expressed in a certain currency. In this respect, REER values above 100 signify a downward trend in the country's competitiveness relative to the base period, whereas an REER below 100 means rising competitiveness of the country relative to the base period (2015).

Among the various methods used to calculate the REER, the weighted geometric average of the ratio of the nominal exchange rate index to the price differential is the most widely used, with the weights given by the shares of the nation's largest trading partners in trade turnover.

The real effective exchange rate of the koruna comprises the consumer prices and industrial producer prices of 12 countries outside the euro area plus all euro area countries. Euro area countries are treated as a single currency and cost area in the calculations. The number of euro area countries corresponds

to the current situation. The structure of the countries and their weights are identical to those used to calculate the nominal effective exchange rate of the koruna. In the first alternative, the weights relate to the overall trade turnover, whereas in the second alternative the weights relate only to the turnover in SITC groups 5–8.

Data sources: Price indices from ECB statistics, nominal exchange rate indices from CNB calculations.

Formula for calculating the real effective exchange rate:

$$REER_t = 100 \times \prod_{i=1}^n \left( \frac{S_{it}^*}{P_{it}^*} \right)^{w_i^*}$$

7

where  $S_{it}^*$  – basic index for the domestic currency vs. the currency of the  $i$ -th trading partner in period  $t$

$P_{it}^*$  – ratio of the basic price index of the  $i$ -th trading partner in period  $t$  to the Czech basic price index in period  $t$ ; the base year is the same as the base year used for calculating  $S_{it}^*$

$w_i^*$  – normalised weights of the currency of the  $i$ -th trading partner

**Table 7-19 Exchange rates of major currencies**

The average annual exchange rates of foreign currencies against the koruna are calculated from the daily fixings in the exchange rate list issued by the CNB.

\* \* \*

More detailed surveys and current data on monetary statistics and balance of payments statistics can be found on the CNB websites at:

- [www.cnb.cz/en/statistics/index.html](http://www.cnb.cz/en/statistics/index.html)