



HARMONIZED MONETARY AND BANKING STATISTICS OF THE NATIONAL BANK OF SLOVAKIA

BALANCE SHEET STATISTICS OF MONETARY FINANCIAL INSTITUTIONS AS A BASIS FOR CALCULATING MONETARY AGGREGATES UNDER THE METHODOLOGY OF THE EUROPEAN CENTRAL BANK

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Continued from Issue 9/2006

The aim of this article is to present the methodology with which the aggregated and consolidated balance sheets are created for the sector of monetary financial institutions, and to show their importance as a source of information for the compilation and calculation of monetary aggregates in accordance with the requirements of the European Central Bank.

4. Aggregated and consolidated balance sheets of the monetary financial institutions (MFI) sector

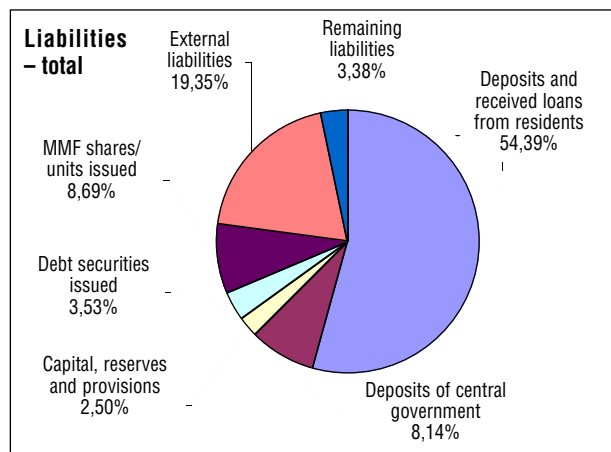
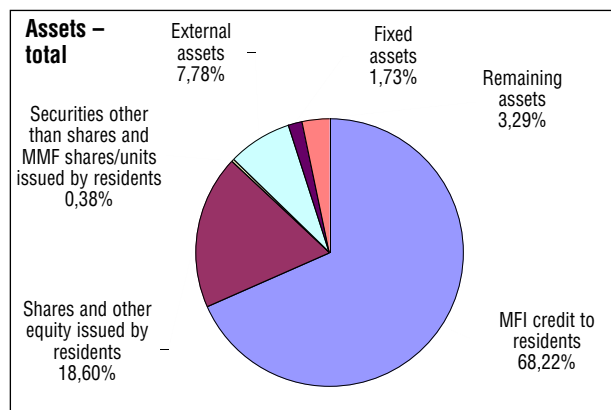
Monetary aggregates and counterparts of the M3 monetary aggregate are compiled on the basis of a consolidated balance sheet. The compilation of an aggregated balance sheet is a precondition for the production of a consolidated balance sheet.

Both balance sheets use as a source the monthly data reported by MFIs in the required category breakdowns of asset and liability instruments, maturities, currencies, and sector counterparts. It is required to compile balance sheet statistics for the balances at the end of the reference (reported) period, being every month and quarter, and to compile balance-sheet flow statistics.

The aggregated balance sheet of the euro area represents the sum of its 12 Member States' national statistical balance sheets for the MFI sector. The aggregated balance sheet may therefore be compiled separately for both the Eurosystem¹ (sum of the balance sheets of the national central banks of euro area Member States and the ECB balance sheet) and for "other MFIs"² (sum of the 12 aggregated balance sheets for the sector of other MFIs). It is therefore logical that at the national level of each country, the aggregated balance sheet represents the sum of all the statistical balance sheets in which MFIs report monthly data in the required category breakdowns of asset and liability instruments, maturities, currencies, and counterparts.

Individual asset and liability items are reported in the breakdown according to the institutional sectors to which they belong (see Part 6 and the sector breakdown of counterparts). In order to determine the actual volumes in the individual liability categories of the money-issuing

Chart 5 Aggregated balance sheet of the MFI sector excluding the NBS (June 2006)



sector, the aggregated balance sheet must exclude positions between MFIs. Consolidation, for the purposes of monetary statistics, means netting out inter-MFI positions (transactions), and the consolidated balance sheet is therefore produced as follows:

- Deposits and loans from MFIs (liabilities) less claims against MFIs (assets);
- Currency in circulation issued by the NBS less cash holdings of MFIs;

¹ Comprising the central banks of the euro area Member States and the ECB.

² Comprising the institutional sector S.122 (according to ESA 95), in particular, credit institutions and money market funds.



- Liabilities arising from issued debt and equity securities less the amount of such instruments on side of MFI-owned assets.

The compilation of the MFI balance sheet at the euro area level is shown in the following scheme:

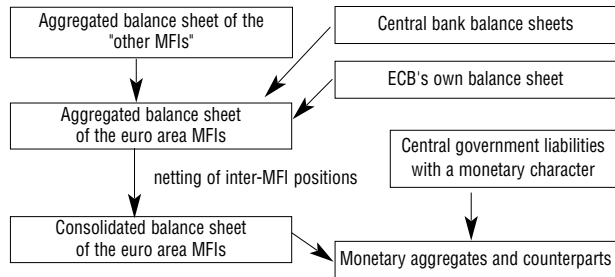


Table 4 Schematic consolidated balance sheet of the MFI sector

Assets	Liabilities
1. Credit* to residents	1. Currency in circulation
2. Shares and other equity	2. Deposits of central government
3. External assets	3. Deposits of other general government and other residents
4. Fixed assets	4. Money market fund shares/units
5. Remaining assets	5. Debt securities issued
	6. Capital and reserves
	7. External liabilities
	8. Remaining liabilities

*In the consolidated balance sheet, credit includes data for loans and debt securities which were issued by residents other than the MFI sector and are held by the MFI sector.

Loans comprise loans and deposits provided to residents other than the MFI sector, and non-negotiable securities.

The main functions of both balance sheets (aggregated and consolidated) can be summarized as follows:

- The liability side of the consolidated balance sheet is used as a basis for calculating the monetary aggregates (M1, M2, M3). The arrangement of the items and the specification of their breakdown enables the analysis of M3 and its counterparts (all other items on the asset side and liability side apart from items included in M3).

- The aggregated balance sheet of the MFI sector provides information on inter-MFI positions in the domestic field, the euro area, and the rest of the world.

- Based on the breakdown of items according to the original (contractual) maturity period, currencies, and the sector breakdown of counterparts, both balance sheets provide information for comparative analyses and an understanding of the monetary transmission mechanism.

- The balance sheets of each bank serves as a basis for calculating its reserve base and determining the minimum reserve requirements.

The information derived from these balance sheets also has its limitations:

- The accounting entry for a given fact that is a basis for the compilation of the consolidated balance sheet insufficiently explains the causal relationship between counterparts and the M3 aggregate.

- The balance sheet records the financial position of the MFI sector only at a certain moment in time.

- The aggregated balance sheet does not capture, for example, off-balance-sheet transactions, transactions between non-financial corporations, the government, households, etc. In order to capture these other financial flows, it is necessary to have a supplementary and wider collection of information on flows in the economy.

Details of the compilation methodology for balance sheet statistics:

- Loans and deposits are reported at nominal value.³
- The balance sheet items are recorded in gross terms, i.e. with provisions recorded. Provisions, which represent a temporary reduction in the value of assets, are classified under the item "Capital and reserves".⁴

- Accrued interest receivable on loans and payable on deposits is reported under the item "Other assets" or "Other liabilities", while loans and deposits are not reported on an accrual basis.⁵

- Overnight deposits are understood to mean non-time deposits, daily deposits or daily loans to be repaid by close of business or on the day following that on which the deposit or loan was granted.

- The criterion according to which securities are reported is their negotiability. Negotiable securities admitted to an official listing on a stock exchange or other organized market are reported under the balance sheet item "Securities other than shares and MMF shares/units." Non-negotiable securities, meaning securities other than shares and MMF shares/units, which are not admitted to an official listing on a stock exchange or other organized market are included on the balance sheet under either the asset item "Credit" or liability item "Deposits".

- Fixed assets are reported less depreciation for the permanent decline in the value of the assets.

5. Counterparts of the M3 monetary aggregate in the consolidated balance sheet of the MFI sector

The counterparts of the M3 monetary aggregate consist of those asset and liability items on the consolidated balance sheet of the MFI sector which are not included in the M3 monetary aggregate. They are arranged in such a way as to allow for their analysis. The derivation of M3

³ A clear requirement laid down by Regulation ECB/2004/21, amending Regulation ECB/2001/13.

⁴ Under the ECB's approach, provisions represent MFIs' internal funds accumulated from non-distributed profits.

⁵ The reason was both conceptual and practical. The ECB is not, from the analytical view, convinced that there is merit in including accruals in the monetary aggregates. Moreover, most interest payable on deposits and receivable on loans is paid on a quarterly or monthly basis, which means that the seasonally-adjusted data would be de facto recorded on an accrual basis.



and counterparts from the MFI consolidated balance sheet is shown schematically in Table 5:

Table 5

Assets	Liabilities
Credit to residents (including securities issued by residents)	M3 ⁶
Net external assets	Longer term financial liabilities
Remaining assets (including fixed assets)	Remaining liabilities

Using the balance sheet identity, it is possible to derive the monetary aggregate M3 as follows:

$$M3 = \text{credit to residents} + \text{net external assets} - \text{longer-term financial liabilities} + \text{other counterparts}$$

parts of M3 is credit to general government⁷ and to the private sector,⁸ also identified in the monetary summary as financing of general government and financing of the private sector.

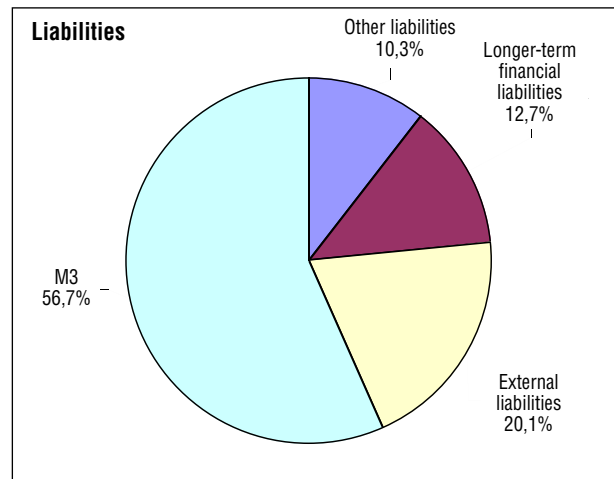
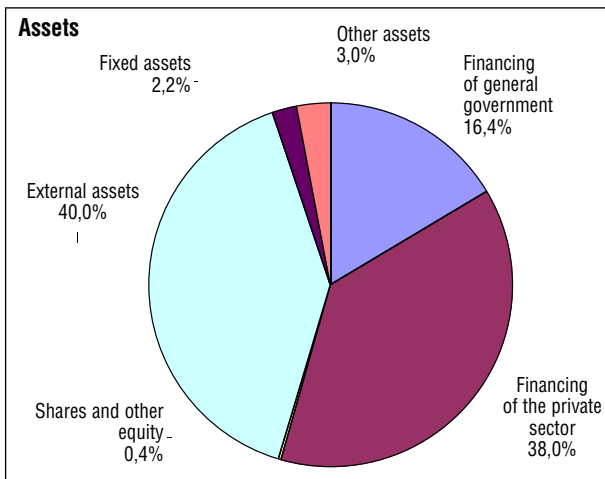
Net external assets are defined as external assets held by MFIs less external liabilities of MFIs.

External assets include foreign-currency cash holdings of MFIs, holdings of securities issued by non-residents and held by MFIs, credit to non-residents (including banks), gold, and special drawing rights (SDRs).

External liabilities include deposits and received loans from non-residents, and the counterpart of SDRs.

Longer-term financial liabilities are deposits and received loans with an agreed maturity of over two years, deposits redeemable at a period of notice of over three months,

Chart 6 Consolidated balance sheet of monetary financial institutions (July 2006)



The counterparts are defined in the following way:

Credit to residents is defined as loans granted to non-MFI residents + securities held by the MFI sector but issued by non-MFI residents.

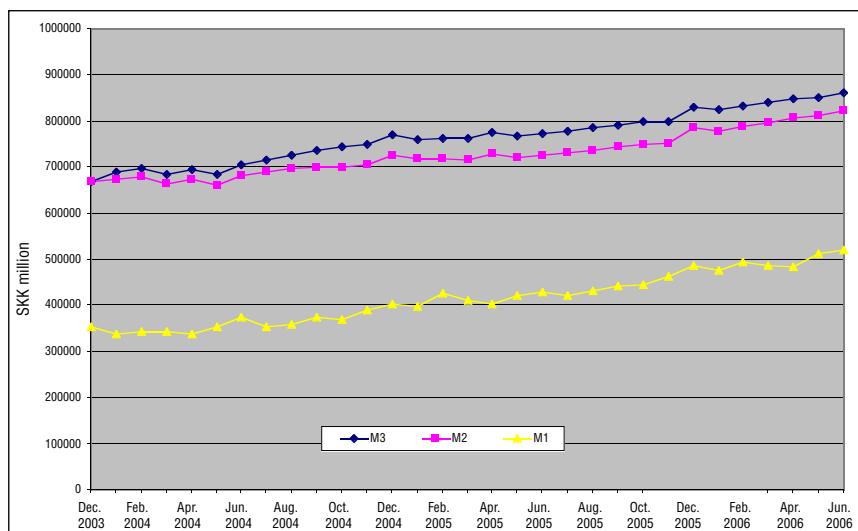
As securities can be seen as an alternative source of funds relative to loans, this counterpart provides more accurate information on the amount of financing supplied by the MFI sector to the economy.

The most important counter-

securities with a maturity of over two years issued by the MFI sector, plus capital, reserves and provisions.

Longer-term financial liabilities are excluded from the definition of M3 as they are considered more as port-

Chart 7 Monetary aggregates – stocks



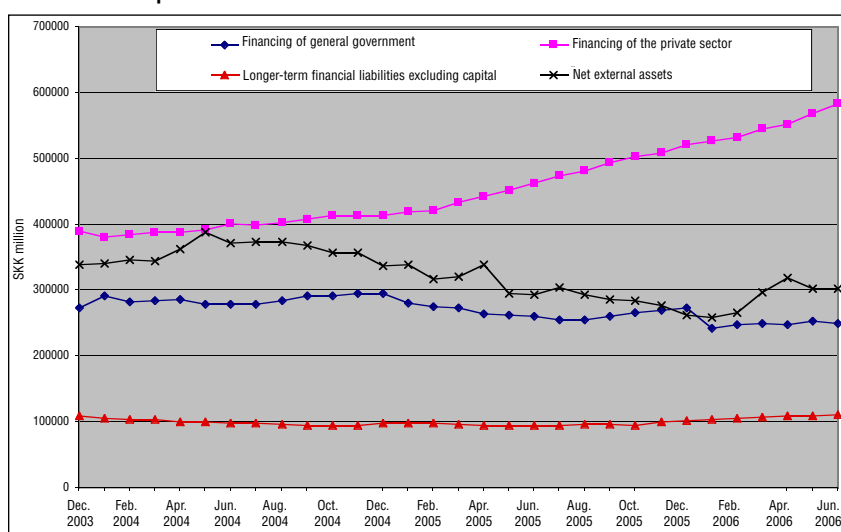
⁶ Including deposits of the central government with a monetary character.

⁷ According to ESA 95, the general government sector constitutes sector S.13.

⁸ The private sector comprises sectors S.11 (non-financial corporations), S.14 (households), S.15 (non-profit institutions serving households), S.123 (other financial intermediaries), S.124 (financial auxiliaries), and S.125 (insurance corporations and pension funds).



Chart 8 Counterparts of M3 – stocks



folio instruments used for savings than as means of transaction.

Other counterparts comprise the remaining assets (including fixed assets) and remaining liabilities (including deposits that the central government holds with the MFI sector and the consolidated surplus).

6. Reporting of balance sheet items according to the categories of financial instruments, institutional sectors and currencies

As regards the reporting of monthly balance sheet statistics for the compilation of monetary statistics, the ECB requires them figures to be broken down in terms of instrument/maturity categories, currencies and counterparts. The different requirements for the asset and liability sides of the aggregated balance sheet are shown in Table 6 and Table 7. The said breakdown represents the minimum reporting requirements of the ECB,⁹ with each central bank to adapt the details of the breakdown in accordance with the reporting system at its national level.

The monthly MFI balance sheet includes data on the counterparts of residents of the respective country, in which the reporting MFI also has its registered office, and on non-residents. Financial instruments held by MFIs themselves (S.121 and S.122), central government (S.1311) and non-residents (S.2) are excluded from the monetary aggregates, and therefore the most detailed data are provided for the counterparts that form the money-holding

⁹ Regulation ECB/2001/13, Part 2 and Table 1.

¹⁰ DKK, SEK, GBP, USD, JPY, CHF; in accordance with Regulation ECB/2003/10, amending Regulation ECB/2001/13, euro area Member States additionally report the currencies of new EU Member States if they have significant transactions with them. This breakdown does apply to euro area non-Member States; as far as euro area Member States are concerned, the residents sector is understood to include all EMU countries.

sector (S.1312, S.1313, S.1314, S.11, S.14, S.15, S.123, S.124, and S.125).

All the relevant balance sheet items are reported on a monthly basis in euro and in another foreign currency, and in the case of non-euro area Member States, also in the domestic currency. It is additionally required to provide quarterly data broken down into the main foreign currencies,¹⁰ which are used to eliminate the effect of exchange rate fluctuations in the calculation of net transactions.

Table 6 Instrument/maturity categories

Assets	Liabilities
1. Cash	8. Deposits / loans received
2. Loans	up to 1 year
up to 1 year	over 1 year
over 1 year and up to 5 years	8.1. Overnight deposits
over 5 years	8.2. Deposits with agreed maturity
3. Securities other than shares	up to 1 year
up to 1 year	over 1 year and up to 2 years
over 1 year and up to 2 years	over 2 years
over 2 years	8.3. Deposits redeemable at notice
4. Money market fund shares/units	up to 3 months
5. Shares and other equity	over 3 months
6. Fixed assets	of which over 2 years
7. Remaining assets	8.4. Repo operations
	9. Money market fund shares/units
	10. Debt securities issued
	up to 1 year
	over 1 year and up to 2 years
	over 2 years
	11. Capital, reserves and provisions
	12. Remaining liabilities

7. Reserve base calculation methodology for the calculation of minimum reserve requirements

Data reported within the structure and the methodology of balance sheet statistics by individual credit institutions are also used for the calculation of the minimum reserve requirements that these credit institutions are required to meet.

For this purpose, the ECB requires the following data on financial instruments to be reported in the breakdown towards residents, towards non-residents,¹¹ and in the currencies constituting the reserve base:

¹¹ This means that the branch of a foreign bank operating in the territory of Slovakia will consider the positions towards its head office, or towards other branches of its head office located outside the territory of Slovakia, as positions towards non-residents, and these will be included in the reserve base for the calculation of minimum required reserves.



- Overnight deposits
- Deposits with agreed maturity – up to 2 years
- Deposits redeemable at notice – up to 2 years
- Securities issued – with maturity of up to 2 years

Table 7 Sector breakdown of counterparts

Assets	Liabilities
A. Domestic residents	A. Domestic residents
MFIs/banks	MFIs/Banks
of which the NBS	General government
General government	Central government
Central government	Regional state government
Regional state government	Local government
Local government	Social security funds
Social security funds	Other resident sectors
Other resident sectors	Other financial intermediaries, etc.
Other financial intermediaries, etc.	(S.123 + S.124)
(S.123 + S.124)	Insurance corporations and pension
Insurance corporations and pension	funds (S.125)
funds (S.125)	Non-financial corporations (S.11)
Non-financial corporations (S.11)	Households, etc. (S.14 + S.15)
Households, etc. (S.14 + S.15)	B. Non-residents
B. Non-residents	EMU – Monetary Union Member States
EMU – Monetary Union Member States	banks
Rest of the world	Other bodies of general government
	Others
	Rest of the world

8. Calculation of the M3 reference value annual growth rate. Financial stocks and flows

As was mentioned in the introduction, the reference value for M3 is the monetary aggregate's annual growth rate.

To calculate this value, it is necessary to know the net value of transactions for the respective reference month and the respective stocks, and to calculate the rates of growth (in %) as indices, in accordance with the following formula:

$$I_t = I_{t-1} \times \left[1 + \frac{Flow_t}{Stock_{t-1}} \right]$$

The annual growth rate is then calculated on the basis of the indices as follows:

$$a = \left[\frac{I_t}{I_{t-1}} - 1 \right] \times 100$$

The base year used by the ECB for the calculation of the index is December 2001 ($I_{dec2001}=100$). The NBS, however, has set December 2003 as the base (100) for the calculation of annual growth rate, owing to the incompleteness of the time series of harmonized data for past years (Charts 9 and 10).

The compilation system for monetary and financial statistics is a system in which changes in the stocks¹² of financial assets and liabilities take full account of the flows recorded between individual periods.¹³ We identify

two types of economic flows: transactions and other changes. Transactions are financial flows that arise, by mutual agreement between institutional units, from the creation, liquidation, or change in ownership (sale, transfer, etc.) of financial assets or liabilities. Other changes (non-transactions) comprise all economic flows other than transactions, namely:

(i) Reclassifications and other changes – representing all changes in stocks which arise from changes in the statistical reporting group (e.g. the establishment of a new bank, the closure of an existing bank), changes in the classification of assets and liabilities (in maturities, sectors, balance sheet items), from the correction of reporting errors, from changes in structure (acquisitions, mergers);

(ii) Exchange rate changes – change in the value of assets and liabilities, issued in a foreign currency, caused by movement in the exchange rate between the Slovak koruna and foreign currencies. Banks will not notify the NBS of the effect that currency rate changes have on individual balance sheet items;

(iii) Revaluations of negotiable financial instruments and write-offs of claims – changes in the valuation of negotiable securities

caused by changes in their prices (excluding the effect of exchange rate changes) or changes caused by write-offs of loans.

In compiling statistics of net flows, i.e. in reporting actual financial transactions between banks and other economic sectors during the current reference period, the NBS excludes from the stock data such non-transactions as reclassifications and changes arising from the valuation or write-off of loans. When the ECB calculates net flows, it even adjusts for changes arising from exchange rate differences. In the ECB's methodology, it is therefore possible to express the actual flow (net flow) as the difference in month-end stocks adjusted for non-transaction changes, as follows:

$$Flow_t = (S_t - S_{t-1}) - Rc_t - Rv_t - Ec_t$$

where,

$Flow_t$ = the actual flow in the current month,

S_t = the stock reported in the current reference month,

S_{t-1} = the stock reported in the previous reference month

Rv_t = revaluations and write-offs of loans in the current reference month

¹² Stocks represent the value of MFI assets and liabilities at a given moment in time.

¹³ System of National Accounts (SNA 93).

¹⁴ Monetary and Financial Statistics Manual published by the International Monetary Fund, Chapter V – Stocks, Flows and Accounting Rules.



Rc_t = reclassification in the current reference month
 Ec_t = exchange rate changes in the current reference month

Conclusion

The conduct of monetary policy in the euro area is also dependent on the harmonization of the data reported in the field of monetary and banking statistics. In accordance with ECB requirements, each central bank compiles an aggregated balance sheet for the monetary and financial institutions sector at a monthly and quarterly frequency. Data required for the compilation of monetary aggregates and counterparts in the harmonized methodology and for the calculation of the annual growth rates are based on the stock data of financial assets and liabilities, on the reporting of non-transactions, and on the calculation of net flows.

The Statistics Department of the NBS has since 2002 been working systematically to introduce the new metho-

dology and to report the data required by the ECB. Estimates for the euro area's main monetary aggregates are available for the years back to 1980. The NBS compiles a time series from January 2003 for aggregated and consolidated balance sheets, monetary aggregates and counterparts.

Further information on this subject may be found on the NBS website at: <http://www.nbs.sk/BANKY.INDEX.HTM#HMBS> or on the ECB website at: <http://www.ecb.int/stats/money/aggregates/aggr/html/index.en.html>.

Bibliography

1. The stability-oriented monetary policy strategy of the Eurosystem, January 1999, Monthly Bulletin of the ECB.
2. The balance sheets of the Monetary Financial Institutions of the euro area in early 1999, August 1999, the Monthly Bulletin of the ECB.
3. Euro area monetary aggregates and their role in the Eurosystem's monetary policy strategy, February 1999, the Monthly Bulletin of the ECB.
4. Protocol No 18 on the Statute of the European System of Central Banks and of the European Central Bank, Chapter II Objectives and Tasks of the European System of Central Banks, Article 5 Collection of Statistical Information.
5. Council Regulation (EC) No 2533/98 of 23 November 1998 concerning the collection of statistical information by the European Central Bank (Official Journal of the European Communities L 318 of 27.11.1998, pp. 0008-0019) as amended.
6. Regulation (EC) No 2423/2001 of the European Central Bank (ECB/2001/13) of 22 November 2001 concerning the consolidated balance sheet of the monetary financial institutions sector (OJ of the EC L 333 of 17.12.2001, pp. 0001-0046) as amended.
7. Guideline of the European Central Bank (ECB/2003/2) of 6 February 2003 concerning certain statistical reporting requirements of the European Central Bank and the procedures for reporting by the national central banks of statistical information in the field of money and banking statistics (OJ of the EC L 241 of 26.09.2003, pp. 0001-0460) as amended.
8. Council Regulation (EC) No 2223/96 of 25 June 1996 on the European system of national and regional accounts in the Community (OJ L 310, 30.11.1996, pp. 0001-0469) as amended.

Chart 9 Monetary aggregates – annual growth rates

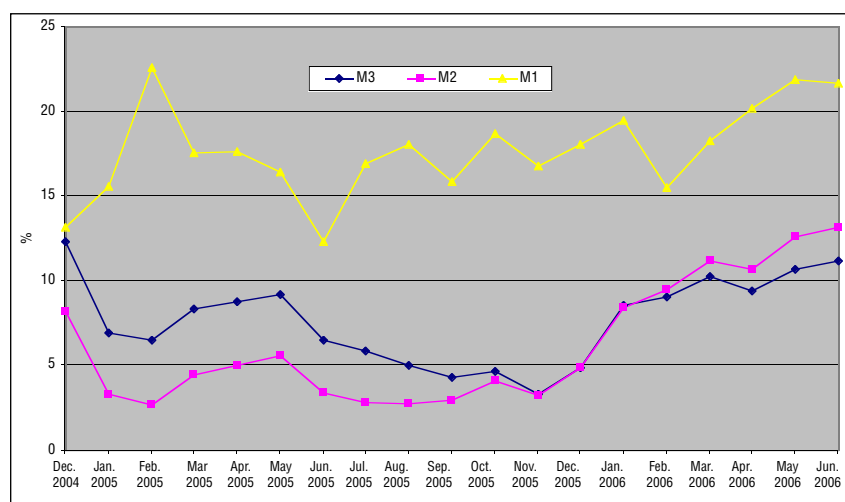


Chart 10 Counterparts of M3 – annual growth rates

