Euro area monetary aggregates and their role in the Eurosystem s monetary policy strategy

The primary objective of the Eurosystem, consisting of the European Central Bank (ECB) and the national central banks (NCBs) of the 11 Member States which have adopted the euro, is to maintain price stability. As there is wide agreement that the development of the price level in the medium to long term is a monetary phenomenon, developments in the amount of money held by the public may reveal useful information about future price movements and thereby offer an important compass for the conduct of monetary policy. In addition, analysis of monetary aggregates can contribute to the general assessment of developments in the financial system and the broader economy.

A monetary aggregate can be defined as the sum of currency in circulation plus the outstanding amounts of certain liabilities of financial institutions which have a high degree of moneyness or liquidity in a broad sense. The Eurosystem has defined a narrow (M1), an intermediate (M2) and a broad aggregate (M3). These aggregates differ with respect to the degree of moneyness of the assets included. According to the analysis conducted at the ECB and by its predecessor, the European Monetary Institute, broad euro area monetary aggregates might be less controllable in the short term but have more favourable properties than narrow ones in terms of their stability and their information content regarding price developments in the medium term. The monetary policy strategy of the Eurosystem requires identification of a monetary aggregate which is a stable and reliable indicator of inflation over the medium term. Therefore, the Governing Council of the ECB has decided to give the broad monetary aggregate M3 a prominent role in the monetary policy strategy by announcing a reference value for its annual growth rate.

1 The importance of monetary aggregates

The information content of monetary aggregates

The primary objective of the Eurosystem is to maintain price stability. Monetary policy, however, cannot directly control euro area price developments, but has to operate through a complex transmission process. This process normally involves the financial system, financial markets and the real economy. It is characterised by several channels of monetary transmission, each having long, variable, and not fully predictable time lags between monetary instruments and prices. In consequence, monetary policy has to analyse the outlook for future price developments and to assess carefully the timing and magnitude of the effects which monetary policy actions have on future prices. To this end, central banks analyse and monitor a number of monetary, financial and other economic indicators that help to provide a more accurate assessment of the economic environment, the outlook for future price developments and the transmission of monetary policy measures.

Among the variables that are useful in this respect, money plays a key role. Consequently, the Governing Council of the ECB has decided that money will be accorded a prominent role in the monetary policy strategy of the Eurosystem. This role was signalled by the announcement of a reference value for the growth of a broad monetary aggregate by the Governing Council in December 1998 (see the article The stability-oriented monetary policy strategy of the Eurosystem in the January 1999 edition of the Monthly Bulletin of the ECB).

Monetary developments can reveal useful information about future price developments and thereby offer an important compass for the conduct of monetary policy. There is broad consensus, based on substantial empirical evidence, that the development of the price level is a monetary phenomenon in the medium to long term. In particular, increases in prices are normally closely linked to rates of monetary growth in excess of the real growth capacity of the economy over the medium term. Moreover, the historical experience of central banks in Europe and beyond demonstrates that it is important for the success of monetary policy to carry out a thorough analysis of monetary aggregates and the information they contain.

Apart from revealing information about future price developments, such investigations play an important role in the general assessment of the economy. Monetary aggregates and their counterparts are normally determined by variables measuring economic activity and wealth, and by interest rates or their spreads. Given that the reaction of monetary aggregates to specific shocks may depend on their asset composition, an analysis of different monetary aggregates can contribute to a better understanding of developments in the banking sector, financial markets and the broader economy. Monitoring monetary developments helps to identify the nature of shocks hitting the economy and, thus, contributes to the assessment of overall economic developments.

While broad monetary aggregates normally contain information for price developments in the medium to long term, this link may be distorted by a variety of special factors in the short term. Month-to-month growth rates of monetary aggregates do not give an unambiguous and clear signal regarding future price developments. Such distortions may result from shocks that affect the demand for money, e.g. institutional changes in the banking system, financial innovation, changes in taxes and reserve requirements or the use of the currency in other countries. It is therefore important to distinguish, as far as this is possible, between changes in monetary aggregates which are caused by special factors, and those changes which signal risks to price stability. The leading indicator properties of money with regard to prices may also be undermined in the short term by shocks directly affecting the price level, which stem, for example, from changes in indirect taxes or regulated prices or from commodity price shocks.

Against this background it is essential to base the analysis of monetary aggregates on advanced analytical methods and a good understanding of those economic and institutional factors which may have an impact on the relationship between money, real activity, interest rates and prices in the short term. This enables central banks to assess and estimate distortions and to use the information content of monetary aggregates in the most effective way.

The role of central banks

In addition to the empirical observation that money is closely linked to price movements over the medium term, there are conceptual and institutional reasons pointing to the importance for the Eurosystem of monitoring monetary developments. Central banks are institutions that create money in the most liquid form, i.e. currency and central bank deposits held by credit institutions. In this respect, central banks have a monopoly. This central bank money, the so-called base money , is the only asset that simultaneously performs both a payment and a settlement function. The Eurosystem not only has a monopoly on issuing banknotes with legal tender status in the euro area, it also requires credit institutions to hold minimum reserves, which, in turn, creates an additional demand for central bank money from the financial sector.

Central banks, owing to their monopolistic supply position, can directly influence the price (or opportunity cost) of holding base money, namely the short-term market interest rate. They do so by providing liquidity in the form of base money to credit institutions at policy-determined interest rates. The creation of bank deposits and other monetary instruments is in turn related to the availability of central bank money and the level of official central bank interest rates. Through these channels, the need for central bank money provides the Eurosystem with leverage for influencing the expansion of the money stock as a whole.

Base money is, however, very volatile in the short term and not a reliable indicator of future inflation. The focus of monetary policy is therefore typically on broader aggregates. In the case of the euro area these consist of currency in circulation and certain liabilities of Monetary Financial Institutions (MFIs; see Box 1).

Box 1

Monetary Financial Institutions (MFIs)

The concept of Monetary Financial Institutions (MFIs) was developed by the European Monetary Institute (EMI) in co-operation with the national central banks (NCBs) in the context of the preparation for the single monetary policy. MFIs comprise three main groups of institutions. The first are central banks. The second are resident credit institutions as defined in Community law. These are defined as "an undertaking whose business is to receive deposits or other repayable funds from the public (including the proceeds arising from the sales of bank bonds to the public) and to grant credit for its own account". The third group consists of all other resident financial institutions whose business is to receive deposits and/or close substitutes for deposits from entities other than MFIs and, for their own account (at least in economic terms), to grant credits and/or to make investments in securities. This group comprises mostly money market funds (MMFs).

In order to identify the third group of MFIs, the ESCB has defined the term "close substitutes for deposits" with regard to liquidity characteristics. This definition combines the characteristics of transferability, convertibility, certainty and marketability, and has regard, where appropriate, to the term of issue. Specifically, "close substitutability for deposits" is assessed on the basis of the following criteria:

- "transferability" refers to the possibility of mobilising funds placed in a financial instrument by using payment facilities such as cheques, transfer orders, direct debits or similar means;
- "convertibility" refers to the possibility and the cost of converting financial instruments into currency or transferable deposits;
- "certainty" means knowing the liquidation value of a financial instrument in terms of the currency precisely in advance; and
- "marketability" refers to securities quoted and traded regularly on an organised market.

The Eurosystem establishes and maintains a list of MFIs for statistical purposes. The population of MFIs constitutes the actual reporting population for compiling the consolidated balance sheet of the MFI sector of the euro area. However, NCBs may grant derogations to small MFIs, provided that the MFIs which contribute to the monthly consolidated balance sheet account for at least 95% of the total MFI balance sheet in the respective participating Member State.

2 Definition of euro area monetary aggregates

The starting-point for the definition of euro area monetary aggregates is the consolidated balance sheet of the MFI sector (see Table 1). In general, the appropriate definition of a monetary aggregate largely depends on the purpose for which the selected aggregate is intended. Given that many different financial assets are substitutable, and that the nature and features of financial assets, transactions and means of payment are changing over time, it is not always clear how money should be defined and which financial assets belong to a certain definition of money. For these reasons, central banks usually define and monitor several monetary aggregates. These range from very narrow aggregates such as central bank money or base money, consisting of currency (i.e. banknotes and coins) and central bank deposits, to broader aggregates, which include currency, bank deposits and certain types of securities.

In defining money, both the microeconomic perspective of the individual holder of money and the empirical properties of monetary aggregates resulting from the joint behaviour of holders of money are relevant.

Table 1

Schematic consolidated balance sheet of the MFI sector for the euro area [1)]

Assets	Liabilities
1. Loans	1. Currency in circulation
2. Securities other than shares	2. Deposits of central government
3. Shares and other equities	3. Deposits of other general governments/other euro area residents
4. External assets	4. Money market fund shares/units and money market paper
5. Fixed assets	5. Debt securities issued
6. Remaining assets	6. Capital and reserves
	7. External liabilities
	8. Remaining liabilities

1) A detailed description of the instrument categories is provided in Annex 4 of the ECB publication: "The single monetary policy in Stage Three: General documentation on ESCB monetary policy instruments and procedures", September 1998.

Microeconomic criteria

Money fulfils three functions in the economy. It serves as a medium of exchange, as the unit of account and as a store of value. As a medium of exchange, money facilitates the exchange of goods and services by lowering information and transaction costs. As a unit of account for economic transactions, money facilitates the access of economic agents to information on relative prices of various goods in a convenient manner. As a store of value, money is also held for saving purposes (although the bulk of savings are held in the form of other, i.e. non-monetary assets). Money can fulfil these functions in an optimal way only if prices are stable. Thus, the share of wealth which is held by economic agents in the form of monetary assets and hence the demand for money is generally enhanced by price stability.

The better a certain asset fulfils the functions typically performed by cash, the higher its degree of moneyness. This is generally measured by the degree of liquidity (defined in a broad sense) of the asset. The lower the transaction costs (e.g. fees, taxes and, under specific circumstances, penalties) incurred when making a payment using the purchasing power embedded in the asset, and the less volatile the nominal value of the asset over time, the higher its liquidity will normally be. For example, overnight deposits have a very high degree of moneyness. By contrast, equity shares and real estate properties are far removed from money.

However, if only a narrow monetary aggregate were monitored, central banks would run the risk that close substitutes for money, e.g. short-term savings deposits, would be overlooked in their analysis of monetary developments. On the other hand, a broader definition of money might not reflect the function of money as a medium of exchange to the same extent.

Macroeconomic criteria

It is an empirical matter to identify which monetary aggregates show a close relation to important macroeconomic variables, in particular to the price level and to those interest rates that are closely influenced by monetary policy. Three main criteria can be distinguished.

Stability of money demand is given if the level of the money stock has a stable relationship with the price level, so that a central bank

can judge what rate of money growth is consistent with price stability. The usual approach is to investigate the stability of a money demand relationship, where the money stock is related to the price level and other macroeconomic variables, in particular real income and interest rates. It is useful to distinguish between long-term and short-term stability of money demand.

Money has *leading indicator properties* if the monetary aggregate contains information that will help to predict the price level in the future, when lagged effects have worked through.

Controllability of a monetary aggregate is given if its growth rate can be steered over a short time horizon by the central bank using monetary policy instruments. Controllability is particularly important if the central bank announces a target for monetary growth for which it wants to be held accountable.

Broad aggregates normally show higher stability and better leading indicator properties than narrow aggregates. This is mainly because they are less affected by substitution between various MFI liabilities. By contrast, narrow aggregates appear to be easier to control in the short term, via official interest rates, than broad aggregates. This is because many components of narrow money are not remunerated at interest rates close to the short-term market rate. These assets therefore become less attractive for investors when short-term rates rise, implying a fall in the demand for narrow money. By contrast, broad money is less controllable in the short run since many of its components are remunerated at interest rates close to short-term market rates, making the demand for it relatively interest inelastic in the short term.

The ECB s definition of euro area monetary aggregates

The ECB s definition of euro area monetary aggregates is based on the following:

(1) A harmonised definition of the *money-issuing sector*. It consists of those entities that issue liabilities with a high degree of moneyness to non-MFIs located in the euro area (excluding central government). This sector comprises MFIs resident in the euro area (see Box 1).

(2) A harmonised definition of the *money-holding sector*, which comprises all non-MFIs resident in the euro area (except central government). In addition to households, non-financial corporations and financial institutions which are not MFIs are included, as well as state and local governments and social security funds. Central governments are considered to constitute a *money-neutral sector*, with one exception: central government liabilities with a monetary character (Post Office accounts, national savings accounts and Treasury accounts) are included as a special item in the definition of monetary aggregates.

(3) The harmonised definitions of *MFI liabilities categories*. These make it possible to distinguish between MFI liabilities according to their degree of moneyness (see Box 2), while also taking into account the features of different financial systems.

Box 2

Harmonisation of euro area monetary aggregates

The reporting scheme for euro area monetary aggregates was harmonised in two main phases by the EMI and the ECB in co-operation with the NCBs of the European Union.

First phase

In the early 1990s the Committee of Governors of the Central Banks of the Member States of the European Economic Community developed a number of harmonisation proposals for national monetary aggregates in EU countries, mainly based on the degree of moneyness of the existing national instrument categories. However, this pragmatic approach had a number of drawbacks. In particular, only a limited degree of harmonisation was achieved owing to the heterogeneity of the underlying statistical definitions and classifications. Furthermore, these aggregates were still based on the national money and banking statistics. The harmonised monetary aggregates were named by adding the letter H to the code, e.g. M3H, so as to distinguish them from non-harmonised national monetary aggregates.

Second phase

The EMI carried out extensive preparatory work to harmonise money and banking statistics, resulting in the adoption of the "Statistical requirements for Stage Three of Monetary Union (Implementation Package)" in July 1996. On the basis of the statistical requirements set out in this report, the NCBs have performed comprehensive reviews of their statistical reporting systems, in particular to provide harmonised instrument/maturity and sector categories. Statistical requirements were then also extended to cover the reporting of cross-border positions within the euro area. The resulting (new) statistical system for the euro area, covering the consolidated balance sheet of the MFI sector, is based on the following two main elements: the list of MFIs for statistical purposes (see Box 1) and a detailed specification of the statistical information reported by these MFIs at monthly and quarterly intervals. This statistical information is collected from the MFIs by the NCBs according to national procedures and on the basis of harmonised definitions and classifications.

In order to derive a definition of euro area monetary aggregates from the Eurosystem's money and banking statistics, the degree of moneyness of various assets (or, from the point of view of the MFIs, liabilities) is distinguished by reference to four basic criteria (i.e. transferability, convertibility, maturity and period of notice). The criteria of "transferability" and "convertibility" are explained in Box 1. "Maturity" makes a distinction between instruments according to the time between the contract date and the redemption date, prior to which it is difficult to convert funds placed on deposit. The "period of notice" corresponds to the time between the moment the holder gives notice of his/her intention to redeem the instrument and the date on which the holder is allowed to convert the respective instrument into cash without incurring a penalty. Generally, the shorter the maturity and the period of notice, the higher the degree of moneyness of an asset.

First data from the new harmonised money and banking statistics for the whole euro area started to become available at the ECB in the summer of 1998. Further improvements in the overall quality of monetary statistics are expected in early 1999. Ongoing refinements will be aimed at taking separate account of recent developments in financial innovation.

Based on conceptual considerations and empirical studies, and in line with international practice, the Eurosystem has defined a narrow (M1), an intermediate (M2) and a broad aggregate (M3). These aggregates differ with respect to the degree of moneyness of the assets included. Table 2 shows the definitions of the euro area monetary aggregates using the definition of liabilities issued by the MFI sector (see Table 1) as well as by entities belonging to the central government sector (Post Offices, Treasuries) of the euro area. As noted above, these aggregates include only positions of residents of the euro area which are held with

Table 2

Definitions of euro area monetary aggregates

Liabilities [1]	*M1*	*M2*	*M3*
Currency in circulation	X	X	X
Overnight deposits	X	X	X
Deposits with agreed maturity up to 2 years		X	X
Deposits redeemable at notice up to 3 months		X	X
Repurchase agreements			X
Money market fund (MMF) shares/units and money market paper			X
Debt securities up to 2 years			X

1) *Liabilities of the money-issuing sector and central government liabilities with a monetary character held by the money-holding sector.*

MFIs located in the euro area. Holdings by euro area residents of liquid assets denominated in foreign currency can be close substitutes for euro-denominated assets. Therefore, the monetary aggregates include such assets if they are held with MFIs located in the euro area.

Narrow money (M1) includes currency, i.e. banknotes and coins, as well as balances that can immediately be converted into currency or used for cashless payments, i.e. overnight deposits.

Intermediate money (M2) comprises narrow money (M1) and, in addition, deposits with maturities of up to two years and deposits redeemable at notice of up to three months. Depending on their degree of moneyness, such deposits can be converted into components of narrow money, but in some cases there may be restrictions involved, such as the need for advance notification, delays, penalties or fees. The definition of M2 reflects the particular interest in analysing and monitoring a monetary aggregate that, in addition to currency, consists of deposits which are liquid.

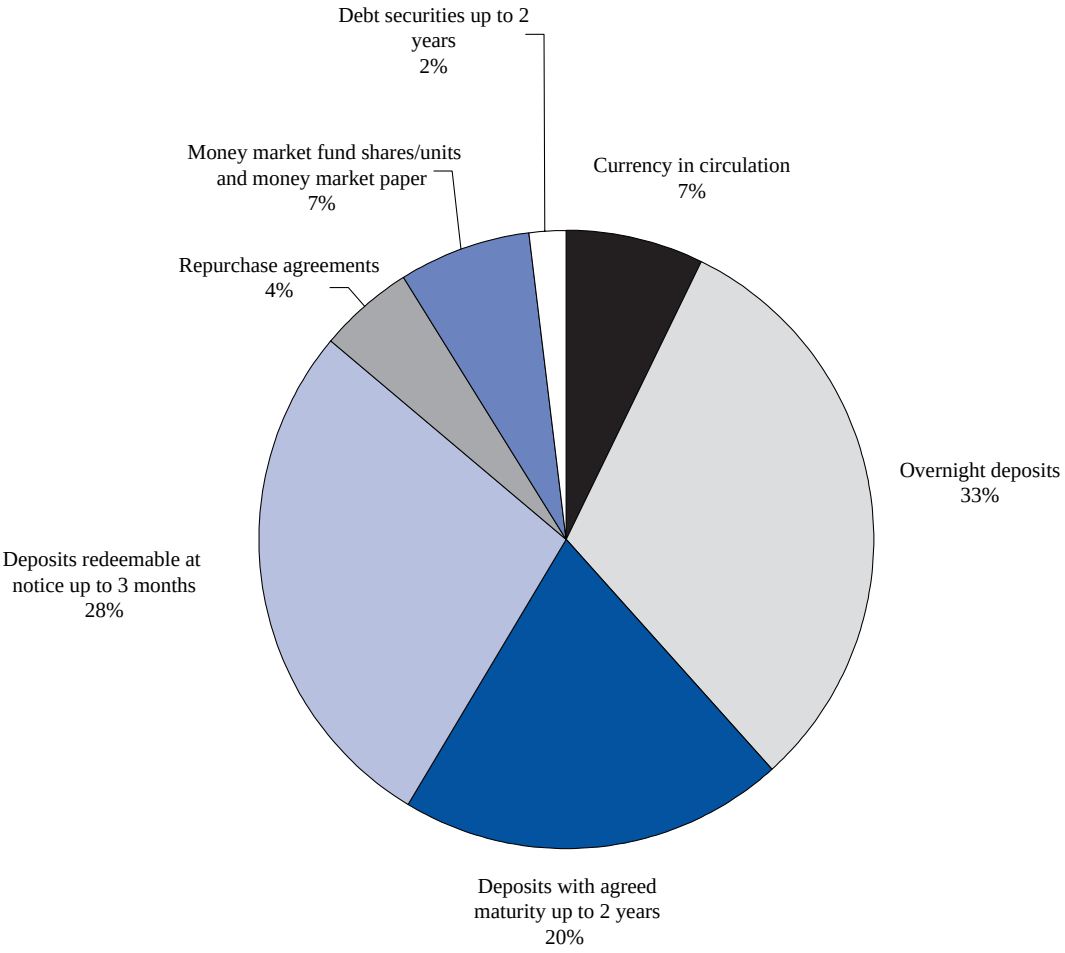
Broad money (M3) comprises M2 and marketable instruments issued by the MFI sector. Certain money market instruments, in particular money market fund (MMF) shares/units and money market paper, and repurchase agreements are included in this aggregate. A high degree of liquidity and price certainty make these instruments close substitutes for deposits. As a result of their inclusion, M3 is less affected by substitution between various liquid asset categories than narrower definitions of money, and is more stable.

With regard to the components of M3 the following shares have been calculated on the basis of December 1998 data (see Chart 1). Overnight deposits account for the largest share, namely 33% of M3. The share of deposits with agreed maturities up to two years is 20% and that of deposits redeemable at notice up to three months is 28% of M3. The share of currency in circulation is 7% and that of money market fund shares/units and money market paper is also 7%. Finally, the outstanding stock of repurchase agreements accounted for 4% of M3 and that of debt securities issued with maturities up to two years for 2%.

Chart 1

Percentage shares of the components of M3

(December 1998)



Source: ECB.
Note: Differences in totals are due to rounding.

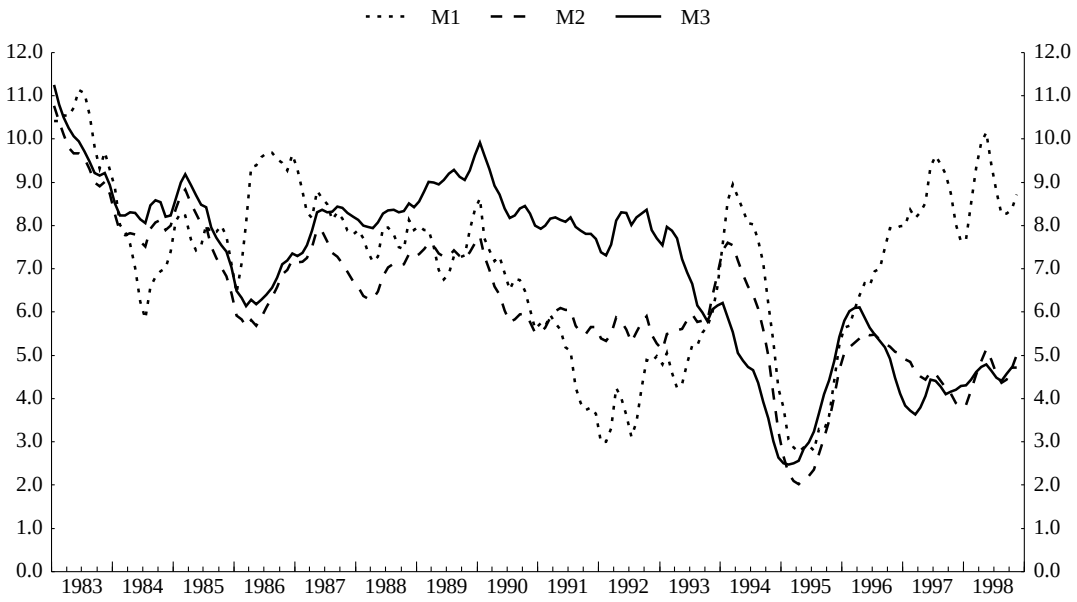
3 Assessment of historical developments of euro area monetary aggregates

As from January 1999 euro area monetary aggregates have been compiled from the consolidated balance sheet of the euro area MFI sector denominated in the single currency, the euro. This consolidated balance sheet in euro is available with the same degree of detail back to September 1997. Time series going further back in the past, which are needed to assess longer-term trends in monetary aggregates, can only be constructed on the basis of the aggregation of estimated national contributions to the corresponding euro area monetary aggregates. These estimates have to be based on national money and banking statistics that were not fully harmonised in the past (see Box 2). In the same vein, the choice of the aggregation method for linking pre-1999 data to the post-1999 euro area statistics is not straightforward, reflecting the fundamental problem that it is only from 1999 onwards that a single currency has been in place. The charts below and all other monetary statistics in this Bulletin use the irrevocably fixed conversion rates vis- -vis the euro which were determined on 31 December 1998 in order to obtain the corresponding historical series for the euro area

Chart 2

Monetary aggregates for the euro area

(annual percentage change)



Sources: National data and ECB calculations.
Note: Change from the previous year in %, smoothed by means of a three-month centred moving average.

monetary aggregates. The Annex to this article provides data and methodological notes on historical monetary series.

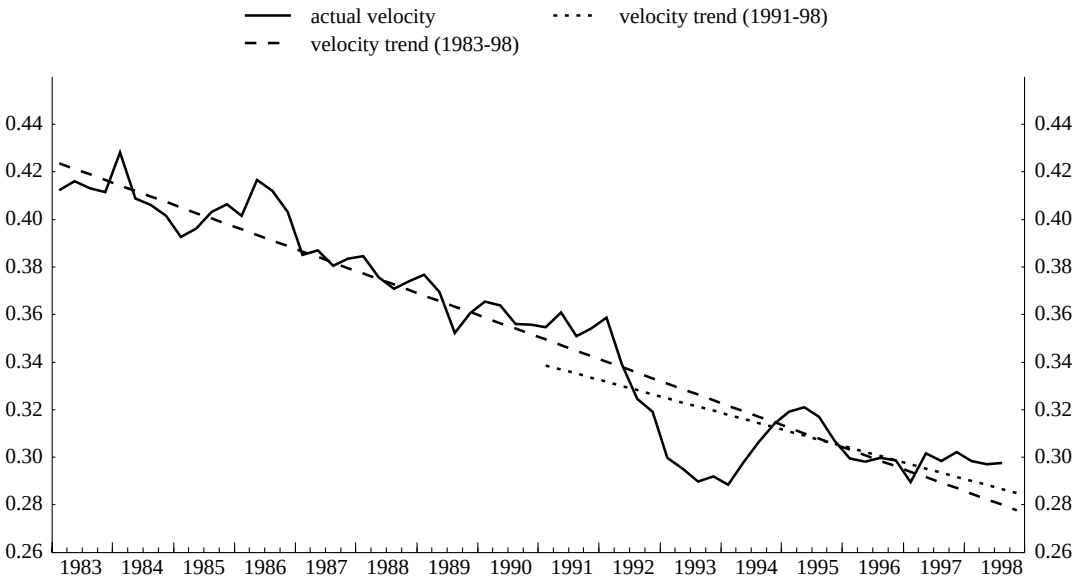
Chart 2 illustrates that broad money growth in the euro area has slowed down since 1990 and has thereby paved the way for further reductions in euro area inflation. Rapidly growing volumes of MMF shares/units and money market paper appear to have increased the growth rates of M3 relative to M2 between 1987 and 1993; MMF shares/units and money market paper, on occasion, have accounted for substantial differences between the annual growth rates of M3 and M2. Since the mid-1990s M3 and M2 growth rates have, however, been fairly similar. Furthermore, Chart 2 demonstrates that movements in M1 are generally more volatile than those in M3. This is, inter alia, because the growth rate of narrow money is more sensitive to interest rate changes. Since end-1996, M3 growth has stabilised at rates of between 3‰ and 5%. At the same time, lower interest rates in the euro area and the improved outlook for price stability have made the most liquid assets more attractive, causing M1 growth to increase.

An important measure for the assessment of the behaviour of monetary aggregates over longer periods is the velocity of circulation. The income velocity of M3 is defined as the ratio between the nominal gross domestic product (GDP) and (nominal) M3. Over the last two decades M3 velocity has shown a relatively smooth downward trend (see Chart 3); over this period M3, on average, grew at around 1% per annum faster than nominal GDP. Between mid-1992 and mid-1995 this downward trend was temporarily distorted. In this period velocity first fell sharply until end-1993 and then increased significantly over the following one and a half years. The exchange rate crises in the European Monetary System (EMS), substantial movements in interest rates and also special factors such as major changes in the taxation of interest income in some countries appeared to have affected monetary developments during this period.

Chart 3

M3 velocity trends for the euro area

(log levels)



Sources: Eurostat, national data and ECB calculations.
Note: Velocity is measured as the ratio of actual levels of nominal GDP to M3; seasonally adjusted data; national levels of nominal GDP have been converted to euro using the fixed conversion rates of 31 December 1998.

Notwithstanding this temporary volatility in velocity in the mid-1990s, econometric analysis of euro area monetary aggregates over the past two decades supports the view that the long-run stability of money demand holds for past developments of M3, as well as for M2. By contrast, long-run stability does not appear to exist for the narrow aggregate M1.

Furthermore, broad money growth (M3) data contain useful information for future price developments. In Chart 4 M3 growth is compared with increases of consumer price indices for the euro area, whereby M3 growth has been shifted forward by six quarters. The chart illustrates that changes in broad money under normal circumstances lead consumer price developments over the medium term.

Formal empirical analysis of leading indicator properties conducted at the ECB confirms that broad money is a better indicator of future price developments than narrow money (M1). However, as already mentioned, in the short and also in the medium term, prices may deviate from the path mapped out by monetary growth. For example, portfolio shifts in the mid-1990s, which partly reflected institutional factors, appear to have temporarily weakened the leading indicator properties of broad money.

4 The Eurosystem s reference value for the growth of broad money

In view of the favourable empirical properties of M3, the Governing Council of the ECB decided to give broad money a prominent role in the Eurosystem s monetary policy strategy. To this end, the Governing Council has announced a quantitative reference value of 4‰% per annum for the growth of this broad monetary aggregate.

The reference value is intended to help the Governing Council analyse and present the information contained in the broad monetary aggregate in a manner that offers a coherent and credible guide for monetary policy aimed at price stability.

Derivation of the reference value

As was explained in the January 1999 edition of the Monthly Bulletin, the reference value was derived in a manner that is consistent with and serves the achievement of price stability. Substantial or prolonged deviations of monetary growth from the reference value would, under normal circumstances, signal risks to price stability over the medium term.

The derivation of the reference value was based on the well-known relationship between monetary growth, inflation, real GDP growth and changes in velocity. It embodies the definition of price stability (increase in the HICP of below 2% per annum) as announced by the Governing Council of the ECB in October 1998. The derivation of the reference value was further based on medium-term assumptions regarding the trend of real GDP growth and the trend in the velocity of circulation of M3.

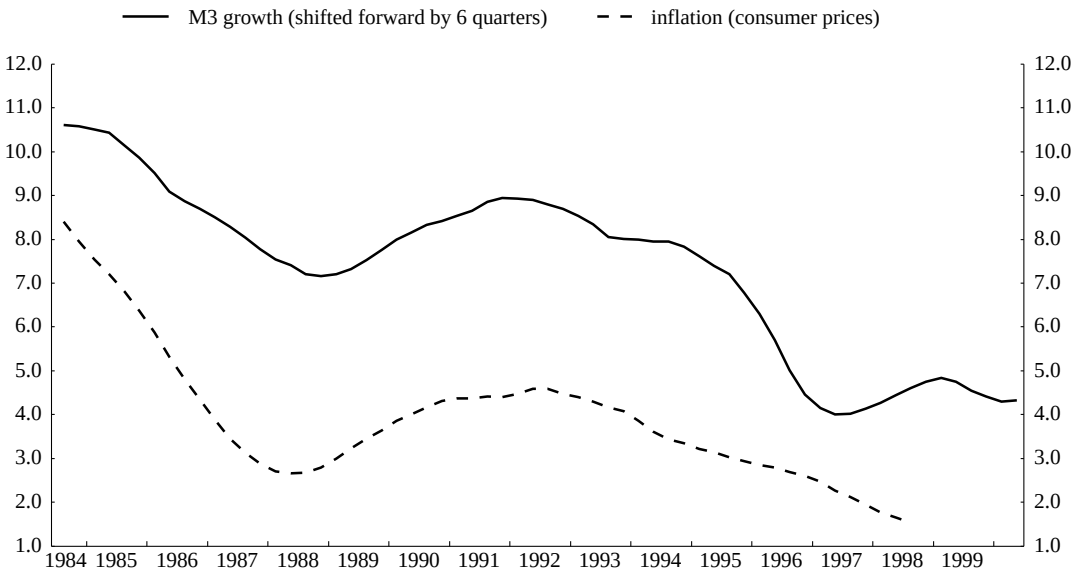
For the medium-term trend in real GDP growth for the euro area, an assumption of 2-2‰% per annum was made, in line with estimates from both international organisations and the ECB. In setting the assumption for the decline in the velocity of circulation, various approaches were applied. One approach was to base it on a trend derived from the historic evolution of velocity. This was done by looking at various sample periods and using different specifications. As a second approach, a medium-term assumption for velocity was derived by making use of estimates of long-run money demand relationships together with the assumptions for real GDP growth and prices mentioned above. It was found that the estimates of medium-term velocity trends implied by stable long-run money demand relationships are broadly in line with the range identified by various estimates of the time trend of velocity.

As can be seen from Chart 3, the estimate of the velocity trend depends on the sample period. For example, over the period 1983-98 the trend decline was around 1% per annum, whereas over more recent periods, starting around the beginning of the 1990s, the trend decline was smaller, coming closer to ‰%.

Chart 4

Longer-term trends in the money stock and prices for the euro area

(annual percentage change)



Sources: Eurostat, national data and ECB calculations.

Note: Change from the previous year in M3 and consumer prices in %, smoothed by means of an eight-quarter moving average; for the period before 1996, changes in consumer prices are derived from national consumer price indices, thereafter the HICP is used.

Against this background, and also reflecting the uncertainties related to the move to Stage Three, the Governing Council chose a range of ‰ to 1% for the trend decline in velocity, rather than a single figure.

Taking into account these assumptions for the medium-term trends in real GDP growth and velocity, and based on its intention to maintain HICP inflation for the euro area *below* 2%, the Governing Council decided to set its first reference value for M3 growth at 4½% per annum. Money growth substantially in excess of this value would tend to signal inflationary risks if the relationship between M3, prices and real GDP underlying the velocity trend decline of ‰ to 1% remains stable.

Although several of the components used in the derivation of the reference value were expressed in the form of a range, the Governing Council has decided to announce a single reference rate for monetary growth, rather than a range. Announcing a reference range might have been falsely interpreted by the public as implying that interest rates would be changed automatically if monetary growth were to move outside the boundaries of the range.

The Governing Council deliberately announced a reference value, not a target that it would intend to meet. The concept of the reference value does not entail a commitment on the part of the Eurosystem to correct deviations of monetary growth from the reference value over the short term. Interest rates will not be changed mechanistically in response to such deviations in an attempt to return monetary growth to the reference value. The fundamental idea behind the concept of a reference value is that deviations of monetary growth from the reference value will be thoroughly analysed. If monetary developments signal risks to price stability, monetary policy will normally act in order to maintain price stability.

The Governing Council analyses monetary developments in relation to the reference value on the basis of a three-month moving average of 12-month growth rates of broad money. This approach is intended to smooth out monthly fluctuations. The Governing Council will review the reference value of 4½% in December 1999 with a view to assessing whether the assumptions underpinning its derivation are still valid.

5 Concluding remarks

There is broad consensus that the development of the price level is a monetary phenomenon in the medium to long term. Consequently, the Governing Council of the ECB has decided that money will be accorded a prominent role in the Eurosystem s monetary policy strategy. This role was signalled by the announcement of a reference value for the growth rate of the broad monetary aggregate M3 of 4½% per annum by the Governing Council in December 1998. The derivation of this rate embodies the Eurosystem s definition of price stability. It is based on medium-term assumptions regarding real GDP growth and the trend decline in the velocity of circulation of M3. In order to achieve its primary objective of price stability, it is important for the Eurosystem to analyse closely the development of this aggregate against the reference value and to monitor other monetary aggregates.

Annex

Euro area monetary aggregates from 1980 to 1998

The historical time series on euro area monetary aggregates comprise M1, M2 and M3 as defined in the main article. End-of-month, non-seasonally adjusted levels for the three aggregates have been compiled starting in January 1980, with 12-month growth rates available from January 1981 onwards. In order to achieve the best possible approximation to the ECB s definition of euro area monetary aggregates, a considerable amount of estimation was necessary, particularly for earlier dates. Moreover, further work may lead to revisions to these data. These series should therefore be treated with caution.

Sources and data availability

The following statistical information provided by the NCBs was used to compile the historical series:

- Source I: *MFI balance sheet statistics*. This source comprises data collected under the new harmonised reporting system as well as best estimates of individual balance sheet items. The new reporting system is defined within the framework of the ECB Regulation of 1 December 1998 concerning the consolidated balance sheet of the Monetary Financial Institutions sector (ECB/1998/16). The balance sheets of euro area NCBs and from June 1998 the ECB are included.
- Source II: *best estimates of national contributions to the euro area aggregates*. These data take account, as far as possible, of the cross-border positions of Monetary Financial Institutions (MFIs) within the euro area. When no data are available from Source I, Source II provides the closest possible approximation to the euro area aggregates as defined by the ECB.
- Source III: *national monetary aggregates*. In some cases national and non-harmonised data have been used to fill gaps.

The use of the different sources for each euro area Member State is set out in the table below.

Table 3

Sources and periods of coverage

Country	Source I MFI balance sheet statistics	Source II Best estimates of national contributions to the euro area aggregates	Source III National monetary aggregates (national non-harmonised data)
Belgium	As from December 1996	January 1980 to November 1996	
Germany	As from January 1980		
Spain	As from January 1980		
France	As from January 1980		
Ireland	As from September 1997	December 1995 to August 1997	January 1980 to November 1995
Italy	As from December 1995	January 1980 to November 1995	
Luxembourg	As from September 1997	January 1980 to August 1997 [1]	
Netherlands	As from December 1990	December 1982 to November 1990	January 1980 to November 1982
Austria	As from November 1996 [2]	January 1980 to October 1996	
Portugal	As from January 1980		
Finland	As from January 1980		

1) Estimated by applying the EU10 growth rates.
2) Includes interpolations for the period from November 1996 to August 1997.

Compilation

The following approach has been used to provide full coverage using the best statistics available.

The complete consolidated balance sheet of the euro area MFI sector derived from harmonised statistical information on the MFI balance sheets is available from September 1997 onwards. For this period the ECB is in a position to calculate the euro area monetary aggregates according to its regular compilation procedures (see Source I). The monthly data from September 1997 onwards are those published in the section of the Monthly Bulletin entitled Euro area statistics (see Monetary and financial developments in the euro area).

For periods prior to September 1997 most NCBs were in a position to estimate the detailed breakdown as given in the ECB Regulation (ECB/1998/16). These estimates are included under Source 1. However, not all NCBs could provide figures for periods as far back as January 1980. Where the full balance sheet data were not available for a given country, Sources II or III were used. When linking the data from the different sources, consistency in levels was achieved by applying, where necessary, the annual growth rates derived from Sources II or III to the levels of M1, M2 and M3 as calculated from the full balance sheet data. In addition, some national series were adjusted for important breaks, for example the statistical impact of German unification in July 1990.

Finally, in order to aggregate the national data and calculate euro area aggregates, for the purposes of this publication the series were converted into euro by applying the irrevocable conversion rates fixed on 31 December 1998 (see main article).

Table 4

Monetary aggregates [1)]

(EUR billions (not seasonally adjusted; end-of-period stocks) and annual percentage changes [2)])

		M1		M2		M3	
		Total	Annual percentage change [2)]	Total	Annual percentage change [2)]	Total	Annual percentage change [2)]
1980	Jan.	456.6		1,139.3		1,165.5	
	Feb.	451.4		1,139.1		1,166.2	
	Mar.	460.4		1,146.3		1,176.2	
	Apr.	460.2		1,150.4		1,181.0	
	May	463.8		1,155.1		1,185.7	
	June	479.5		1,167.5		1,198.3	
	July	479.4		1,173.4		1,205.3	
	Aug.	473.4		1,176.5		1,208.4	
	Sep.	479.1		1,176.7		1,207.0	
	Oct.	478.1		1,182.9		1,212.6	
	Nov.	501.2		1,211.0		1,242.6	
	Dec.	506.4		1,249.6		1,281.4	
1981	Jan.	492.8	7.9	1,241.7	9.0	1,275.1	9.4
	Feb.	490.9	8.8	1,246.5	9.4	1,281.7	9.9
	Mar.	493.0	7.1	1,245.8	8.7	1,286.1	9.3
	Apr.	492.3	7.0	1,254.8	9.1	1,296.2	9.8
	May	501.9	8.2	1,268.4	9.8	1,311.1	10.6
	June	512.3	6.9	1,277.5	9.4	1,322.0	10.3
	July	503.8	5.1	1,278.3	8.9	1,325.1	9.9
	Aug.	501.1	5.8	1,280.1	8.8	1,328.0	9.9
	Sep.	507.7	6.0	1,285.4	9.2	1,331.8	10.3
	Oct.	505.0	5.6	1,291.2	9.2	1,337.4	10.3
	Nov.	524.6	4.7	1,311.3	8.3	1,358.9	9.4
	Dec.	534.2	5.5	1,358.4	8.7	1,406.3	9.7

Table 4 cont d

Monetary aggregates [1]

(EUR billions (not seasonally adjusted; end-of-period stocks) and annual percentage changes [2])

		M1		M2		M3	
		Total	Annual percentage change [2]	Total	Annual percentage change [2]	Total	Annual percentage change [2]
1982	Jan.	525.9	6.7	1,361.7	9.7	1,411.7	10.7
	Feb.	523.5	6.6	1,366.6	9.6	1,418.1	10.6
	Mar.	525.2	6.5	1,368.1	9.8	1,422.1	10.6
	Apr.	526.0	6.8	1,380.3	10.0	1,431.9	10.5
	May	537.5	7.1	1,392.3	9.8	1,443.9	10.1
	June	552.3	7.8	1,405.6	10.0	1,463.0	10.7
	July	547.8	8.7	1,413.8	10.6	1,472.5	11.1
	Aug.	546.4	9.0	1,422.3	11.1	1,481.5	11.6
	Sep.	553.3	9.0	1,426.6	11.0	1,483.6	11.4
	Oct.	556.3	10.2	1,437.5	11.3	1,494.0	11.7
	Nov.	576.8	9.9	1,455.1	11.0	1,512.9	11.3
	Dec.	588.0	10.1	1,507.7	11.0	1,568.7	11.6
1983	Jan.	581.4	10.5	1,508.3	10.8	1,570.9	11.3
	Feb.	579.4	10.7	1,510.6	10.5	1,573.2	10.9
	Mar.	578.1	10.1	1,503.3	9.9	1,566.9	10.2
	Apr.	583.3	10.9	1,516.7	9.9	1,581.1	10.4
	May	594.7	10.6	1,526.5	9.6	1,591.0	10.2
	June	611.1	10.6	1,538.5	9.5	1,603.3	9.6
	July	614.2	12.1	1,553.8	9.9	1,620.7	10.1
	Aug.	603.3	10.4	1,554.6	9.3	1,621.8	9.5
	Sep.	604.0	9.2	1,550.7	8.7	1,615.5	8.9
	Oct.	611.2	9.9	1,566.9	9.0	1,632.6	9.3
	Nov.	628.3	8.9	1,586.5	9.0	1,653.5	9.3
	Dec.	648.5	10.3	1,643.2	9.0	1,710.7	9.1
1984	Jan.	631.7	8.7	1,631.3	8.2	1,703.5	8.4
	Feb.	623.8	7.7	1,625.7	7.6	1,699.3	8.0
	Mar.	622.7	7.7	1,620.1	7.8	1,695.8	8.2
	Apr.	631.2	8.2	1,637.3	8.0	1,714.3	8.4
	May	635.0	6.8	1,645.0	7.8	1,722.5	8.3
	June	648.1	6.0	1,656.5	7.7	1,734.2	8.2
	July	650.4	5.9	1,669.9	7.5	1,750.5	8.0
	Aug.	637.0	5.6	1,669.7	7.4	1,751.7	8.0
	Sep.	653.8	8.2	1,688.4	8.9	1,767.4	9.4
	Oct.	651.4	6.6	1,691.3	7.9	1,768.5	8.3
	Nov.	665.9	6.0	1,706.6	7.6	1,783.9	7.9
	Dec.	703.5	8.5	1,777.4	8.2	1,854.4	8.4
1985	Jan.	680.5	7.7	1,765.6	8.2	1,846.7	8.4
	Feb.	674.3	8.1	1,768.0	8.8	1,852.8	9.0
	Mar.	679.0	9.0	1,767.8	9.1	1,857.6	9.5
	Apr.	678.7	7.5	1,778.2	8.6	1,868.3	9.0
	May	676.1	6.5	1,773.7	7.8	1,865.0	8.3
	June	701.7	8.3	1,795.9	8.4	1,887.5	8.8
	July	701.4	7.9	1,801.4	7.9	1,896.1	8.3
	Aug.	687.3	7.9	1,797.7	7.7	1,893.6	8.1
	Sep.	704.1	7.7	1,806.6	7.0	1,898.9	7.4
	Oct.	703.2	8.0	1,811.4	7.1	1,903.1	7.6
	Nov.	721.4	8.3	1,825.9	7.0	1,919.2	7.6
	Dec.	752.6	7.0	1,890.6	6.4	1,983.8	7.0
1986	Jan.	721.3	6.0	1,870.4	5.9	1,967.2	6.5
	Feb.	717.1	6.3	1,864.2	5.4	1,963.3	6.0
	Mar.	740.6	9.1	1,875.7	6.1	1,977.9	6.5
	Apr.	738.1	8.7	1,875.0	5.4	1,979.7	6.0
	May	745.0	10.2	1,878.4	5.9	1,984.5	6.4
	June	766.3	9.2	1,898.5	5.7	2,003.9	6.2
	July	767.0	9.3	1,909.6	6.0	2,014.7	6.3
	Aug.	759.0	10.4	1,916.2	6.6	2,022.2	6.8
	Sep.	769.4	9.3	1,922.7	6.4	2,024.8	6.6
	Oct.	765.8	8.9	1,932.5	6.7	2,035.8	7.0
	Nov.	794.9	10.2	1,962.9	7.5	2,067.5	7.7
	Dec.	818.3	8.7	2,017.8	6.7	2,120.1	6.9

Table 4 cont d

Monetary aggregates [1]

(EUR billions (not seasonally adjusted; end-of-period stocks) and annual percentage changes [2])

		M1		M2		M3	
		Total	Annual percentage change [2]	Total	Annual percentage change [2]	Total	Annual percentage change [2]
1987	Jan.	793.4	10.0	2,008.6	7.4	2,113.9	7.5
	Feb.	783.0	9.2	2,001.0	7.3	2,112.2	7.6
	Mar.	793.7	7.2	2,002.9	6.8	2,117.7	7.1
	Apr.	801.1	8.5	2,018.3	7.6	2,138.1	8.0
	May	810.5	8.8	2,030.3	8.1	2,155.0	8.6
	June	836.1	9.1	2,050.2	8.0	2,170.9	8.3
	July	828.2	8.0	2,053.1	7.5	2,179.0	8.2
	Aug.	822.7	8.4	2,058.2	7.4	2,192.6	8.4
	Sep.	831.1	8.0	2,060.7	7.2	2,194.4	8.4
	Oct.	830.8	8.5	2,072.6	7.3	2,208.6	8.5
	Nov.	858.2	8.0	2,098.7	6.9	2,240.2	8.4
	Dec.	877.1	7.2	2,151.1	6.6	2,290.3	8.0
1988	Jan.	858.7	8.2	2,141.3	6.6	2,287.5	8.2
	Feb.	847.7	8.3	2,131.6	6.5	2,284.5	8.2
	Mar.	846.3	6.6	2,122.5	6.0	2,279.0	7.6
	Apr.	859.5	7.3	2,148.1	6.4	2,311.5	8.1
	May	871.7	7.6	2,161.7	6.5	2,329.0	8.1
	June	894.5	7.0	2,183.9	6.5	2,344.9	8.0
	July	904.9	9.3	2,206.5	7.5	2,370.0	8.8
	Aug.	885.3	7.6	2,204.4	7.1	2,374.3	8.3
	Sep.	885.2	6.5	2,199.9	6.8	2,370.4	8.0
	Oct.	900.5	8.4	2,225.4	7.4	2,399.1	8.6
	Nov.	922.4	7.5	2,249.0	7.2	2,427.3	8.4
	Dec.	951.9	8.5	2,311.6	7.5	2,486.0	8.5
1989	Jan.	924.6	7.7	2,295.2	7.2	2,479.3	8.4
	Feb.	913.4	7.7	2,288.9	7.4	2,483.9	8.7
	Mar.	916.5	8.3	2,288.0	7.8	2,490.3	9.3
	Apr.	925.1	7.6	2,311.1	7.6	2,520.1	9.0
	May	929.3	6.6	2,317.1	7.2	2,531.8	8.7
	June	954.3	6.7	2,342.7	7.3	2,558.9	9.1
	July	968.0	7.0	2,369.1	7.4	2,590.9	9.3
	Aug.	947.0	7.0	2,363.6	7.2	2,591.2	9.1
	Sep.	955.3	7.9	2,368.7	7.7	2,593.5	9.4
	Oct.	962.7	6.9	2,381.0	7.0	2,611.0	8.8
	Nov.	988.0	7.1	2,407.0	7.0	2,643.4	8.9
	Dec.	1,044.0	9.7	2,499.4	8.1	2,736.0	10.1
1990	Jan.	1,001.6	8.3	2,470.5	7.6	2,725.0	9.9
	Feb.	985.4	7.9	2,460.1	7.5	2,726.6	9.8
	Mar.	979.9	6.9	2,443.3	6.8	2,718.7	9.2
	Apr.	994.3	7.5	2,465.2	6.7	2,745.6	9.0
	May	995.7	7.1	2,463.4	6.3	2,750.1	8.6
	June	1,023.3	7.2	2,488.7	6.2	2,778.8	8.6
	July	1,029.0	6.3	2,500.3	5.5	2,797.5	8.0
	Aug.	1,004.2	6.0	2,494.2	5.5	2,797.6	8.0
	Sep.	1,031.5	8.0	2,520.2	6.4	2,820.8	8.8
	Oct.	1,022.4	6.2	2,521.9	5.9	2,831.6	8.5
	Nov.	1,040.2	5.3	2,541.1	5.6	2,858.9	8.2
	Dec.	1,114.0	6.7	2,644.4	5.8	2,961.1	8.2
1991	Jan.	1,049.9	4.8	2,599.0	5.2	2,932.2	7.6
	Feb.	1,041.6	5.7	2,597.5	5.6	2,943.2	7.9
	Mar.	1,043.1	6.5	2,593.2	6.1	2,948.5	8.5
	Apr.	1,050.5	5.6	2,610.8	5.9	2,967.7	8.1
	May	1,046.6	5.1	2,611.2	6.0	2,971.1	8.0
	June	1,085.0	6.0	2,646.9	6.4	3,008.4	8.3
	July	1,074.5	4.4	2,644.6	5.8	3,020.1	8.0
	Aug.	1,053.0	4.9	2,644.8	6.0	3,031.0	8.3
	Sep.	1,067.8	3.5	2,651.9	5.2	3,035.8	7.6
	Oct.	1,056.0	3.3	2,656.0	5.3	3,049.5	7.7
	Nov.	1,085.8	4.4	2,691.7	5.9	3,090.4	8.1
	Dec.	1,155.1	3.7	2,795.9	5.7	3,187.1	7.6

Table 4 cont d

Monetary aggregates [1]

(EUR billions (not seasonally adjusted; end-of-period stocks) and annual percentage changes [2])

		M1		M2		M3	
		Total	Annual percentage change [2]	Total	Annual percentage change [2]	Total	Annual percentage change [2]
1992	Jan.	1,079.9	2.9	2,736.9	5.3	3,147.1	7.3
	Feb.	1,066.7	2.4	2,730.6	5.1	3,153.9	7.2
	Mar.	1,081.9	3.7	2,737.1	5.5	3,167.5	7.4
	Apr.	1,090.2	3.8	2,762.6	5.8	3,207.6	8.1
	May	1,101.2	5.2	2,774.9	6.3	3,233.5	8.8
	June	1,118.0	3.0	2,786.0	5.3	3,248.8	8.0
	July	1,102.1	2.6	2,783.5	5.3	3,263.5	8.1
	Aug.	1,092.2	3.7	2,787.8	5.4	3,272.5	8.0
	Sep.	1,111.4	4.1	2,809.5	5.9	3,295.1	8.5
	Oct.	1,107.7	4.9	2,813.0	5.9	3,303.4	8.3
	Nov.	1,147.7	5.7	2,849.6	5.9	3,344.9	8.2
	Dec.	1,200.7	3.9	2,926.2	4.7	3,413.7	7.1
1993	Jan.	1,137.0	5.3	2,881.9	5.3	3,391.7	7.8
	Feb.	1,121.7	5.1	2,877.9	5.4	3,398.8	7.8
	Mar.	1,133.1	4.7	2,894.8	5.8	3,433.2	8.4
	Apr.	1,132.8	3.9	2,911.5	5.4	3,447.7	7.5
	May	1,146.5	4.1	2,930.1	5.6	3,467.9	7.3
	June	1,173.6	5.0	2,948.3	5.8	3,474.5	7.0
	July	1,161.4	5.4	2,951.2	6.0	3,477.3	6.6
	Aug.	1,150.4	5.3	2,955.0	6.0	3,484.1	6.5
	Sep.	1,166.7	5.0	2,958.4	5.3	3,474.0	5.4
	Oct.	1,177.1	6.3	2,984.3	6.1	3,504.3	6.1
	Nov.	1,214.0	5.8	3,020.4	6.0	3,540.0	5.8
	Dec.	1,272.6	6.0	3,132.6	7.1	3,628.5	6.3
1994	Jan.	1,228.3	8.0	3,100.9	7.6	3,606.4	6.3
	Feb.	1,219.0	8.7	3,097.3	7.6	3,603.1	6.0
	Mar.	1,235.3	9.0	3,114.6	7.6	3,613.9	5.3
	Apr.	1,236.4	9.2	3,127.8	7.4	3,631.2	5.3
	May	1,236.1	7.8	3,122.4	6.6	3,626.3	4.6
	June	1,268.9	8.1	3,143.9	6.6	3,638.8	4.7
	July	1,257.3	8.3	3,144.8	6.6	3,646.9	4.9
	Aug.	1,239.0	7.7	3,132.5	6.0	3,635.4	4.3
	Sep.	1,248.9	7.0	3,126.2	5.7	3,609.1	3.9
	Oct.	1,255.5	6.7	3,136.3	5.1	3,628.5	3.6
	Nov.	1,273.1	4.9	3,147.6	4.2	3,652.8	3.2
	Dec.	1,328.8	4.4	3,226.3	3.0	3,712.6	2.3
1995	Jan.	1,270.3	3.4	3,178.3	2.5	3,692.4	2.4
	Feb.	1,262.3	3.6	3,174.8	2.5	3,704.3	2.8
	Mar.	1,262.0	2.2	3,171.4	1.8	3,695.1	2.3
	Apr.	1,272.2	2.9	3,188.8	2.0	3,720.9	2.5
	May	1,276.0	3.2	3,193.0	2.3	3,733.8	3.0
	June	1,300.2	2.5	3,212.9	2.2	3,751.5	3.1
	July	1,295.3	3.0	3,213.3	2.2	3,752.7	2.9
	Aug.	1,274.9	2.9	3,216.2	2.7	3,769.9	3.7
	Sep.	1,298.4	4.0	3,229.6	3.3	3,766.8	4.4
	Oct.	1,292.4	2.9	3,239.5	3.3	3,781.9	4.2
	Nov.	1,322.8	3.9	3,269.0	3.9	3,823.3	4.7
	Dec.	1,413.4	6.4	3,386.7	5.0	3,924.6	5.7
1996	Jan.	1,339.2	5.4	3,341.2	5.1	3,909.6	5.9
	Feb.	1,327.0	5.1	3,335.9	5.1	3,920.2	5.8
	Mar.	1,344.2	6.5	3,340.6	5.3	3,929.8	6.4
	Apr.	1,354.8	6.5	3,362.4	5.4	3,948.0	6.1
	May	1,354.4	6.1	3,365.7	5.4	3,952.2	5.9
	June	1,395.8	7.4	3,394.5	5.7	3,964.7	5.7
	July	1,377.1	6.3	3,384.1	5.3	3,954.7	5.4
	Aug.	1,366.1	7.2	3,391.8	5.5	3,971.7	5.4
	Sep.	1,396.1	7.5	3,400.8	5.3	3,965.4	5.3
	Oct.	1,392.8	7.8	3,402.8	5.0	3,967.6	4.9
	Nov.	1,435.4	8.5	3,441.1	5.3	3,998.7	4.6
	Dec.	1,519.2	7.5	3,553.8	4.9	4,079.8	4.0

Table 4 cont d

Monetary aggregates [1]

(EUR billions (not seasonally adjusted; end-of-period stocks) and annual percentage changes [2])

		M1		M2		M3	
		Total	Annual percentage change [2]	Total	Annual percentage change [2]	Total	Annual percentage change [2]
1997	Jan.	1,445.7	8.0	3,505.1	4.9	4,058.0	3.8
	Feb.	1,440.2	8.5	3,498.9	4.9	4,067.1	3.8
	Mar.	1,459.9	8.6	3,498.7	4.7	4,072.1	3.6
	Apr.	1,454.7	7.4	3,504.4	4.2	4,087.7	3.5
	May	1,475.3	8.9	3,520.0	4.6	4,119.0	4.2
	June	1,525.3	9.3	3,546.8	4.5	4,139.2	4.4
	July	1,513.4	9.9	3,545.2	4.8	4,140.4	4.7
	Aug.	1,498.2	9.7	3,543.5	4.5	4,136.3	4.1
	Sep.	1,517.7	8.7	3,536.2	4.0	4,123.0	4.0
	Oct.	1,520.5	9.2	3,548.8	4.3	4,133.6	4.2
	Nov.	1,555.3	8.4	3,581.0	4.1	4,171.9	4.3
	Dec.	1,618.6	6.5	3,672.3	3.3	4,246.4	4.1
1998	Jan.	1,561.5	8.0	3,644.7	4.0	4,238.0	4.4
	Feb.	1,562.4	8.5	3,646.3	4.2	4,245.5	4.4
	Mar.	1,592.0	9.0	3,651.3	4.4	4,255.3	4.5
	Apr.	1,607.0	10.5	3,682.0	5.1	4,290.4	5.0
	May	1,626.4	10.2	3,701.9	5.2	4,313.3	4.7
	June	1,673.7	9.7	3,731.0	5.2	4,334.1	4.8
	July	1,638.4	8.3	3,698.0	4.3	4,326.9	4.5
	Aug.	1,623.9	8.4	3,692.8	4.2	4,312.0	4.3
	Sep.	1,641.3	8.1	3,697.6	4.6	4,307.1	4.5
	Oct.	1,646.7	8.3	3,709.0	4.5	4,339.2	5.0
	Nov.	1,689.9	8.7	3,758.6	5.0	4,368.4	4.7
	Dec. [p]	1,767.2	9.2	3,875.6	5.5	4,436.1	4.5

Source: ECB.

1) Monetary aggregates comprise monetary liabilities of MFIs and central government (Post Office, Treasury) vis-à-vis non-MFI euro area residents excluding central government.

2) Calculated from amounts outstanding.