Monetary and Financial Statistics

Monetary and Financial Statistics Division

Handbooks in Central Banking no.25

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Foreword

The series of *Handbooks in Central Banking* and the accompanying *Lecture* series form a key part of the activities of the Centre for Central Bank Studies (CCBS) at the Bank of England. The CCBS has been in existence since 1990, delivering seminars, workshops and expert advice to central banks all over the world. The *Handbooks* and *Lectures* cover the same subject matter; namely the technical and analytical aspects of central banking.

The *Handbooks* and *Lectures* are aimed primarily at central bankers, and have proved extremely popular and useful reference works for all those looking for materials that provide both a clear analytical framework together with the practical application of these ideas.

Most of the CCBS *Handbooks* and *Lectures* are available from our website www.bankofengland.co.uk/education/ccbs/handbooks_lectures.htm. Several have been translated into Spanish, Russian and Arabic, and these versions are also available on the website.

Our aim is to continue to add to the series, covering new areas of interest and also updating existing *Handbooks* to take account of recent developments. Some of the latest *Handbooks* will include econometric exercises developed in our workshops, thus making these available to a wider audience.

We hope you find the new additions to the series useful, and would welcome any comments on the *Handbooks* and *Lectures* and any suggestions for future topics.

We should note that all views expressed are those of the authors and not necessarily those of the Bank of England or Monetary Policy Committee members.

Andrew Blake and Gill Hammond
Series Editors

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Abstract

This *Handbook* explains why central banks rather than national statistical institutes tend to collect data from the banking sector. It provides an overview of the wide range of monetary and financial statistics collected by most central banks, as well as the main uses of these data. In an increasingly globalised financial system, several statistics collected by central banks are only useful if similar statistics are available for other economies. So international harmonisation of statistical frameworks and co-operation between data compilers is essential. Such harmonisation takes place at the European level, but also globally.

The *Handbook* also discusses internationally agreed indicators that can be used to assess the quality of economic statistics collected by central banks and national statistical institutes alike. Given that the collection of data imposes a burden on those organisations required to provide data, it is valuable for compilers of statistics to apply cost benefit analysis to their data collections. For central banks, this involves establishing whether the uses (or benefits) of the data collected justify the costs to both reporting institutions and the central banks of collating these data.

The *Handbook* contains several examples of data collection processes at the Bank of England.

1 Introduction

Most central banks have a substantial statistics collecting function. This stems from their role at the centre of the financial system, particularly in the formulation and operation of monetary policy, maintaining the stability of the financial system, and, for some central banks, the prudential regulation of banks. For these roles they rely on information, including regular statistics of the stocks, flows and prices of financial intermediation. Data on monetary aggregates, the banking sector and financial markets can be compiled by the national statistical office, but the most common arrangement is for the central bank to collect and publish such data directly.[1] The central bank can then send on to the national statistical office those parts of the data that are needed for the national accounts and other statistics.

Collection and publication of statistics by an institution that also sets and implements policy - such as a central bank - rather than by an agency that is purely responsible for statistics increases the need to ensure the credibility and objectivity of the statistics. This can be achieved by openness about statistical methods and commitment to a Code of Practice (see Section 11.2). Keeping these statistics up-to-date with new developments in financial markets is a continuous challenge. At the same time, however, central banks need to be aware of the burden their data collection imposes on reporting agents, in particular as statistical data can differ from data needed for financial or management purposes. So it is important that central banks aim to keep the burden on respondents to "an acceptable level consistent with legislative requirements and balancing the needs of users against the demands on suppliers" (Bank of England Code of Practice). In other words, the costs of data collection need to be weighed against the benefits that users derive from the availability of these data.[2]

It is difficult to classify definitively data as being used for monetary stability or financial stability, so this Handbook describes the different types of data, whilst recognising that they can be used for more than one purpose. Most central banks will also collect data for operational purposes, e.g. for calculating minimum reserves. The Bank of England compiles and publishes a range of monetary and financial statistics, but it also publishes an Inflation Attitudes Survey, UK Yield Curve data and other financial markets series.

[1] See the Appendix 'Scope of statistical responsibilities of several central banks'.
[2] The Bank's Cost Benefit Analysis project will be discussed in detail in the Summer 2006 issue of the *Bank of England Quarterly Bulletin*.

2 Monetary Statistics

Central banks' long-standing interest in monetary statistics originates from the classical view that, at least in the long run, the quantity of money affects the price level in the economy. The view in the 1970s was that, if inflation were a monetary phenomenon, controlling the supply of money was the route to low inflation. So monetary aggregates became central to the conduct of monetary policy in many countries. This was particularly the case where a country had adopted a "monetary targeting" approach to monetary policy, usually consisting of specifying a target range for money growth, which was then the key variable to determine monetary policy decisions. In many industrialised countries, the success of policies to control the rate of growth of a monetary aggregate in order to achieve price stability proved limited so monetary aggregates lost some of their direct policy relevance in the early 1980s. Nevertheless, money continues to be an important variable in the conduct of monetary policy in most economies. Even in economies where monetary policy is determined by an inflation target or exchange rate regime, or discretionary regime, statistics of money and credit are still of close interest to central banks in their assessment of the likely future course of inflation.[3] [4]

2.1 The Definition and Measurement of Money

Traditionally, money has been defined with reference to three basic requirements. First, money refers to items that are universally acceptable as a means of exchange or payment for other goods and services. Second, money serves as a measure of value, or unit of account. Third, money acts as a store of wealth,[5] because it is not perishable. In addition to these general characteristics, the precise definition and subsequent measurement of the concept of 'money' also depend on the purposes for which that concept will be used.

The institutional framework (such as national monetary policy objectives) and behavioural relationships in an economy or monetary area are important factors to consider in that respect. As collectors of monetary statistics, some central banks may adopt a narrow definition of money and focus on its role as a means of payment only. Several assets, such as bank notes, coins and current accounts, can instantly be used to make payments, and others can easily, though not instantly, be transformed into a means of payment. Examples of the latter include time deposits or savings

[3] See CCBS Handbook No. 1, 'Introduction to monetary policy'.

[4] For example, the Bank of England's quarterly *Inflation Report* contains a thorough analysis of a wide range of economic indicators that affect the UK. See also 'The transmission mechanism of monetary policy', *Bank of England Quarterly Bulletin*, May 1999, by the Bank's Monetary Policy Committee, which describes the role of money in the formulation of monetary policy.

[5] Although only in nominal terms, as the purchasing power of money can change as a result of inflation.

accounts and the extent to which they can be used as a means of exchange or payment will vary according to national arrangements.

Maturity as a criterion of money

In principle, maturity could be useful as a criterion to distinguish money held for use in transactions from money held primarily as a store of wealth, as well as to distinguish money from other financial assets. In the UK, though, maturity has not generally been a useful criterion, because the majority of the deposits and similar assets that are candidates for inclusion in money are of a short-term nature, and even those that have formally a longer time to maturity can often quickly be used in transactions, at an insignificantly small penalty.[6] Thus the only maturity criterion now used to define the UK's monetary aggregates is that short-term paper and securities (including certificates of deposit) issued by monetary financial institutions are included in M4 (the UK's current measure of broad money) only up to an original maturity of 5 years.

The European Central Bank (ECB) uses an original maturity criterion for deposits and securities in defining the euro area's monetary aggregates. This criterion is judged to be useful given the institutional background in most of the countries in the euro area. The ECB's measure of broad money, M3, excludes deposits and debt securities issued by monetary financial institutions of over 2 years' original maturity, as well as deposits redeemable at more than 3 months' notice.

Other central banks may prefer to broaden their definition of money to include additionally assets that are mainly used as savings vehicles – such as money market mutual funds or tax-efficient accounts – and hardly as means of payment. But again, the dividing line between the various types of assets can be difficult to draw.

In summary, it is impossible to provide a definition of money that can be applied to all economies at all times. That explains why there are no precise international standards on which particular assets to include in money[7] and why central banks usually define and monitor several monetary aggregates at the same time. Three internationally accepted useful concepts, however, are 'base money', 'narrow money' and 'broad money'.

[6] For this type of reason, the maturity criterion (residual maturity of less than one month) that was used in the definition of M2 was dropped in 1992. This and similar definitional questions were raised in '*Monetary aggregates in a changing environment: a statistical discussion paper*', Bank of England, March 1990. The resultant change in M2's definition was described in an article on the Banking Statistics Review on page 317 of the August 1992 *Bank of England Quarterly Bulletin*.

[7] The International Monetary Fund's manual on monetary and financial statistics is descriptive and advisory rather than prescriptive on matters of definition. It is, however, also useful for compilers of monetary statistics to observe the international accounting standards - wherever these contain appropriate rules or guidance (e.g. on sectorisation, or the definition that distinguishes 'transactions' from the other factors that alter balance sheet levels).

2.2 Base Money

'Base money' (sometimes called *'central bank money'* or *'high-powered money'*) is defined as deposits at the central bank plus notes and coin. This can be a useful concept, for example where there is a firm legal or institutional relationship between this 'base' and a wider monetary aggregate. In such cases the central bank may aim to influence this wider aggregate by acting on the base, rather than by influencing the level of interest rates.

2.3 Narrow Money

'Narrow money' comprises money intended primarily for use in *transactions*, rather than as a store of wealth. As the intentions of each holder of a unit of money are impossible to measure, narrow money has to be defined in practice by characteristics such as liquidity, i.e. the ease with which it can be used to make payments.

Narrow money is a well-developed concept in most countries, but has been hard to define satisfactorily in the UK, because there is no administrative distinction, or any clear commercial distinction, between deposits held for transactions purposes and those held as savings vehicles. So over the past three decades, a number of narrow money measures have been used in the UK.

Notes and coin is the current measure used by the Bank of England; it consists of sterling notes and coin in circulation outside the Bank of England (and therefore includes those held in banks' and building societies' tills). The great majority of notes and coin is held by non-banks, i.e. the UK private sector. Another measure of narrow money in the UK is M0, which was originally defined as the 'monetary base'. In addition to notes and coin, M0 includes the small amount of the banks' operational sterling deposits held at the Bank of England. Movements in these deposits are unrelated to current economic developments, so that most attention is paid to the notes and coin element of M0.[8]

2.4 Broad Money

'Broad money' comprises money intended to be a store of wealth, as well as transactions money. The UK's current measure of broad money, M4, comprises all sterling deposit liabilities of monetary financial institutions (i.e. banks and building societies) in the UK to the rest of the UK

[8] In September 2005, the Bank of England announced its intention to cease publication of M0 data, when the reforms to its money market operations, scheduled for May or June 2006, have been implemented. See Janssen, N. and Andrews, P. (2005), 'Publication of narrow money data: the implications of money market reform', *Bank of England Quarterly Bulletin*, Autumn, pages 367-72.

private sector, generally irrespective of maturity, as well as the UK private sector's holdings of sterling notes and coin.[9]

Because of the importance attributed to measuring money, and the difficulty of determining a clear dividing line between money and near-money, a fourth concept, broader *'liquidity'*, is sometimes also used (e.g. liquid assets outside M4 in the UK and 'broad liquidity' in Japan).

2.5 Divisia Money

Divisia[10] money is a weighted index, compiled from the components of broad money, which aims to proxy the amount of money held for transactions purposes in the economy. The weight of each component is determined by its current interest rate differential from a benchmark interest rate. These weights are proxies for the degree of 'transactions services' likely to be provided by each component (i.e. components with a higher interest rate are more likely to be held for savings/wealth purposes rather than for immediate transactions, so their weight in the index is lower). The use of interest rates for this purpose is pragmatic, but not ideal, especially where competition between deposit-takers manifests itself in payment of high rates on short-term deposits, or in periods when the yield curve slopes downwards (i.e. when short-term rates are above longer-term rates). At an aggregate level, the behaviour of Divisia money in the UK has not generally differed much from that of the simple unweighted measure of broad money, M4. But differences between households' M4 and households' Divisia can be more pronounced at times, with households' Divisia generally providing a better measure of transactions money that is more closely related to consumer spending than households' M4.

2.6 Compilation Issues

The dividing line between the money-creating and the money-holding sector[11]

The international standards for national accounts use the terms 'other depository corporations' or (in Europe) 'monetary financial institutions' (MFIs) to cover banks and similar institutions whose liabilities are clearly candidates for inclusion in monetary aggregates. Such institutions together form the money-creating sector. For the euro area, the European Central Bank has determined a list of individual institutions that are considered to be MFIs. This list was determined pragmatically, to cover all types of institution whose liabilities have a sufficient number of the characteristics of money in terms of liquidity and capital-certainty (the list includes banks and similar deposit-taking institutions, such as money market funds which invest in money or money

[9] Short term paper and securities issued by monetary financial institutions are only included with an original maturity of up to 5 years.
[10] Named after François Divisia, the French mathematician who in 1926 originated the concept of weighting financial assets to compile Divisia indices of money.
[11] Similar considerations apply when determining the boundary of 'credit'.

market instruments); the ECB's M3 aggregate includes central government liabilities with a monetary character (post office accounts, national savings accounts and Treasury accounts).

Whether the *public sector* should be included in the money-holding sector can similarly be decided pragmatically, depending on the extent to which inclusion of public sector money holdings would affect the usefulness of the specific definition of money for monetary policy purposes. For its definition of money for the euro area, the ECB has excluded holdings by central government (which can therefore be labelled the 'money-neutral' sector, with the exception of certain central government liabilities with a monetary character noted above), but included holdings by the other parts of the public sector. The UK excludes holdings by the whole of the public sector, because the sector's cash management policy means that movements in its deposits – which are in any case generally insignificant - are unlikely to be related to economic activity; this exclusion also has the advantage that it simplifies the link with the total public-sector statistics that are shown as counterparts of money.

The *non-resident sector* is not normally included in the money-holding sector, on the assumption that non-residents' holdings of deposits etc, even in local currency, are held for investment purposes rather than for immediate spending in the local economy. Although part of non-residents' deposits may be held for local spending on goods and services, this is likely to be small. Nevertheless, even if such deposits are held only for investment purposes, movements between them and other local assets or between domestic and foreign currency holdings may have an effect on asset prices and/or the exchange rate. So they are worth monitoring as part of the whole analysis of monetary data. In the UK, data on non-residents' deposits are available as part of the monetary statistics each month, because data for the whole balance sheet of the banking sector are collected routinely. The data are published within this balance sheet, and domestic currency (i.e. sterling) holdings by non-residents are also shown in a table of 'liquid assets outside M4'.

Inclusion of residents' foreign currency deposits, and their deposits abroad, in money

These are candidates for inclusion in money, or at least in broader measures of liquidity. The main criterion should be whether these deposits are likely to be used for domestic spending. Holdings by euro-area residents of liquid assets denominated in foreign currency can be close substitutes for euro-denominated assets. Therefore, the European Central Bank includes such assets in its measure of broad money, M3, if they are held with MFIs located in the euro area. In the UK, foreign currency deposits at banks in the UK were included in the broad money aggregate M3 used in the early 1970s. They were excluded from its successor, 'sterling M3', and its current successor, M4, because they are probably held to finance expenditure abroad or expenditure on other foreign currency assets.

If foreign currency assets (or any assets whose price can alter in terms of domestic currency, such as securities) are included in money, flows and rates of change need to be adjusted for exchange

rate (or market price) changes.[12] Over short periods of time, growth rates that exclude such changes in price are more closely linked to the economic behaviour of asset holders. But over longer periods, the wealth effects, which include changes in price, are also worthy of study.

Sale and repurchase obligations ('repos') [13]

In a repo an institution obtains funds by selling securities to another party, with an agreement to repurchase equivalent securities at a specified price on a specified date in the future. Repos in which the money-creating sector obtains funds from the money-holding sector are included in broad measures of money, because they are secured deposits (and indeed appear as such in balance sheet statistics); repo transactions in which the money-holding sector obtains funds from the money-creating sector ('reverse repos' from the viewpoint of the money-creating sector) are included in the comparable measures of credit.[14]

Funds in transit ('the float') and in suspense accounts for customers

As items in transit and suspense belong to the banks' customers, they should, if possible, be allocated to customers' deposits or their borrowing. In the UK, set rules are in place to allocate items in transit (cheques and other items going through the clearing system) and other suspense accounts to the deposits from and the loans to the different subsectors (such as households, corporations etc) of the money-holding sector. These rules are based on evidence from past surveys and other information about the nature of these items. A similar procedure is used for balances awaiting settlement of securities transactions.[15]

Cash, certificates of deposit and other similar (unregistered) paper included in money

Similarly, as the issuing institutions do not know who owns their paper, assets such as cash and CDs have to be allocated to the component sectors of the money-holding sector, taking into account reported data on holdings of the various sectors, supplemented by estimates of the sectoral distribution. In the UK some information on sectoral holdings is available (by monetary financial institutions, the government and the corporate sectors, and for holdings held in custody by the banks for the non-resident sector); the remainder is allocated to these sectors and the household sector in fixed proportions based on past joint research by the Bank and the Office for National Statistics.

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[12] How to exclude valuation changes when calculating flows of such assets is covered under *Deriving flows from stocks* in Section 11.4.
[13] See CCBS Handbook No. 16, 'Repo of government securities'.
[14] See the box 'The impact of gilt repo transactions on M4' on page 11of the May 1996 *Inflation Report*.
[15] Current allocations are described in Docker, S. (2006), 'Suspense items – allocations within aggregate banks' data', *Monetary and Financial Statistics*, Bank of England, February (http://www.bankofengland.co.uk/statistics/ms/articles/art2feb06.pdf).

Business done by agents on behalf of others

Reporting systems need to be designed so that, ultimately, business that has been undertaken in an agency capacity on behalf of a third party is attributed to the beneficial owner of that business. It is often difficult or impossible for reporters to look through these agency transactions to the beneficial owner. Where this is the case, reporters should be guided to report positions with agents as such. This allows the scale of the problem to be quantified and other routes can be pursued to improve the accuracy of the aggregate statistics (e.g. by seeking information from the agents, at least via a periodic survey).

Reporting differences in interbank business

In concept, total interbank assets equal total interbank liabilities. In practice, there are likely to be discrepancies. The size of any discrepancy should be monitored, so that the scale of potential errors in important statistics such as the monetary aggregates is known and appropriate resources can be allocated to try to improve reporting. The discrepancy should be removed from the aggregate statistics, based on judgment and intelligence from reporters. In UK statistics, the discrepancy is allocated mainly to the (non-bank) financial corporations and non-resident sectors, on the basis of past research.

3 'Counterparts' of Money[16]

Money, and particularly its flows, can be defined in terms of the consolidated balance sheet of the banks and similar institutions whose liabilities comprise money, through the logic that these institutions' total liabilities must equal their total assets. One substantial counterpart, lending, is an interesting concept in its own right; but the placing of it within a scheme showing the counterparts of money assists a logical integrated analysis of financial developments. Other items that can readily be shown as 'counterparts' are:

- *Net lending to the public sector* [17]
- *External flows*
- *Non-deposit liabilities and reserves* (banks' non-monetary liabilities such as their issues of longer-term securities, their capital and retained profits).[18]

Two illustrations of the derivation of M4 counterparts are shown in Box A below. But these logical ties between items in the balance sheet do not necessarily show the direction of causation. For example, an increase in money may be caused by its holders' desire to have more liquid assets rather than directly by an increase in lending, and an increased public sector deficit may cause - or be caused by - a reduction in private sector borrowing rather than cause an increase in money.

[16] The derivation of these counterparts from the monetary financial institutions' (MFIs') balance sheet is described in Docker, S. and Willoughby, D. (1999), 'Monetary statistics and the monetary financial institutions consolidated balance sheet', *Monetary and Financial Statistics*, Bank of England, July (http://bankofengland.co.uk/statistics/ms/articles/art2jl99.doc). The article also describes a simpler set of counterparts, derived more directly from MFIs' balance sheet items.

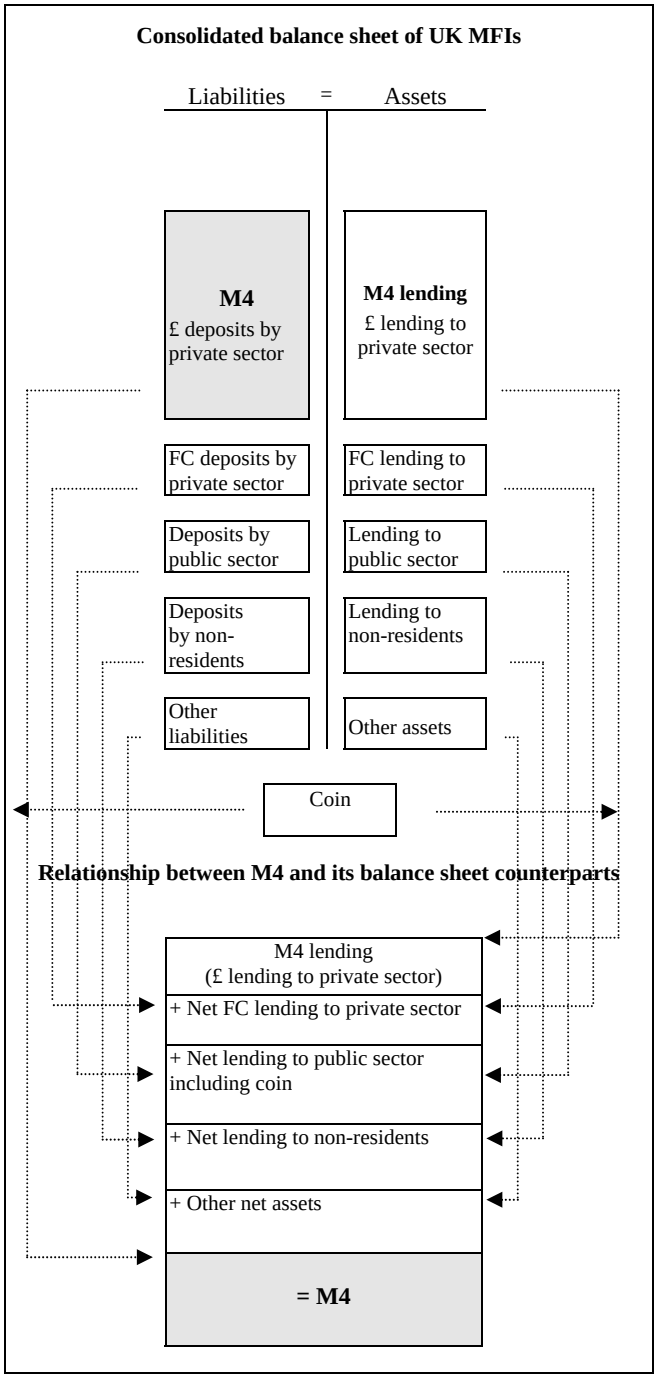
[17] The *government's position* (net lending by the banks to the government) can be disaggregated into the government's cash deficit / surplus less its net borrowing from/lending to domestic non-banks and abroad, thus providing a link with the fiscal position and government finance, including the official reserves and foreign borrowing.

[18] Similarly, any deposits excluded from the definition of 'money' are also a counterpart of money (e.g. the item 'monetary capital' in German statistics, prior to European Monetary Union, comprised longer-term bank deposits that were excluded from the definition of money in Germany).

Box A How to get to M4 & the counterparts from the MFIs'consolidated balance sheet

Changes M4 and the counterparts	**£ millions**		**MFIs' consolidated balance sheet (plus coin)**	**£ millions**
M4 lending	**10 853**	=	£ Assets with the private sector	**10 853**
Public sector net cash requirement (PSNCR)+	5 969		£ lending to public sector	2 305
Public sector debt sales to the M4 private sector (-)	-4 970		*minus* £ Liabilities to public sector	-135
External and foreign currency finance of the public sector	1 454		*plus* coin	13
Subtotal*:* Public Sector Contribution (-)	**2 453**	=		**2 453**
Other external and foreign currency flows	**-14 133**	=	FC assets with public sector	55
(Net external and foreign currency liabilities (-))			*plus* FC assets with private sector	5 888
			plus £ assets with non-residents	-9 895
			plus FC assets with to non-residents	76 418
			plus other FC assets	-761
			minus FC liabilities to public sector	-25
			minus FC liabilities to private sector	-5 097
			minus £ liabilities to non-residents	6 543
			minus FC liabilities to non-residents	84 146
			minus other FC liabilities	270
				-14 132
£ Net non deposit liabilities (-)	**-1 861**	=	Other £ assets	32
(£NNDLs)			*minus* other £ liabilities	1 893
				-1 861
M4	**-2 689**	=	£ Liabilities to Private Sector	-2 702
			plus coin	13
				-2 689

Box B Relation between M4 and its counterparts[19]



FC = foreign currency

[19] The terms 'deposits' and 'lending' used in Box B should be interpreted in a broad sense so as to include also securities other than shares (in the case of lending also shares and other equity issues) and notes and coin (in the case of M4). Coin is the only M4 component that is external to the MFI balance sheets but is by convention added to both sides of the consolidated balance sheet to allow for a direct derivation of M4.

3.1 Financial Accounts

The counterparts of money are a subset of the full financial accounts (the 'flow of funds').[20] These statistics are a helpful framework for monetary and financial stability analysis. For example, they enable developments in the monetary statistics to be seen in the context of other financial flows, and to be linked in a logical accounting framework with the national accounts data for national income etc.[21] By recording borrowing and lending transactions by economic sectors in one consistent framework, financial accounts enable the analysis of the portfolio and financing behaviour of the economic sectors. Compilation of the full national and financial accounts also has the valuable feature of identifying weaknesses in the statistics. Items that should agree may fail to do so. The resultant residuals or 'statistical adjustments' may be allocated in a plausible way by estimation, or at least can be left in the statistics to indicate the direction and size of error in the identified items.

The stock equivalent of the financial transactions reported in the financial accounts is known as the sector (financial) balance sheets. They are an integral part of the international standards for national accounts; the SNA93 and ESA95 systems of national accounts.[22] When complemented by estimates of the 'capital stock' (i.e. physical assets and intangible assets) they provide a complete picture of the 'net worth' of each economic sector in the economy.

In the UK, the financial accounts and financial balance sheets are compiled and published quarterly by the ONS as part of the full national accounts, approximately 12 weeks after the end of each quarter. There is a particular focus on the accounts of the household and non-financial corporate sectors, because of the light they can throw on the impact of financial developments on real economic conditions.

3.2 Balance of Payments

External flows within the M4 counterparts can provide a conceptual link to the balance of payments, because the balance of payments flows of the money-creating and money neutral-sectors are in concept equivalent to the balance of payments flows of the money-holding sector. The interaction between the growth of money and credit in the economy and the current account of the balance of payments has long been recognised. What is presented below is an accounting identity;

[20] The full financial accounts show the financial assets and liabilities by different economic sectors and by types of financial transactions. The accounts can be presented on a balance sheet (stock) basis or on a transactions basis.
[21] Especially if the definitions of money and lending are nearly or precisely derivable from cells in the financial accounts.
[22] See Section 9 for further detail on SNA and ESA.

it implies nothing about cause and effect, opinions on which have divided economists for decades[23]. Thus the balance of payments can be presented as follows[24]:

> Current account + capital account = financial account of non MFIs + financial account of MFIs (net external transactions) + errors and omissions
>
> Hence:
>
> Changes in net external assets of MFIs = Current account + capital account -financial account of non MFIs – errors and omissions
>
> And:
>
> Changes in net external assets of MFIs = BoP of non MFIs – errors and omissions

Other rearrangements of the standard balance of payments identity are possible, and valid, reflecting the particular analytical focus required.

However, in practical terms the presentation of a coherent and credible data set presents a formidable challenge to statisticians. It requires consistency of concepts and measurement across the monetary and balance of payments statistics; a breakdown of each component of the balance of payments by resident domestic sector (as a minimum, MFI/non-MFI); and modest errors and omissions. At one time, when the United Kingdom monetary policy framework included a target for Domestic Credit Expansion, the then Central Statistical Office published a table that attempted to illustrate this relationship[25] but this was discontinued in the late 1980s as persistent and large unexplained residuals (reflecting some of the practical obstacles mentioned above) detracted from its analytical usefulness.

Nevertheless, in recent years there has been a renewed interest in this kind of approach, notably by the European Central Bank which considers the so-called 'monetary presentation' of the balance of payments – that is to say, where the external transactions of the non-MFI sector are distinguished from those of the MFI sector - as an appropriate tool for identifying sources of change in the external counterpart of (euro area) M3. Consequently, the ECB, and the central banks of the Eurosystem, have attempted to improve the coverage of data in this area, particularly regarding the additional breakdowns required by resident domestic sector in the balance of payments. These breakdowns also serve in the reconciliation between the balance of payments and international investment position and the rest-of-the-world account in euro area quarterly financial accounts. The results have been published since June 2003 in the *Monthly Bulletin* of the ECB, in Table 7.2 of the statistical annex.

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[23] See Cobham, D. (1977), 'The Debate over the Letter of Intent', *The Banker*, February, page 49.
[24] This simplified presentation assumes that the external transactions of the MFI sector have a neutral impact on the current and capital accounts.
[25] Table 11.8 in *Financial Statistics*, Central Statistical Office.

Box C Balance of payments

In concept, the balance of payments (BoP) statistics are the same as the position of the non-resident (or 'rest of the world') sector in the financial accounts, but viewed from the perspective of the UK. Many central banks compile and closely study the balance of payments, because these flows can affect the prices of goods and services and of financial instruments. BoP statistics can be particularly relevant where the exchange rate plays an important role in monetary or overall economic policy. They help to explain what kinds of financial flows are affecting the exchange rate, although pressures on the rate can occur without any balance of payments or domestic transactions taking place. In countries where the central bank owns or manages the reserves, it will also naturally have a prime role in compiling and publishing statistics for the reserves and related borrowing.

The stock or balance sheet equivalent of the BoP flows is known as the 'International Investment Position'(IIP). This shows the external financial assets and liabilities of a country as a whole at a particular point in time. The IIP is conceptually identical, but with assets and liabilities reversed, to the financial balance sheet of the 'Rest of the World' sector within the national accounts.

In the UK, the BoP and IIP tend nowadays to be monitored much more in the context of the whole national and financial accounts. For example, the current account maybe studied as evidence on whether or not the real economy is overheating, and elements in the financial account are studied in their own right for what they show about the balance in various capital and financial markets. In its monetary policy function, the Bank of England does not give a special priority to study of the balance of payments, but looks at it in the overall context of the national accounts and other evidence of developments in the real and financial economy.

In the UK, the BoP and IIP are compiled by the ONS on a basis fully consistent with the national and financial accounts. The Bank of England does however have a substantial role in compilation because of the importance of the UK banking sector.

The continuing responsibilities for collection and compilation of BoP statistics by some central banks may be due also to the past or present existence of controls over the holdings of foreign assets. Many European countries have based their balance of payments statistics on systems originally set up to monitor exchange controls. These systems have been continued and/or modified but still often involve comprehensive reporting of individual transactions to the central bank.

3.3 International Reserves

Reserves terminology

Countries have traditionally built up a portfolio of financial assets "that are readily available to and controlled by the monetary authorities for direct financing of payments imbalances; for indirectly regulating the magnitudes of such imbalances through intervention in exchange markets to affect the currency exchange rate; and/or for other purposes"[26] (IMF *Balance of Payments Manual*, 5th edition, paragraph 424). These assets, or sub-sets of them, may be designated as "international reserves" or "reserve assets", depending on the context. The Manual also establishes criteria to determine which assets qualify for inclusion in the reserves.[27]

The phrase "international reserves" is the broadest, generic term used to describe the range of assets that meet the first two motives cited above. The term "reserve assets" is more narrowly drawn, and specific to the presentation of the balance of payments and the international investment position. Consequently, only qualifying claims on non-residents score as reserve assets. Other expressions, including variations on "official reserves", "foreign exchange reserves" and "gold and (foreign) currency reserves", are also encountered. The development by the IMF and the BIS of the Data Template on *International Reserves and Foreign Currency Liquidity* (see below) has encouraged a degree of harmonisation of usage in this area.

Uses of reserves statistics

Although the stocks and flows of the reserves tend to be relatively small in the context of the total external assets and liabilities, or the overall balance of payments, of any given economy, statistics on the reserves have a high profile both for official policymakers and for financial markets. They are also used in a diverse range of statistical outputs including the monetary statistics; other macroeconomic statistics (e.g. the balance of payments and international investment position); financial stability statistics; and international statistical compendia.[28] The presentation of reserves data in the monetary and financial stability contexts are discussed in more detail below. User focus may vary from country to country, and according to current circumstances.

Administrative data sources

Unlike most of the statistics described elsewhere in this Handbook, reserves statistics are drawn from administrative sources within the official sector and are often compiled by the statistics department of the central bank. Data can be sourced either from the operational area (middle- and back-office functions) or the internal accounting department. In either case this requires liaison

[26] For example, to finance official expenditure abroad.
[27] It is usual for such assets to be held on the balance sheet of the central bank but other institutional arrangements are possible. For example, in the United Kingdom the reserves are owned by HM Government and are held in a government account managed by the Bank of England under agreed procedures.
[28] For example, the monthly IMF publication *International Financial Statistics.*

with the statistics department to ensure that processing or accounting systems can deliver intermediate outputs readily capable of aggregation into the statistical concepts established by the relevant international standards, principally the IMF *Balance of Payments Manual* and *International Reserves and Foreign Currency Liquidity: Guidelines for a Data Template*.[29]

Reserve-related liabilities

"Reserve assets" are a gross concept but from an analytical standpoint, it can also be important to consider what actual, or contingent, liabilities may exist that represent commitments of the monetary authorities and the central government to be funded out of the reserves – thereby reducing the effective capacity to utilize the reserves for financing payments imbalances or for foreign exchange intervention, particularly in a time of crisis. Thus, data on reserve related liabilities (effectively official external and foreign currency borrowing and other engagements) are compiled alongside the reserves, again from administrative data. This also requires appropriate liaison between the statisticians and the relevant operational area of the central bank or other borrowing agency.

Reserve assets in a monetary union

The compilation and dissemination of reserves and related statistics, within a monetary union will reflect the statutory and institutional arrangements applicable in each country. As an example, the arrangements for the *Statistical Treatment of the Eurosystem's International Reserves* have been published by the European Central Bank in a publication of that name.[30]

The reserves in the monetary statistics

The role of the official reserves and foreign borrowing in the monetary statistics is an indirect one and its significance depends upon the monetary policy framework in place at the time. For example, during the period when, in the United Kingdom, the public sector deficit, government debt sales and the balance of payments were key policy variables, the counterparts to broad money were presented in a way that explicitly showed the external and foreign currency finance of the public sector (i.e. changes in the official reserves and reserve related liabilities). In the current framework, and with a switch of emphasis away from the cash measure of public sector borrowing, this is no longer the case. Instead, the counterparts show directly MFIs' net lending to the public sector.[31] Furthermore, because in the United Kingdom the sterling counterpart of foreign currency purchased or sold for the reserves will be reflected in the Government's domestic cash position, the

[29] See http://dsbb.imf.org/vgn/images/pdfs/opguide.pdf.
[30] See http://www.ecb.int/pub/pdf/other/statintreservesen.pdf.
[31] See Docker, S. and Willoughby, D. (1999), 'Monetary statistics and the monetary financial institutions consolidated balance sheet', *Monetary and Financial Statistics*, Bank of England, July (http://bankofengland.co.uk/statistics/ms/articles/art2jl99.doc); and Westley, K. and Brunken, S. (2002), 'Compilation methods of the components of broad money and its balance sheet counterparts', *Monetary and Financial Statistics*, Bank of England, October (http://bankofengland.co.uk/statistics/ms/articles/Art2oct02.doc).

reserves and related statistics also feature in the presentation of data on the sterling money market and government financing.

Reserves statistics and financial stability

In response to the international financial crises of the mid- and late-1990's the IMF, with support from member countries, set in train a series of initiatives to improve the Fund's procedures and surveillance activities, including the promulgation of statistical standards to guide members in the provision of economic and financial data to the public so as to give greater transparency to countries' economic policies. The first of these was the establishment in 1998 of the Special Data Dissemination Standard (SDDS),[32] followed by the General Data Dissemination System and the Data Quality Assessment Framework. One of the first, and key, data sets to be developed under the SDDS was that relating to international reserves. This was because the financial crises mentioned above had revealed a number of data deficiencies in this area, including: incomplete information on reserve assets (e.g. pledged assets not identified; deposits in financially weak (domestic) banks unavailable for use in time of need; and inconsistent and obscure valuation practices) and a lack of publicly available information on official short-term foreign currency obligations (so called 'drains' on the reserves).

An international consensus emerged that the timely disclosure of information on international reserves and foreign currency liquidity according to a coherent, common framework was a high priority to serve the needs of both the public authorities and of the financial markets. Accordingly, the IMF and a working group of the Committee on the Global Financial System (CGFS) of the Group of Ten central banks developed such a framework in 1999, subsequently known as *The Template on International Reserves and Foreign Currency Liquidity.* After a transition period, adherence to the *Template* (including the observation of minimum standards for the frequency and timeliness of reporting) became mandatory for countries subscribing to the SDDS. The innovative nature of the *Template* was that it brought together the foreign currency resources of the authorities (both those scoring as reserve assets in the balance of payments and other assets) and set against them the so-called foreign currency 'drains', broken down into 'predetermined' (committed) and 'contingent' and covering not only on-balance sheet liabilities but also off-balance sheet positions in financial derivatives. A vital part of the *Template* approach was the establishment of international comparability in the published data. This was achieved through the publication by the IMF of *International Reserves and Foreign Currency Liquidity: Guidelines for a Template*, which provides comprehensive guidance towards a common methodology.

[32] See Brown, H. (1997), 'New IMF standards for the dissemination of data', *Monetary and Financial Statistics*, Bank of England, November (http://bankofengland.co.uk/statistics/ms/articles/Artinov.doc).

4 Credit

Monetary policy makers and economic analysts also closely monitor *credit* or *MFI lending* because of its likely connection with spending and with the growth of monetary aggregates. Although the conceptual boundary of credit is generally clearer than that of money, analysts need to be aware that borrowers may be able to obtain funds from other sources. For example, the corporate sector may be able to issue securities, which will not be captured by the MFI lending statistics (if those securities are owned by sectors other than the MFI sector), and/or borrow from abroad.

In the UK the main credit aggregate is 'M4 lending', i.e. sterling lending by MFIs in the UK to the rest of the UK private sector. Because lending by non-MFIs to individuals can be significant, the Bank also compiles and publishes a broader measure of 'lending to individuals', which can give a more accurate picture of total lending activity. Similarly, the Bank publishes a broader series of 'total finance raised in the UK by PNFCs', which measures all borrowing by companies, including their issues of securities and their borrowing in foreign currency.

In the UK, since the 1980s an important source of finance for individuals has been *mortgage equity withdrawal*. Mortgage equity withdrawal (MEW) is borrowing that is secured on the housing stock but not invested in the housing market. So the funds released through MEW can be used for consumer spending, to repay unsecured debt or to save or invest in financial assets. Broadly speaking, the Bank calculates an estimate of MEW as the difference between housing finance (net mortgage lending and capital grants) and households' investment in housing (purchases of new houses and houses from other sectors, improvements to property, and the transaction costs of moving house).[33]

4.1 Sectoral and Industrial Breakdown of Money and Credit

The reasons for holding money and for borrowing from MFIs vary according to the types of economic agent: accordingly, changes in money holdings and in borrowing by the various sectors have different implications for the economy. So it is useful to distinguish money and lending by sector, such as the household, non-financial corporations and financial corporations sectors. Bank of England research has shown that the relationship of sectoral measures of money and credit with economic activity is stronger than that of aggregate measures. Against this background, the Bank has compiled the sectoral breakdown of broad money and credit on a monthly basis since 1997.

[33] See Davey, M. (2001), 'Mortgage equity withdrawal and consumption', *Bank of England Quarterly Bulletin*, Spring, pages 100-03 and the box 'Mortgage equity withdrawal' on page 6 of the November 1999 *Inflation Report*.

A further breakdown by *industry* (agriculture, insurance, manufacturing, real estate, services etc) of the financial and non-financial corporate sectors' deposits and borrowing also helps to improve our understanding and interpretation of the sectoral money and credit statistics. Such information on the banking sector's exposure to particular industrial sectors serves both monetary policy and financial stability purposes, because sectors may experience different economic shocks and may respond to them in varying degrees.

5 Data on Securities

The Bank of England collects data from Issuing and Paying Agents (IPAs) on debt securities in order to compile higher quality and more accurate statistics to feed into the National and Financial Accounts. IPAs are agents that act on behalf of the issuers of securities, and are normally banks that act as an intermediary. The survey covers different product types and requires information on the type of security, the interest rate, where the product is listed, in which currency it is denominated, the issue price, amounts issued and redeemed during the month and the subsequent amount outstanding at the end of the month.

Prior to the introduction of this survey, the majority of information on securities was collected using a range of commercial data providers in conjunction with publicly available information. However, this did not capture redemptions and, as such, failed to identify such funds returning to investors. The Bank has concluded that the introduction of the monthly survey of IPAs has been valuable for the production of securities statistics in the UK. These statistics are used internally as well as feeding into the National and Financial Accounts.

The ECB is currently building a Centralised Securities Database (CSDB) with the aim of creating a source of comprehensive, reliable and up-to-date information on issuance and holdings of securities within the euro area. Under Article 5 of the Statute, it is the ECB's responsibility to ensure that these statistics are harmonised where necessary and remain relevant and accurate as securities business evolves. As such, the ECB concluded that the best way to ensure the correct treatment of securities is to compile a reference database of securities which euro area residents are likely to hold or transact in. This reference database will contain essential information about the securities, such as unique identifier, outstanding amount, nature of the instrument, currency, coupon and payment date(s), sector and country of residence of issuer, maturity as well as current market price etc and will ensure a more structured way of reporting securities data.

6 Price Data

As well as the stocks and flows of financial activity, information about the *prices* at which that activity takes place (i.e. interest rates and yields, and exchange rates) is useful in assessing monetary conditions. Since the short-term interest rate is nowadays the main instrument of monetary policy in most economies, it is important to assess how changes in the official interest rate pass through to other rates; those rates can give information on the market's expectations of future rates and its expectations of inflation (particularly where yields on inflation-index-linked securities and on conventional securities are available). Where a particular segment of measured economic activity occurs at a *range* of interest or exchange rates, it is useful to construct a rate *weighted* by the volume of business done at the various rates.

Most central banks, including the Bank of England, compile and publish a large number of interest and exchange rates. Most of these are rates observed in the market; but the Bank of England also collects a series of 'effective' or 'average' interest rates from banks, for deposits from and borrowing by each domestic non-MFI sector. The construction of these interest rates takes the volume of business in each particular type of deposit or loan into account. Several other developed countries also collect equivalent statistics. Similarly, the Bank constructs effective exchange rate indices for sterling and other major currencies, using trade weights calculated by the International Monetary Fund, as well as yield curves for British government securities.

7 Financial Stability Issues

The Bank is responsible for maintaining the stability of the financial system. This involves monitoring/analysing key statistical information in order to identify potential risks to UK financial stability. The Bank draws on various statistical sources to achieve this objective.

The data collected from the UK banking system have become a key input into the process of monitoring the stability of that system. The data feed into regular internal analysis of key changes in the banking system and contribute to the Bank's publications on the stability of the financial system.

The data requested for analysis of risks to financial stability vary over time as issues become more or less prominent. A key source of information is formed by the sectoral and industrial lending data, which allow analysis of the banking system's exposure to particular areas of the economy.

There has been increasing interest in the use of 'supervisory' data in macro-prudential financial stability analysis. The Bank collects 'supervisory' data on behalf of the FSA and has access to these data through the Memorandum of Understanding between the Bank, the FSA and the Treasury.[34] The memorandum encourages regular information exchange between the organisations in order to minimise the reporting burden. The supervisory data contain much information of interest to financial stability analysis and are difficult to obtain from other sources. For example, capital adequacy data are available for all UK incorporated banks, so information such as the risk asset ratios and risk weighted assets can be analysed. This can be used to consider topics such as changes in risk appetite of the UK banking system as a whole or for particular 'peer' groups of banks within it.

The 'supervisory' data are provided primarily on a consolidated basis, combining all the activities of a bank and its subsidiaries in the UK and abroad. These are unlike 'statistical' data that are largely available on an unconsolidated basis. This information is of great use for analysis of the UK banking system as it is dominated by a small number of large banking groups which, due to their size, pose a potential systemic risk. Consolidated data allow a better assessment of the true risks faced by a banking group, as the exposures of the group as one entity are analysed rather than the exposures of its separate parts.

Income and expenditure data are also useful for Financial Stability purposes (for further details see Section 10.1. *Data for National and Financial Accounts*). This includes industry detail on interest, product detail on fees and provisions data.

[34] Available at http://www.bankofengland.co.uk/financialstability/mou.pdf.

8 Financial Soundness Indicators

The development of indicators of financial soundness by the IMF responded to the need for better tools to assess the strengths and vulnerabilities of the financial system. Financial Soundness Indicators (FSIs) have emerged principally out of the increasing number of financial crises that occurred during the 1990s (for example in Mexico, Asia and Russia). These crises led to a growing recognition among the international community that there was a need for a set of financial stability statistics for the purpose of supporting national and international surveillance of financial systems. FSIs are designed to be indicators of the current health and soundness of the financial institutions in a country, and of their corporate and household counterparts. They are intended to assist, not replace, any current macro-prudential surveillance undertaken by individual countries. The project to encourage compilation and publication of FSIs is carried out under the auspices of the International Monetary Fund, and all IMF affiliated countries are encouraged to participate.

The FSIs themselves are 39 indicators,[35] classified as either 'core' (priority to complete) or 'encouraged' (requested but not compulsory). Each one will be a ratio examining one aspect of a reporting country's financial system (examples include 'return on assets' or 'regulatory capital to risk-weighted assets'), to facilitate the early identification of any trends in the data that may pose a financial stability issue, so that appropriate action can be taken. Participating countries are now preparing for the compilation of FSIs as part of a voluntary coordinated compilation exercise in 2006.

[35] A full list of the FSIs can be found at http://www.imf.org/external/np/sta/fsi/eng/fsi.htm.

Box D Derivatives[36]

Financial derivatives were first specified as separate instruments in their own right in the SNA93 and associated international statistical manuals. Their essential characteristic is that they take value from the underlying security, index or other independent variable to which each derivatives contract is linked, according to the terms agreed between the parties to the contract.

The range of contracts includes options, forwards, futures, swaps, warrants and credit derivatives. Contracts may be issued in basic 'vanilla' form or can be linked together in more complex trades, one risk/product with another, or included in so-called structured trades with debt securities – in such cases the derivative is attached to, or embedded with, the parent security.

Measurement and related issues

At the current time, the derivatives category is probably the only financial instrument that is measured fully according to market value – i.e. volume multiplied by price. These data are readily available, due to standardised regular risk monitoring and price revaluation procedures applied to banks' derivatives trading books. In the UK, data are collected on gross asset and gross liability positions (potential profit and loss respectively).

The statistics on positions are at present compiled quarterly in line with UK national accounts precepts, but also every six months for the global positions of major financial institutions, on a consolidated nationality basis.

[36] For more details, see CCBS Handbook No. 17, 'Financial derivatives'.

Box D Derivatives (continued)

Triennial survey

There is a triennial survey of turnover and amounts outstanding of foreign exchange (FX) and certain over-the-counter (OTC) derivatives. This is undertaken by central banks as part of a global initiative led by the Bank for International Settlements. Foreign Exchange covers spot, forward and swap transactions, whereas the OTC derivatives section includes cross-currency swaps and options, and single-currency interest rate derivatives.

The *turnover* part of the survey is completed on a locational basis, by all institutions resident in the UK that participate in the inter-dealer market and/or have an active business with large customers. For the UK, as the London FX market in particular is strongly concentrated it is not necessary to survey the entire population; rather, it is possible to obtain very high coverage via a targeted survey of around 100 institutions.

The *amounts outstanding* part of the survey is completed only by UK-owned institutions, and is reported on a worldwide consolidated basis. The data are requested on a similar basis to the six-monthly statistics, but for a wider reporting population.

A summary of the global survey results can be found via the BIS website at http://www.bis.org.

Developments in official statistics.

The measurement and presentation of derivatives in official statistics is still at a relatively early stage. In the UK, the Office for National Statistics is studying the conceptual and practical issues that will need to be resolved before the collective data on derivatives can be integrated into the national accounts.[37] In the international context, the BIS Committee on the global financial system (CGFS) published a study on credit risk transfer in January 2003 - this led to the decision to extend global statistical coverage of the derivatives business of major financial institutions to credit default contracts, with effect from December 2004.

Derivatives and measures of money

The international standards specify that the current market value of derivatives contracts should be included on the balance sheets of the money-creating and money-holding sectors. On the liabilities side of the money-creating sector, it is unlikely that derivatives have sufficient monetary characteristics (liquidity and capital-certainty) to be included in 'money'. On the assets side it may be preferable to include them, along with the comparable liability positions, within a category such as the 'net non-deposit liabilities' of the money-creating sector, especially as the money-creating sector essentially manages its derivatives business on a net basis.

[37] See Semken, G. (2005), 'Financial derivatives in the UK sector balance sheets and financial accounts', *Economic Trends*, Office for National Statistics, May, pages 37-44.

9 International Frameworks and Co-operation

Consistency across areas of monetary and financial statistics is achieved within the framework of the European System of Accounts (ESA 95). ESA 95 is based on the System of National Accounts 1993 (SNA 93). SNA 93 was produced by five international organisations.[38] It was approved by the Statistical Commission of the United Nations. ESA 95 was adopted into EU law by Regulation (EC) No 2223/96 of 25 June 1996. All economic statistics supplied to the European Commission must comply with it. The ONS decided in 1998 to have one version of UK National Accounts consistent with ESA 95 and has produced the National Accounts on this basis since September 1998.

9.1 Compilation of statistics at the European Union level

At the European Union level, a *Memorandum of Understanding* sets out the respective areas of responsibility in economic and financial statistics at the ECB and the European Commission. The ECB has prime responsibility for money, banking and financial markets statistics. Responsibility at EU level for balance of payments statistics and, within the framework of national accounts statistics, for financial accounts and related statistics is shared between the ECB and the Commission. The Commission has prime responsibility for general economic statistics.

In the *Committee on Monetary, Financial and Balance of Payments Statistics (CMFB)*, statisticians from Eurostat and the national statistical institutes, the ECB and national central banks are represented. The CMFB was established by Council Decision in 1991 to assist the European Commission in drawing up and implementing work programmes concerning monetary, financial and balance of payments statistics, and to offer opinions on these areas of statistics and on their links with other areas of economic statistics, in particular national accounts. The context was the need to make statistical preparations for Economic and Monetary Union (EMU).

The CMFB is an independent committee with advisory functions; it has no legislative powers. The CMFB takes part in the process of co-operation between the ECB and the Commission. Internal rules of procedure for the CMFB deal with consultations to get opinions on public finance data, underlying the Excessive Deficit Procedure.[39] These procedures follow a Code of Best Practice which guides the compilation and reporting of government accounts. The Code adopted by the Ecofin[40] Council in February 2003 assigns the compilation of the government finance statistics to the national statistical institutes and where applicable to the national central banks. The

[38] Eurostat, IMF, OECD, UN, and the World Bank.
[39] The requirement to avoid excessive deficits is laid down in Article 104 of the Treaty. The reference values of 3% and 60% for the general government deficit ratios and debt-to-deficit ratios as a percentage of GDP respectively, are specified in the Protocol on the excessive deficit procedure annexed to the Treaty.
[40] Ecofin consists of the economic and finance ministers from each Member State, and is sometimes referred to as the Council of Finance Ministers.

implementation of the *Action Plan on EMU Statistical Requirements (EMU Action Plan)* was endorsed by the Ecofin Council, in September 2000. Annual progress reports are prepared by the Economic and Financial Committee. The EMU Action Plan aims to progress the production of national data series to permit the timely compilation by the Commission of reliable key statistics for the euro area and the EU with at least 80% coverage of Member States' data.

The EMU Action Plan includes a list of *Principal European Economic Indicators* (PEEI) which are scheduled to be published in the near future. The PEEI list was established and approved by the Statistical Programme Committee (SPC) in September 2002, taking into account the priorities of the main users (ECB, DG ECFIN). The PEEI list covers a broad range of non-financial macro economic statistics and sets out tight deadlines for their production and for other quality objectives. Release dates and revisions for EU indicators are to be co-ordinated with release calendars of the respective national contributions. Ideally, EU indicators should be published at the same time as the indicators of the larger countries.

9.2 International Monetary Fund (IMF)

The IMF has published Special Data Dissemination Standards (SDDS) and the General Data Dissemination System (GDDS) to guide member countries in the provision of economic data to the public.

IMF manuals on statistical methods, such as the *Balance of Payments Manual*, the *Government Finance Statistics Manual* and the *Monetary and Financial Statistics Manual*, are harmonised with the *System of National Accounts 1993 (SNA 93).* This provides a convenient way of ensuring consistency between monetary statistics and general macro-economic statistics. The purpose of the *Monetary and Financial Statistics Manual* is to offer guidelines for the presentation of monetary and financial statistics.

The IMF's principal statistical publication *International Financial Statistics (IFS)* has been published monthly since 1948 and contains country tables for most Fund members, including separate data for the euro area as a whole.

9.3 Bank for International Settlements (BIS)

The Bank for International Settlements (BIS) focuses on two main areas. It provides an institutional framework for cooperation in monetary and financial areas, as well as acting as a bank for central banks and international organisations, providing services related to their financial operations.

The BIS collects international banking statistics, as well as securities and derivatives statistics from the major central banks. These data are then aggregated to provide a worldwide view of the international financial market. The quality of the BIS international financial statistics is largely based on the IMF's Data Quality Assessment Framework (DQAF).[41]

9.4 Organisation for Economic Co-operation and Development (OECD)

The OECD is actively involved in a wide range of conjunctural and policy analysis, and undertakes extensive statistical work in support of these activities. Member countries support this work through participation in the Organisation's committee structure. In the field of financial statistics, strategic direction is provided by the Committee on Financial Markets and the Committee on International and Multinational Enterprises. These 'parent committees' oversee a number of working groups and task forces, including the Working Party on Financial Statistics, the Working Party on Government Debt Statistics and the Task Force on Foreign Direct Investment.

[41] The DQAF addresses issues under five dimensions of quality – namely assurances of integrity, methodological soundness, accuracy and reliability, serviceability, and accessibility. See Section 11.1 and http://dsbb.imf.org/dqrsindex.htm for more details.

10 Relationship between National Central Banks and National Statistical Institutes

In order to ensure consistent and coherent monetary and financial statistics, it is necessary for national central banks and national statistical institutes in all countries to work closely and share responsibilities for statistical reporting obligations. In the UK, the relationship between the Office for National Statistics (ONS) and the Bank's Monetary and Financial Statistics Division is governed by a 'Firm Agreement' covering the supply of data, data interpretation, quality monitoring and the development of new statistical series. Performance against the criteria set out in the Firm Agreement is monitored and forms the subject of an annual performance report by the ONS. The Bank supplies around 7,000 statistical aggregates and sub-aggregates to the ONS, many of which contribute to the detailed National Accounts and Balance of Payments published by the ONS.

This agreement is supplemented by many formal and informal meetings, including joint work in a number of areas where there is a common interest.

10.1 Data for National and Financial Accounts

In the area of annual and quarterly financial accounts, responsibility for compilation is generally shared between national central banks and national statistical institutes.

In the UK, financial and non-financial accounts are fully integrated, with consistent data sources for GDP estimates, quarterly and annual data, flows and stocks, domestic statistics and balance of payments data. Financial transactions and stocks of the financial balance sheet of the Monetary Financial Institutions sector[42] are derived from monetary statistics. In this way, the financial investment of the non-financial sectors is linked to developments in the monetary aggregates.

Full integration of banks' income and expenditure data into the UK National Accounts has moved a step closer after the Bank of England introduced a new form to collect the data at the beginning of 2004. In addition to a product breakdown of interest, which was already available, a full sectorisation of interest receivable and payable is now collected, making it possible for the ONS to reconcile data fully with those received from other economic sectors. At present, income from financial services intermediation (i.e. lending and deposit taking) is considered to have no net effect on GDP, as it is seen as property income for the Banking Sector and intermediate

[42] According to ESA 95, the Monetary Financial Institutions sector comprises the ESA 95 subsectors the Central bank (S.121) and Other monetary financial institutions (S.122), which in the UK comprise banks and building societies.

consumption for the rest of the economy. But interest receivable and payable will feed indirectly into GDP in the future, as FISIM (Financial Intermediation Services Indirectly Measured) measures are developed.

Expenditure and fees and commissions (receivable and payable) make up the bulk of the banking sector's direct contribution to GDP. Expenditure is broken down as necessary for the construction of a National Accounts top-to-bottom account for banks, and fees receivable are collected with a limited product and sector breakdown (for the calculation of current and potential service price indices).

11 Data Quality

11.1 Data Quality and Reliability Indicators

Users of economic statistics place many different, and potentially conflicting, requirements on statisticians. Data must be both accurate and timely; they must be comprehensive and cost effective; and they must be relevant to the particular circumstances of the domestic economy while remaining comparable with data for other countries. The relative importance of these, and other, criteria varies with specific user needs, so that no unique quality ranking can be derived.

Quality assessment thus implies a multi-dimensional approach. As a first step, it requires a set of high level criteria – such as relevance and accuracy - to be defined. Thereafter, tests of compliance with these criteria must be developed. In many cases these tests give rise to qualitative statements rather than a numerical score.

In practice, no unique set of high level criteria has been agreed. For example, the IMF's Data Quality Assessment Framework (DQAF)[43] and a European Commission (Eurostat) report[44] have established five and seven high level criteria respectively for data quality assessment (Table 1).

Table 1: Criteria for assessing data quality

IMF framework	Eurostat framework
Integrity: Firm adherence to the principle of objectivity in the collection, compilation and dissemination of statistics	
Accessibility: Clear data and metadata are easily available and assistance to users is adequate	Accessibility
Serviceability: Statistics are relevant, timely, consistent, and follow a predictable revisions policy	Relevance
	Timeliness
Methodological soundness: The conceptual basis for the statistics follows international standards, guidelines and agreed practices	Comparability
	Coherence
Accuracy and reliability: Source data and compilation techniques are sound, and disseminated data sufficiently portray reality	Accuracy
	Completeness

[43] Carson, C. (2001), 'Toward a framework for assessing data quality', *IMF Working Paper No. 25*, available at http://www.imf.org/external/pubs/ft/wp/2001/wp0125.pdf.

[44] Quality report prepared for the 14th meeting of the IMF Balance of Payments Working Group: Eurostat, October 2001, available at http://www.imf.org/external/pubs/ft/bop/2001/01-42.pdf.

Quality criteria

Both the IMF and the Eurostat frameworks were designed for the assessment of entire statistical systems and processes. As a consequence, the high level criteria in Table 1 are intended to address wider questions about the statistical infrastructure, as well as comparisons between families of statistics or individual series. Thus, in developing indicators of 'integrity', the IMF is concerned with factors such as the legal and institutional arrangements for data collection; the professionalism of statistical staff; and the independence of statistics from political interference. Similarly, tests of 'accessibility' include procedures for the pre-announcement of release dates and standards for the simultaneous release of data to all users, as well as questions concerned with ease of access and availability of methodological notes.

For users who wish to interpret a specific data point, tests of integrity and accessibility may be of secondary importance, though they still need information on a few other criteria to assess data quality. The timeliness and periodicity of data normally affects the usefulness of the information – 'serviceability' in IMF terms – while the consistency of the data with established schemes of classification or accounting frameworks determines the user's ability to place the information into context. But, for many users, it is some notion of 'accuracy' which is often synonymous with data quality.

The IMF framework develops the linked concepts of accuracy and reliability. Accuracy refers to the closeness of the estimated data to the generally unobservable 'true' value, while reliability refers to the closeness between initial and final data estimates. In general, the accuracy of a specific data observation increases over time as more information becomes available or as the checking of source data proceeds.

Measuring the accuracy of a series can be problematic. Where data are randomly sampled from a large population, measures of dispersion around the theoretical, but unobservable, true value can be derived. But if the underlying population is relatively small and highly skewed, or if the source data are volatile from period to period, then standard statistical indicators of accuracy may be more difficult to extract and to interpret.

By contrast, analysing the reliability of data is theoretically straightforward. When data are first released as a preliminary estimate and subsequently revised, eventually to become a final estimate, the size and direction of revisions are directly observable. Over time, the reliability of the first estimate as a guide to the final data can be expressed both in terms of likely bias or scale of future revisions, based on previous experience. Such information should be helpful to a user seeking to interpret the most timely data estimates.

Revisions and reliability

In general, it is probably reasonable to say that 'accuracy' is concerned with the design of the collection system and the compilation methods, while 'reliability' concerns the practical implementation of collection and compilation.

Revisions to first data estimates can occur for many reasons. In some cases, they represent the price users pay for more timely statistics: for example, the incorporation of information that was not available to compilers at the earlier release date; or corrections to source data resulting from the identification of errors or the incorporation of more robust raw data estimates. In other cases, revisions may be a result of the introduction of methodological changes. The latter can include changes to improve the accuracy of the compiled statistics, and/or changes to reduce the cost of their production.

Revisions, or the lack of them, can also result from a policy choice. Some statistics are not revised, or are only revised within the confines of pre-announced guidelines and timetables. A non-revision policy may exist where the statistic is widely used for administrative purposes. In the UK, the Retail Prices Index (RPI) is perhaps the best known example of a statistic subject to such a restriction.[45] But a wide range of other macroeconomic statistics are open to revision only at predetermined dates and are frozen in other periods, even when changes have occurred within the underlying data used for their compilation. Such restrictions are typically imposed to preserve the coherence of a complex body of statistics, such as the National Accounts.

Reliability indicators must therefore be interpreted with some care. Statistics which score as highly reliable should not automatically be interpreted as 'better statistics' than those with a lower score. Reliability scores do provide users with an indication of how much weight to place on a first release of data, that is, the extent to which the first data release can be taken as a reliable guide to the final – best – estimate of the data to be published at some date in the future.

11.2 Aims and Standards – A Code of Practice

There is value in stating explicit *aims* for the statistics function of the central bank. This can help establish the credibility of the statistics. It can also be used as a permanent reminder of: (a) the prime importance of providing accurate and timely statistics; (b) who the customers are and which benefits they derive from the statistics (so that due attention is given not just to policy-makers but also to those outside the official circle, to enable them to form their own assessments of the data);

[45] The Consumer Prices Index (CPI) is now the main measure of inflation for macroeconomic purposes and is, in principle, revisable. Until 10 December 2003, CPI was published as the UK Harmonised Index of Consumer Prices (HICP). Revisions are governed by European Commission procedures as harmonised indices of consumer prices are calculated in each member state of the European Union for the purposes of European comparisons, as required by the Maastricht Treaty.

and (c) the need to take into account the costs of producing the data, both to the central bank as compiler of the statistics and to the suppliers of data (primarily the UK banking system in the case of the Bank of England).

Similarly there is value in amplifying these aims by publishing and following a *Code of Practice*, ultimately based on the UN's 'Fundamental Principles of Official Statistics'. The Bank of England has a Code, which contains standards for the quality of financial data compiled and produced by the Bank.[46]

Putting in place structures to ensure data quality is at the heart of the Bank of England's Code of Practice. The Code identifies seven key aspects of statistical good practice. These concern the relevance, integrity, quality and accessibility of its outputs, the confidentiality of its inputs, the burden on data suppliers and the overall cost efficiency of the business process.

11.3 Legal Powers

Central banks and statistical agencies generally have specific legal powers to collect statistics and responsibilities derived from these powers to use them fairly and to preserve the confidentiality of the data supplied. By way of example, the Bank of England's statistical powers are specified in Section 17 and Schedule 7 of the Bank of England Act 1998 and in secondary legislation adopted pursuant to the 1998 Act. These provisions specify the range of institutions from which (and purposes for which) information can be collected and the type of data that can be collected. They require the information collected to be kept confidential and specify in which circumstances the Bank may disclose such information. The Bank of England preserves confidentiality mainly by flagging aggregates for any variable which are based on 2 or fewer respondents. Such cells can only be published subject to the written agreement of the responding institutions. The Bank of England's statutory powers also provide for legal proceedings to be instigated if respondent institutions refuse to provide data or knowingly or recklessly provide inaccurate data.

11.4 Methodological Issues

Reporting populations and cost benefit analysis

A central bank needs to be aware of the burden its data collection function places on respondents. That reporting burden should be kept to 'an acceptable level consistent with legislative requirements and balancing the needs of users against the demands on suppliers'.[47] So it is important for a central bank to establish whether the uses (or benefits) of the data it collects justify the costs to both reporting institutions and the central bank of collating these data. This trade-off

[46] Available at http://www.bankofengland.co.uk/statistics/about/code.pdf.
[47] Section 6 of the Bank of England's Statistical Code of Practice.

between the reporting burden placed on respondents and the needs of data users is the subject of the Bank's Cost Benefit Analysis project.[48] Most central banks will collect data from a subset of the population, i.e. a reporting panel, that will adequately capture the necessary information. The reporting panel chosen will usually give a high degree of coverage (unlike most other economic data, which are gathered from surveys, based on sampling techniques).

In selecting a panel to report monetary data, the Bank of England employs a 'top slicing' approach to the banking population. This approach allows high coverage of the banking sector, and implies that the reporting burden mainly falls on the largest banks as they are unlikely to be excluded from the population for most monetary statistics.

Although the Bank of England has legal powers to collect data and can impose collection regimes, it prefers to negotiate with respondents for two reasons. First, discussions with respondents help to understand the costs of the Bank's data collections and contribute to the Bank's efforts to keep these costs to a minimum without compromising data quality. Second, advance discussions with respondents allow the Bank to obtain a better understanding of the particular markets its data collection covers. Data requirements can then be kept more consistent with existing business or reporting practices.

Sample size

Use of sampling. Sampling can be used for forms that are not needed frequently or for ad hoc surveys between full reporting dates. This avoids the cost of all respondents reporting at every reporting date. How these samples are chosen depends on the structure of the banking system. For example, if business is heavily concentrated (as generally is the case in the UK) and volatile, a 'top-sliced' sample, comprising the larger institutions, is necessary for accuracy of the total, rather than a sample spread across all different sizes of institutions.[49] But if the data are also needed for administrative purposes, such as reserve requirements, there may be less scope for sampling. Moreover, in smaller countries with a small number of banks there may also be less scope for sampling.

Random sampling will provide an unbiased sample – but for collection of banking data, this is likely to exclude some of the larger institutions which are important when compiling aggregates. Stratified sampling might also be employed for some data collections (i.e. sampling within selected strata) but again, without full coverage of the larger institutions the impact on data quality could be

[48] See Holder, A. (2005), 'Cost benefit analysis workshop, 14-15 July 2005', *Monetary and Financial Statistics*, Bank of England, September (http://www.bankofengland.co.uk/statistics/ms/articles/art1sep05.pdf).
[49] The way in which the reporting panels for each form were chosen in the UK is described in articles in *Monetary and Financial Statistics* in May and October 1997. The resultant guidelines are incorporated in the general reporting instructions, so that actual and potential reporters have an advance indication of when they are likely to be added or removed from the various panels. The Bank is currently reviewing its reporting panels, as part of its Cost Benefit Analysis project.

considered too great. An alternative would be stratified sampling but taking all the top strata(s) to ensure the larger institutions are covered, and then sample increasingly lightly moving down the stratas.

Imputed data

In order to minimise the compliance burden on reporting institutions not all enquiries are completed by the full population. In this case, for the aggregate statistics to cover the full reporting population a process of grossing up is necessary. Grossing up can be achieved in a number of ways and in the Bank it is carried out by the creation of imputed data referred to as 'virtual' data.

'Virtual' data represent a reporting form for those banks who have not reported. For example, the core balance sheet return is reported by all banks on a quarterly basis, but only banks over a certain balance sheet size report monthly, so a 'virtual' monthly form is created for the quarterly reporting banks. This is achieved by spreading the difference between one quarter and the next evenly such that an item that is reported as 100 in Q1 and 400 in Q2 has two interim months created as 200 and 300 respectively. This type of 'virtual' data is known as 'frequency converted'. This procedure is also applied for quarterly observations for institutions which report certain data annually. In these cases, a more complicated spreading procedure is used whereby the trend over the year observed from quarterly reporters is applied to the annual reporters.

The other main type of 'virtual' data is for those banks who do not report a form at all. Here a form is generated by using data from other forms which are reported by these banks or from other banks who do report the particular form. This type of 'virtual' data is known as 'generated'.

Seasonal adjustment

Many economic statistics are subject to seasonal influences, which means that they show a typical movement according to the specific time of the year. In order to obtain an insight into the underlying activity this seasonality can be removed from the raw data using a variety of methods. The Bank of England uses X-12 ARIMA, the latest in a range of seasonal adjustment methods developed over several decades by the US Census Bureau and Statistics Canada, with contributions from others. X-12 ARIMA is better able to deal with the seasonal characteristics of individual series than less sophisticated models.[50]

Deriving flows from stocks

Some countries calculate their monetary aggregates in terms of stocks only. But larger countries follow the recommended practice in the IMF manual to calculate flows. The international

[50] For more details, see Thorp, John (2003), 'Change in seasonal adjustment method to X-12-ARIMA', *Monetary and Financial Statistics*, Bank of England, December (http://www.bankofengland.co.uk/mfsd/article/artdec03.pdf).

standards for national accounts (SNA93) should be used to distinguish flows (or 'transactions') from other factors that can affect balance sheet levels. This will avoid flows being calculated simply as changes in reported data for stocks.

Particular examples from SNA93 are:

Exchange rate effects. The domestic-currency value of deposits, loans and other balance sheet items in foreign currency will change as exchange rates vary. It would be too costly to collect data on the individual transactions in foreign currency items. So flows are estimated by using information on the currency split of the stocks and movements in exchange rates between two reporting dates. This process works as follows. Stocks of foreign currency items reported in domestic currency are expressed back into their original currency, so that the flow over the accounting period can be calculated in the original currency. This derived flow is then expressed in domestic currency terms by using the average exchange rate over the period.

Other valuation effects. Similarly, other valuation changes (e.g. in securities because of changes in market price, or in these and other liabilities and assets because reporters change their valuation method) have to be excluded to arrive at flow statistics. In homogeneous markets (e.g. in government securities), but also in more heterogenous markets, there may be scope to rely on estimates to exclude this type of valuation effect (for example using market indices for asset prices). Data on flows of securities can also be collected directly or by asking reporters explicitly for details of changes in valuation, such as write-offs and other revaluations of securities and investments. The reporting of such data inevitably involves imposing a higher cost burden on reporting institutions than the use of price indices.

Changes of sector. When institutions change sector (e.g. because they are privatised or change their country of residence), the effect of the shift of the institution's balance sheet from one sector to another needs to be excluded from the flow statistics.

Restructuring of a corporate group. The international statistical standards give less explicit guidance on whether to include in the flow statistics the balance sheet movements caused by a corporate group's restructuring of its internal organisation (e.g. the hiving off of business by a bank into a non-bank subsidiary). The UK's practice in its banking and monetary statistics is to exclude from the 'flows' the internal group effects of the initial restructuring, but to allow any subsequent transactions between the parts of the group to affect the flow statistics.

Misclassifications. If it is impossible or too costly to backdate the correction of an error to its beginning, the impact of the correction (e.g. of an error in sector classification) on stocks of business should be excluded from the flows.

Growth rates

There are a number of ways of calculating growth rates for statistics, but it is important that the method of calculation is transparent. A 'change' or 'flow' for each period is produced, usually by calculating the difference between the opening and closing levels and then excluding the effects of any breaks in series, changes in valuation etc. The growth rate for the current reporting period is then calculated as the current-period flow divided by the opening level.

One-period growth rate (in %): $g_t = Y_t * 100$ where $Y_t = \frac{flow_t}{level_{t-1}}$

The three, six and twelve-month rates are calculated by concatenating the one-month rates (rather than dividing the flow for those longer periods by the opening level) to avoid distortions where there are breaks in the series.

E.g. three-month (annualised) growth rate (in %): $(((1+Y_t)*(1+Y_{t-1})*(1+Y_{t-2}))^4 - 1)*100$

12 Business Processes Supporting Statistical Compilation

Efficient data compilation is a key precursor to data analysis. Central banks need to ensure that their data are produced on time, as well as validate and check data for plausibility (data cleansing). This involves a degree of contact with the reporting institutions to check that they fully understand their reporting obligations and can ensure accurate data are transmitted to the central bank.

12.1 Electronic Reporting

Where the same respondents send standard forms or files to the central bank on a regular basis, it makes sense to automate that process using some form of electronic data transmission and storage. Files can be transmitted via private networks or (with suitable security precautions) over the Internet. Some central banks have made such systems compulsory, at least for the larger reporting institutions. The Bank of England has chosen a voluntary system, but larger institutions are strongly encouraged to use electronic data transmission.

The software used to prepare files for transmission also incorporates the standard validation checks used by the Bank. This enhances accuracy and timeliness of the data by allowing banks to check that their data are valid before transmission.

12.2 Data Cleansing

Cleansing of data and the creation of aggregates require processing of reported data across various dimensions (for example residency, currency, institution, instrument-type, and time period). During cleansing and aggregation in a production cycle statisticians need to assess the relationships between data across all these dimensions.[51] The business processes involved are often repetitive and place a heavy reliance on consistency. So many of the business rules (i.e. the needs of policy-makers, administrators and analysts) are incorporated in the database application. A suitable database should be able to process data across many dimensions and provide tools to incorporate business rules in the database. A 'relational database management system' is an example of such architecture; there are numerous suppliers of this type of technology.

[51] See Box E 'The life of a datum – Bank of England example' for details on data cleansing.

Box E The life of a datum – Bank of England example

Where it begins – Banks are required under the Bank of England Act 1998 to report data to the Bank in a timely and accurate fashion. The Bank of England issues instructions on how data should be reported, ranging from general definitions to details on how to classify a customer account. The forms, definitions and the criteria for reporting are available in paper form, or on the Bank of England website (http://www.bankofengland.co.uk/statistics/reporters/defs). Banks are also given an annual reporting schedule.

Data transmission

Banks send their data to the Bank either on paper, or electronically, with the latter the preferred (and growing) system. Banks can either set up their own system using the Bank's technical specification (see http://www.bankofengland.co.uk/statistics/reporters/electronic) or use a software company recognised by the Bank of England. These companies ensure that the validations in the definitions folder are built in to the software solutions, so that simple mistakes are corrected early in the data compilation process.

Banks transmitting data electronically send an encrypted file either via a modem to the Bank's mailboxes or via Internet e-mail to a dedicated address at the Bank. Once received, the Bank decrypts the data (ensuring the sender is correct and checking for a digitised signature) and the Bank's systems confirm whether the form is in the correct format. The guidelines for this are very strict and the reporters have to adhere to all formatting and validation rules.

Box E The life of a datum – Bank of England example (continued)

Data cleansing

If the data are in the correct format, they are processed by the Bank's in-house statistical system, which checks the validations. These validations are a list of arithmetic checks, which can range from simply stating that total assets must equal total liabilities on a balance sheet return, to validations that span a variety of different returns. If any validation is not met, the system highlights this and the reporting bank is asked to amend its reported data.

Once validated, these data are checked by analytical teams within the Statistics Division, who run reports on the plausibility of the data. The parameters for each report are set by the analysts and may differ according to the type of form. The reports look at each cell on each form for each bank. If movements are unusual or go against trend, questions may be raised on an individual bank basis. These include asking for a detailed breakdown of the movements in a cell between two reporting dates. The majority of banks provide customer names, which allows the Bank to check that these have been allocated to the correct boxes on the forms. Banks know that this information is confidential, and is used purely for statistical purposes. For example, the Bank may be aware that a large company was taken over and that the funds were provided by banks in the UK, so answers to Bank questions are likely to reflect this. When all data for a form have been received, the Bank often runs 'secondary' checks, to look at the largest and smallest movements in the population for every box. This may lead to additional questions being raised with banks.

Publication

Once data have been cleansed, they need to be aggregated, adjusted for seasonal effects, checked for confidentiality etc. The Bank of England does not publish data at the individual bank level, but only in aggregate. If there are fewer than three contributors to any particular series, the banks concerned are asked to give their permission to publish their data. If permission is declined, the data are suppressed.

Statistical data are published in press releases, *Monetary and Financial Statistics* and on the Bank's Statistical Interactive Database (http://www.bankofengland.co.uk/mfsd/iadb).

Forms

Data are typically captured on a number of Forms or Returns, which can be of varying frequency and may have a different coverage (for further details see Box F: Introducing a new reporting form).

Box F Introducing a new reporting form

A new reporting form might need to be introduced for several reasons. For example, new types of instrument or trading activity may develop. It is not always possible, or desirable, to force the measurement of these new instruments into the existing suite of returns, so a new return may need to be developed. This was the case with derivatives trading, which led to the introduction of a new return in the UK in 1998. International statistical standards can change significantly over time, which may lead to changes in the basis of a return. In these cases, it may be preferable to replace an existing return with a new return to add clarity to the change; this was how compliance with the European System of National and Regional Accounts 1995 (ESA 95) was handled in the UK.

Before a new return is introduced, the Bank ensures that it has a clear understanding of the need for the data and that the data cannot be obtained or approximated from an existing source. Once the need is established, the benefits of collecting the data are weighed against the potential additional reporting burden placed on the banking sector. This is a difficult balance to assess, but necessary in order to keep reporting costs to a minimum. It is essential to engage with the banking industry (which, in the UK, is undertaken through the relevant trade organisation) at the earliest possible stage to help understand which data are readily available and which elements are difficult to measure. For example, banks may find it easier to report balance sheet levels at a particular moment in time rather than a total of transactions over a period of time, as the latter requires the reporting of large and complex volumes of data.

The next stage is form design and definitions. Again, it is essential to engage with the industry to ensure that the item titles and definitions use the correct terminology and are unambiguous. People working in statistical departments rarely have the appropriate market experience to write definitions to ensure consistent and correct reporting. Communication with the banking industry is effectively a negotiation phase. Discussions will include not only the definitional and complexity issues already mentioned but also the potential reporting population, the required frequency for the data, the lead-in time for preparation, and the timescale allowed for each return to be submitted. The central bank should allow as much lead-in time for preparation as possible. As a guideline, at least a year should be allowed between the final specification for the return and the first submission date. The timescale allowed for each return to be submitted is another balancing act between the needs of the data providers and the data users.

The providers of software packages to the banking sector should also be kept informed about the potential introduction of a new form. Electronic transmission of the data speeds up the compilation process and helps to check accuracy. In addition to the forms and definitions, a list of arithmetic validations is published with each return. These validations are built in to the software solutions that commercial companies offer data providers, so simple mistakes are corrected as early in the data compilation process as possible.

Box G Statistical outputs - Publication and dissemination

The next stage in the data compilation process requires the central bank to decide which aggregate data it will publish and in what format. The Bank of England now publishes nearly all its data on the internet only, both via statistical releases and on its Statistical Interactive Database.

The Bank of England's statistical outputs traditionally took the form of paper press releases, containing key monetary and financial series, for example *Lending to individuals* and *External business of banks operating in the UK*. Since the start of 2006, all statistical releases are published on the internet only. Key data releases are also made available on wire services through some of the larger news agencies. The Bank's statistical releases are supplemented by a monthly data compendium - Bank of England: *Monetary & Financial Statistics (Bankstats)*, containing the key series and other, supplementary series and metadata of potential interest to users. In addition, *Bankstats* is the vehicle for publishing articles on current issues in monetary and financial statistics, and technical pieces on new or modified data series. Currently, *Bankstats* is published in paper form twice a year.

The Bank's Statistical Code of Practice contains a section on accessibility. The key principle is that the release of, and access to, statistics published by the Bank takes place in an orderly and transparent manner. The Code sets out the circumstances where early access is allowed and the controls governing this.

Use of the internet for data dissemination was further advanced with the introduction of the Statistical Interactive Database (SID) in 2003 (http://www.bankofengland.co.uk/mfsd/iadb). The SID gives users various search options to find the data they are interested in, and also allows users to choose the time period and extent of metadata required. Data can be downloaded in several formats (HTML, CSV, Excel and XML). The SID provides the opportunity to expand data outputs when users express a new interest in, for example, euro denominated series that were previously aggregated with other foreign currency series. The SID is flexible because it has neither the space constraints of paper publications, nor the time constraints and website construction issues that are currently associated with posting individual releases or tables on the internet.

In line with the IMF's Special Data Dissemination Standards, the Bank of England publishes an Advance Release Calendar for its statistical publications (http://www.bankofengland.co.uk/statistics/Calendar/2006.htm). Data are released simultaneously through the various media, at 9.30am on the publication date.

CCBS HANDBOOKS

The text of all CCBS handbooks can be downloaded from our website at
www.bankofengland.co.uk/education/ccbs/handbooks_lectures.htm

*These **Handbooks** are also available in Russian, Spanish and Arabic – see annotations (R) (S) (A) .*

Handbooks in Central Banking

No	Title	Author
1	Introduction to monetary policy (R) (S)	Glenn Hoggarth
2	The choice of exchange rate regime (R) (S)	Tony Latter
3	Economic analysis in a central bank: models versus judgement (R) (S)	Lionel Price
4	Internal audit in a central bank (R) (S)	Christopher Scott
5	The management of government debt (R) (S)	Simon Gray
6	Primary dealers in government securities markets (R) (S)	Robin McConnachie
7	Basic principles of banking supervision (R) (S)	Derrick Ware
8	Payment systems (A) (S)	David Sheppard
9	Deposit insurance (R) (S)	Ronald MacDonald
10	Introduction to monetary operations – revised, 2nd edition (R) (S)	Simon Gray, Glenn Hoggarth and Joanna Place
11	Government securities: primary issuance (R) (S)	Simon Gray
12	Causes and management of banking crises (R) (S)	Tony Latter
13	The retail market for government debt (R) (S)	Robin McConnachie
14	Capital flows: causes, consequences and policy responses (R) (S)	Glenn Hoggarth and Gabriel Sterne
15	Consolidated supervision of banks (s)	Ronald MacDonald
16	Repo of government securities (s)	Simon Gray
17	Financial derivatives (s)	Simon Gray and Joanna Place
18	The issue of banknotes [(1)] (s)	Peter Chartres
19	Foreign exchange reserves management (s)	John Nugee
20	Basic bond analysis (A)	Joanna Place
21	Banking and monetary statistics (A) (s)	John Thorp and Philip Turnbull
22	Unit root testing to help model building	Lavan Mahadeva and Paul Robinson
23	Consumption theory	Emilio Fernandez-Corugedo
24	Monetary operations	Simon Gray and Nick Talbot
25	Monetary and financial statistics	Monetary and financial statistics Division

[(1)] Withdrawn from publication. An updated version will be released in due course
(A) Available in Arabic ; (R) Available in Russian; (S) Available in Spanish

Handbooks: Lecture Series

No	Title	Author
1	Inflation targeting: The British experience	William A Allen
2	Financial Data needs for macroprudential surveillance - What are the key indicators of risks to domestic financial stability?	E Philip Davis
3	Surplus liquidity: Implications for central banks	Joe Ganley
4	Implementing monetary policy	William A Allen

Handbooks: Research Series

No	Title	Author
1	Over the counter interest rate options	Richhild Moessner

BOOKS

The CCBS also aims to publish the output from its Research Workshop projects and other research. The following is a list of books published or commissioned by CCBS:-

Brealey, R, Clark, A, Goodhart, C, Healey, J, Hoggarth, G, Llewellyn, D, Shu, C, Sinclair, P and Farouk, S (2001), 'Financial Stability and Central Banks — A global perspective', Routledge.

Capie, F, Goodhart, C, Fischer, S and Schnadt, N (1994), 'The Future of Central Banking: The Tercentenary Symposium of the Bank of England', Cambridge University Press.

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Driver, R, Sinclair, P and Thoenissen, C (2005), 'Exchange Rates, Capital Movements and Policy', Routledge.

Fry, M, (1997), 'Emancipating the Banking System and Developing Markets for Government Debt', Routledge.

Fry, M, Goodhart, C and Almeida, A (1996), 'Central Banking in Developing Countries: Objectives, Activities and Independence', Routledge.

Fry, M, Kilato, I, Roger, S, Senderowicz, K, Sheppard, D, Solis, F and Trundle, J (1999), 'Payment Systems in Global Perspective', Routledge.

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Gray, S, Nell , J, (2005): ***A New Currency for Iraq,*** Central Banking Publications.

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Mahadeva, L and Sinclair, P (2002), 'The Theory and Practice of Monetary Transmission in Diverse Economies', Cambridge University Press.

Mahadeva, L and Sinclair, P (2004), 'How Monetary Policy Works', Routledge.

Mahadeva, L and Sterne, G (2000), 'Monetary Frameworks in a Global Context', Routledge. (This book includes the report of the 1999 Central Bank Governors Symposium and a collection of papers on monetary frameworks issues presented at a CCBS Research Workshop.)

*These are free publications which are posted on our web site at

www.bankofengland.co.uk/education/ccbs/publications/index.htm

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Bank of England Statistical Release

4 January 2006

Monetary and bank/building society statistical releases - publication dates 2006/2007‡

All Bank of England data are available on the Statistical Interactive Database at www.bankofengland.co.uk/mfsd/iadb

Monthly statistical releases

1. BoE ***Provisional estimates of narrow money (Notes & Coin and M0)***
2. BoE ***Narrow money (Notes & Coin and M0)*** ‡‡
3 BoE ***Capital issuance***
4 BoE ***Provisional estimates of broad money (M4) and credit (M4 lending)***
5 BBA **Major British Banking Groups' (MBBG) figures (including industrial analysis of lending etc)**
6 BSA **Building societies' figures**
7 CML **Survey of Mortgage Lenders estimates**
8 BBA **Analysis of MBBG lending to individuals**
9 BoE ***Lending to individuals***
10 BoE ***Sectoral breakdown of Aggregate M4 and M4 lending***
11 BoE ***Monetary & Financial Statistics (Bankstats)*** ‡‡‡

Data for the month ended:	1. *BoE Provisional estimates of narrow money (Notes & Coin and M0)*	2. *BoE Narrow money (Notes & Coin and M0)* ‡‡	3. *Capital issuance* 4. *Provisional estimates of broad money (M4) and credit (M4 lending)* 5. MBBG figures 6. Building societies' figures 7. Mortgage lenders' estimates	8. Analysis of MBBG lending to individuals	9. *BoE Lending to individuals* 10. *BoE Sectoral breakdown of Aggregate M4 and M4 lending* 11. *BoE Bankstats* ‡‡‡
30 Nov 05	5 December 05	12 December 05	20 December 05	29 December 05	4 January 06
31 Dec	3 January 06	9 January 06	20 January 06	27 January 06	31 January
31 Jan 06	30 January	6 February	20 February	27 February	1 March
28 Feb	27 February	6 March	20 March	27 March	29 March
31 March	3 April	10 April	24 April	2 May	4 May
30 April	2 May	8 May	19 May	26 May	31 May
31 May	5 June	12 June	20 June	27 June	29 June
30 June	3 July	10 July	20 July	27 July	31 July
31 July	31 July	7 August	18 August	25 August	30 August
31 Aug	4 September	11 September	20 September	27 September	29 September
30 Sept	2 October	9 October	19 October	26 October	30 October
31 Oct	30 October	6 November	20 November	27 November	29 November
30 Nov	4 December	11 December	20 December	29 December	4 January 07
31 Dec	2 January 07	8 January 07	19 January 07	27 January 07	30 January

‡ From 1/1/2006 paper versions of releases will no longer be published.
‡‡ ***BoE Narrow money (Notes & Coin and M0)*** provides the full Notes and Coin and M0 data for the previous month.
‡‡‡ ***BoE Monetary & Financial Statistics (Bankstats)*** includes all currently published headline statistical releases prepared by the Monetary and Financial Statistics Division of the Bank, with longer runs of these series and many other detailed data compiled by the Bank, together with background notes and occasional articles on statistical topics. Data for ***Bankstats*** are released on the Internet on these dates. The **hard copy** version of ***Bankstats*** is currently **published** only on a twice-yearly basis, please see overleaf. There is a charge for the hard copy of ***Bankstats***.

Quarterly statistical releases

11 BoE ***Monetary & Financial Statistics (Bankstats)***
12 BoE ***Analysis of bank lending to and deposits from UK residents***
13 BoE ***Mortgage Equity Withdrawal***
14 BoE ***External business of banks operating in the UK.*** *Analysis by country, currency and sector*
15 BoE ***Consolidated worldwide external claims of UK-owned banks***. *Analysis by country, sector and maturity*

Data for the three months ended:	11. *BoE Bankstats* (Hard copy version – biannual from 2004)	12. *BoE Analysis of bank lending to and deposits from UK residents*	13. *BoE Mortgage Equity Withdrawal*	14. *BoE External business of banks operating in the UK*	15. *BoE Consolidated worldwide external claims of UK-owned banks*
30 Sept 05	N/A	16 November 05	3 January 06	2 December 05	16 December 05
31 Dec	1 February 06	6 February 06	4 April	3 March 06	17 March 06
31 March 06	N/A	10 May	6 July	9 June	23 June
30 June	1 August	4 August	3 October	8 September	22 September
30 Sept	N/A	3 November	29 December	8 December	22 December
31 Dec	31 January 07	February 07	..	9 March 07	23 March 07

a) **Bank of England (BoE)** statistical releases and ***Bankstats*** are available via the **Internet** [www.bankofengland.co.uk/statistics/statistics.htm]. Longer runs of these data and other series are available on the Statistical Interactive Database (IADB) at www.bankofengland.co.uk/mfsd/iadb.

b) **Accessibility of Statistics** - Pre-publication access to monetary statistics is granted to the Monetary Policy Committee, to the Bank of England Governors and Directors, to Treasury Ministers, and to their respective advisers. Early access is granted to maximise the usefulness of the data to policy makers and those preparing supporting analysis. All arrangements for privileged early access to statistics will be subject to strict controls. A full list of posts to which privileged early access to monetary statistics is granted will be provided on request. Further information regarding privileged early access to statistics can be found in Section 4.3 (page 18) of *A Statistical Code of Practice for the Bank of England* www.bankofengland.co.uk/statistics/about/code.pdf and more generally information regarding Accessibility of statistics published by the Bank can be found in Section 4 (pages 16-17) of this code.

c) **British Bankers' Association (BBA)** statistical releases are available for download from the 'Statistics' area of the BBA website (www.bba.org.uk) or by contacting its Press Office (tel +44 20 7216 8810). The **Building Societies Association's (BSA)** statement of building societies' figures and the **Council of Mortgage Lenders' (CML)** survey of mortgage lenders estimates are available from the respective Press Offices of the two institutions located at 3 Savile Row, London W1S 3PB. The Building Societies Association's figures are also available via the Internet at www.bsa.org.uk and the Council of Mortgage Lenders' figures are available at www.cml.org.uk.

d) Please note that the dates shown above may be subject to alteration. This is particularly likely with respect to the CML figures, where figures will be based on a new survey, the precise reporting timetable for which has not yet been confirmed.

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