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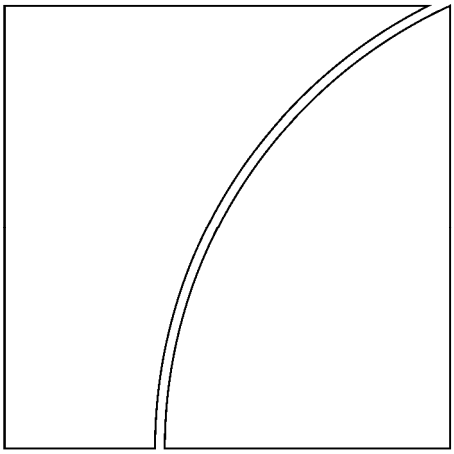

Guide to the international financial statistics

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Conventions used in this publication

billion thousand million

$ US dollar unless specified otherwise

I. Introduction

The origins of BIS activities in the field of international financial statistics go back to the mid-1960s and the emergence of the so-called eurocurrency markets that had sprung up to circumvent domestic regulations. At that time the key policy concern that gave rise to the joint data collection exercise by the central banks of the G10 countries under the aegis of the BIS was the need to monitor the rapid growth of these markets and its possible monetary implications. This led to the introduction of reporting by internationally active banks of their international positions in major individual currencies, with a geographic and partial sectoral breakdown. On the basis of these reports the central banks and the BIS compiled the so-called locational banking statistics for various lending and borrowing countries. In the subsequent years, the issue of recycling the current account surpluses of oil-producing countries shifted emphasis in favour of a more detailed geographical breakdown and of flow data.

In the context of the deregulation of domestic financial systems and capital flows in the 1970s and 1980s these concerns abated, but in its place came others, notably the rise in the indebtedness of many developing countries to international banks in the early 1980s. This build-up was visible in the existing locational banking statistics collected and published by the BIS but it was not possible to evaluate in a comprehensive way the risk characteristics of the exposures of national banking systems to individual borrowing countries. The need for such information therefore led to the reporting of a second set of international banking data on a fully consolidated basis. Consolidated international claims broken down by remaining maturity and sector of immediate borrower were introduced.

In response to calls for more up-to-date information on the international lending activities of banks, the BIS began, in the early 1990s, to collect and publish data on signed international credit facilities or syndicated loans. Later on from 2005, with the objective of enhancing the analysis of country risk exposures, efforts have been made to achieve a more complete and detailed reporting of consolidated banking data on an ultimate risk basis, including off-balance sheet positions relating to their derivatives transactions.

As a result of the increasing role of the international securities markets in global financial intermediation, the BIS was mandated in the mid-1980s to collect and publish statistics on the debt securities and international equities markets on the basis of data from commercial databases and information available to individual central banks. In the 1990s the BIS also became increasingly involved in the coordination of joint triennial surveys that central banks carried out to monitor activity in global foreign exchange and derivatives markets. Moreover, as derivatives markets expanded in the wake of financial innovation, central banks asked the BIS to collect and publish international data on exchange-traded and over-the-counter OTC derivatives, the latter being expanded to credit default swaps in 2005. The development of the BIS international financial statistics thus reflects evolving central bank concerns relating to monetary and financial stability in the context of worldwide financial market deregulation, innovation and globalisation.

In addition to their use for policy-related monitoring purposes by central banks, the international financial statistics have also proved to be of interest to private sector market participants and researchers. They have come to recognise the unique value of the BIS data for tracking the borrowing by emerging market countries from the international banking and securities markets. The BIS data are used by the International Monetary Fund in the

compilation of its international financial statistics and in its surveillance of individual economies. Moreover, the BIS data are useful for improving balance of payment statistics[1] and for measuring and monitoring developing countries' external debt. With respect to the latter, following the 1997 Asian debt crisis the IMF, OECD, World Bank and BIS pooled their respective statistics to collectively publish data from creditor and market sources on countries' foreign indebtedness.[2] The initial Joint BIS-IMF-OECD-World Bank External Debt tables were replaced in 2006 by a new set of comprehensive external debt statistics compiled by the same organisations from national and creditor/market sources: the Joint External Debt Hub (JEDH).

Apart from providing insights into the geographic distributions of international financial flows and external vulnerabilities and risk exposures of debtors and creditors, the international financial statistics collected and disseminated by the BIS provide important information on the structural developments in international financial markets. They can be used, for instance, to analyse the importance of individual financial centres (including so-called offshore centres), the emergence of new relationships between financial and non-financial firms, the level and concentration of activity in financial markets as well as spillovers between different market segments. Much of this is not easily available elsewhere. The statistics become even more valuable when they are combined with other sources covering financial asset prices, market liquidity and trading patterns, external ratings, and the activity of non-bank financial firms and non-financial companies. They then allow market participants and policy makers to make an assessment of credit and liquidity risks in domestic and international financial markets as well as of potential vulnerabilities to systemic disturbances in these markets.

The usefulness of the international financial statistics is, of course, potentially affected by the fact that the boundaries between international and domestic markets are becoming more blurred. This could, on the one hand, constitute a weakness of the statistics as it may become increasingly difficult to define and distinguish pure international financial market activity from that in domestic markets. On the other hand, as this guide explains and illustrates, the methodology of the international statistics have tried to keep pace with such developments and to ensure that financial analysts are aware of the limitations of the statistics. Moreover, given that financial innovations have often started in the competitive environment of the international financial markets and that market sentiments are becoming increasingly correlated internationally, the BIS statistics have been and continue to be a very useful tool to capture structural and market developments in global markets at an early stage.

The BIS, and the central banking community working through it, have also taken steps to complement the publication of the international financial statistics with a selection of highlights and analyses of major market trends. In the case of the BIS this applies to the press releases accompanying the release of new data; the BIS Quarterly Review, which contains more in-depth analysis of specific issues, and the Annual Report, which analyses long-term trends and emerging policy issues. The statistics are also mentioned and explained regularly in presentations by senior BIS officials to central banks, market

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[1] In the late 1980s an exercise took place to explain and correct the errors and omissions in the global balance of payments statistics. Given the consistency of the BIS banking data, these data played a key role in this exercise. Various countries use the data on an ongoing basis to improve the financial account of their national balance of payments statistics (see also Chapter VIII).

[2] In many cases debt to foreign banks, as recorded in the BIS statistics, is a large component of external debt. Moreover, the BIS statistics provide information on the short-term component of a country's foreign debt to international banks and to holders of international securities (i.e. with a residual maturity of less than one year). More recently from 2007 BIS is compiling trade credit data from the Berne Union (International Union of credit and investment insurers) to replace official trade credits data that were previously provided by the OECD.

participants and academics. Other initiatives to promote the use of the statistics include making them available with long time series and more detail in electronic form on the BIS website and updating the guidelines and methodological notes on a regular basis.[3]

Work on collecting, compiling and disseminating the BIS international financial statistics is closely related to, and guided by, the activities of the various Basel-based committees and expert groups as well as those of other international institutions. The Committee on the Global Financial System (CGFS) as well as the Markets Committee play a key role in reaching a consensus on priorities to improve the BIS statistics. With respect to international banking data, the Basel Committee on Banking Supervision (BCBS) is consulted on methodological issues to help ensure the collection of adequate statistical information from internationally active banks on risk exposures. The Financial Stability Forum (FSF) has also formulated a number of recommendations to enhance statistics on international financial markets and capital flows that are taken into account by the BIS in its statistical work. In addition, the Irving Fisher Committee on central banks statistics, whose Secretariat is now also hosted by the BIS, and the main international financial institutions (of which the ECB and the IMF), have made in 2007 proposals to the BIS to expand and make more consistent its debt securities statistics. As a result of the strong support of these groups it has been possible to improve on the reporting frequency and timeliness of the international financial statistics in recent years.

One of the major underlying objectives of the various Basel-based groups is to strengthen financial stability through transparency and market discipline. Increased public disclosure plays a key role in this and should, over time, lead to better quantitative and qualitative information on the activities and risk profiles of individual institutions as well as market infrastructures such as payment, settlement and trading systems. More recently the IMF has been elaborating a methodology for the collection by individual countries of comprehensive financial soundness indicators, which draw partially on the BIS statistics.[4] Moreover, the disclosure framework on the exposures and capital structure of internationally active banks proposed under the new Basel Capital Adequacy regulations (its so-called Pillar III) should contribute to better balance-sheet data of individual internationally active banks.

This guide is structured around the three main areas of the BIS international financial statistics: the international banking statistics (Part II); the securities statistics (Part III); and the derivatives and foreign exchange statistics (Parts IV and V). It also provides a description of the joint BIS-IMF-OECD-World Bank statistics on external debt (Joint External Debt Hub data) for which the BIS is a main contributor (Part VI). The guide provides a detailed description of the sources, compilation, transformation and publication of the data. Two separate chapters on the quality and the uses of the statistics (Parts VII and VIII) follow the description of the statistics. A more detailed description of the BIS international banking statistics and their underlying methodology is provided in separate guides.[5]

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[3] An international initiative is currently well under way by the BIS, IMF, ECB, Eurostat and the UN to develop standards and best practices for the exchange and dissemination of statistical data and metadata (for the so-called SDMX initiative see www.sdmx.org). This should facilitate the dissemination of the BIS international financial statistics and make it easier for users to search and retrieve the data in a user-friendly form.

[4] The Financial Soundness Indicators would provide an aggregated balance sheet for the banking system in individual countries. This would include balance sheet items covering banks' domestic activities, various types of risk exposures and some details on banks' capital structure.

[5] Separate guidelines to the locational and consolidated banking statistics are available on the BIS website.

This Guide has been prepared by the staff of the Monetary and Economic Department of the BIS. Chapter VIII draws largely on an article published in 2002.[6]

II. International banking statistics

The BIS compiles the following four separate sets of quarterly statistics on international banking activity:

- IBLR International Banking Locational by Residence – reports the international assets and liabilities of banks based on the residence of the reporting banks and the residence of the counterparties;
- IBLN International Banking Locational by Nationality – reports the international assets and liabilities of banks based on the residence of the reporting banks and the nationality of ownership of the reporting banks;
- worldwide consolidated international claims of reporting institutions, both on an immediate and ultimate risk basis; and
- signed international syndicated credit facilities.

The first three sets are collected indirectly, ie by individual central banks/monetary authorities, and are transmitted to the BIS after aggregation at the national level. They cover positions at reporting dates (end of quarter) and are expressed in US dollars. The third set of statistics differs from the first two insofar as the data are obtained from a single market source and refer to signings of syndicated loans during a given period. These may be only partially drawn, or used to replace earlier borrowing. The first two sets of statistics thus cover a much wider spectrum of banking activities.

The main purpose of the four sets of banking statistics is to provide a measure of:

- the role of banks in intermediating international capital flows (locational and syndicated credit statistics);
- the exposure of national banking systems to country, liquidity and transfer risks (consolidated statistics);
- the external debt owed to banks as reported from the creditor side (locational and consolidated statistics); and
- the importance of financial centres and offshore banking activity (locational and syndicated credit statistics).

1. Locational banking statistics: by residence and by nationality

1.1 Overall coverage

The locational banking statistics were introduced in the early 1960s to help monitor the development of international banking markets.[7] They provide quarterly information on the *gross* on-balance sheet asset and liability positions of banks in major banking centres

[6] See Wooldridge (2002).

[7] They were known at that time as the “eurocurrency” statistics.

vis-à-vis entities (banks and non-banks) located in other countries worldwide. The statistics are reported, in most cases, by banking institutions in each reporting country to their respective central banks or monetary authorities. They are aggregated at the national level and transmitted to the BIS. Since the locational statistics are based on the residence principle and are not consolidated, they are in principle consistent with national accounts and balance of payments data.[8]

The five-way disaggregation of the Locational by Residence data (by instrument, currency, sector, reporting country, and counterparty country) and the four-way disaggregation of the Locational by Nationality data (by currency, sector, reporting country, and nationality of reporting institutions)[9] – makes it possible to monitor various aspects of international banking activity. In addition, the currency detail allows the BIS to calculate the estimated exchange-rate value-adjusted changes in stocks that can be used as proxies for flow data (see Section 1.5 below). The aggregates and main breakdowns of the locational banking statistics are available in electronic form on the BIS website as from end-1977.

1.2 Reporting countries and institutions

The locational banking statistics are reported by central banks and monetary authorities in those countries and centres that generally meet the following two criteria:

- the banking system conducts a large volume of international lending and borrowing or deposit-taking; and
- the statistics are sufficiently comprehensive and detailed to be aggregated in a consistent form with those of other reporting countries and centres.

To ensure the global comprehensiveness of the locational banking statistics, the BIS has gradually expanded the group of reporting countries and centres (currently 42 – see the table below), and this process is expected to continue as the BIS invites additional countries/centres with evolving international banking business to join.

Countries and centres providing locational banking data

(first year of data availability in brackets)

Australia (1997)	Cyprus (2009)	Italy (1977)	Panama (2002)
Austria (1977)	Denmark (1977)	Japan (1977)	Portugal (1997)
Bahamas (1983)[1]	Finland (1983)	Jersey (2001)	Singapore (1983)
Bahrain (1983)	France (1977)	Luxembourg (1977)	South Korea (2005)
Belgium (1977)	Germany (1977)	Macao SAR (2006)	Spain (1983)
Bermuda (2002)	Greece (2001)	Malaysia (2008)	Sweden (1977)
Brazil (2002)	Guernsey (2001)	Mexico (2003)	Switzerland (1977)
Canada (1977)	Hong Kong SAR (1983)	Netherlands (1977)	Turkey (2000)
Cayman Islands (1983)	India (2001)	Netherlands Antilles (1983)	United Kingdom (1977)

[8] However, the locational banking statistics deviate from the balance of payments principles to the extent that they also cover banks' foreign currency positions vis-à-vis residents. These data are included to obtain a measure of banks' total foreign currency exposure.

[9] There is no breakdown by country of residence of counterparty for the breakdown by nationality of reporting institutions.

Chile (2002)	Ireland (1977)	Norway (1983)	United States (1977)
Chinese Taipei (2000)	Isle of Man (2001)		

[1] Semi-annual reporting.

The reporting institutions are deposit-taking banks and similar financial institutions. In some countries, specialised non-deposit-taking, trade-related financial entities also report. More rarely, the coverage extends to some international operations of a central bank office, or, for certain items only, the banking department of a central bank. For almost all countries, the reporting banks account for well over 90%, and in many cases virtually 100%, of the international assets and liabilities of all banking institutions operating within their borders.

1.3 Basic information

The statistics cover separate data on cross-border claims and liabilities in all currencies on the one hand and claims and liabilities vis-à-vis residents in foreign currency on the other. In addition, the data are typically broken down into three main components as follows:

(i) Loans and deposits

Loans and deposits cover those financial assets and liabilities that are not evidenced by negotiable instruments. The data generally include repurchase transactions, financial leases, promissory notes, subordinated loans, foreign banknotes and coins and trade-related credit. For the latter, the country of residence of the drawee of the trade bill is the guiding principle for the geographical allocation of claims arising from suppliers' credits.

(ii) Holdings and own issues of debt securities

Banks' holdings and own issues of international debt securities also represent international lending and borrowing.

(iii) Other assets and liabilities

Other assets mainly cover *equity holdings and participations*, ie portfolio and direct investment holdings of financial interests in enterprises. *Working capital* provided by banks' head offices to their branches is the major item included under other liabilities.

Arrears of interest and principal that have not been written down are in most instances included in the reported claims. Specific provisioning normally does not result in a reduction of outstanding claims. Derivative instruments are included in banks' international assets and liabilities to the extent that accounting rules in reporting countries require on-balance sheet reporting of the market value of these instruments. Currently, *off-balance sheet items* are generally excluded from the reported statistics, with the major exception of the trustee business (conducted in a bank's own name but on behalf of third parties) of banks in Switzerland, which is reported separately to the BIS. In certain other countries, moreover, trustee business is treated as on-balance sheet business and therefore included in the reported figures.

While deposits and conventional loans are generally reported at face value, holdings and own issues of securities may be valued at cost price, face or book value, or market price. A distinction between investment and trading portfolios is often made in this context. Investment portfolios are generally valued at cost price, whereas trading portfolios are often marked to market. However, loans subject to trading, loans acquired in the secondary market or securitised loans held in the trading portfolio are often valued at face value or cost price.

1.4 Disaggregation

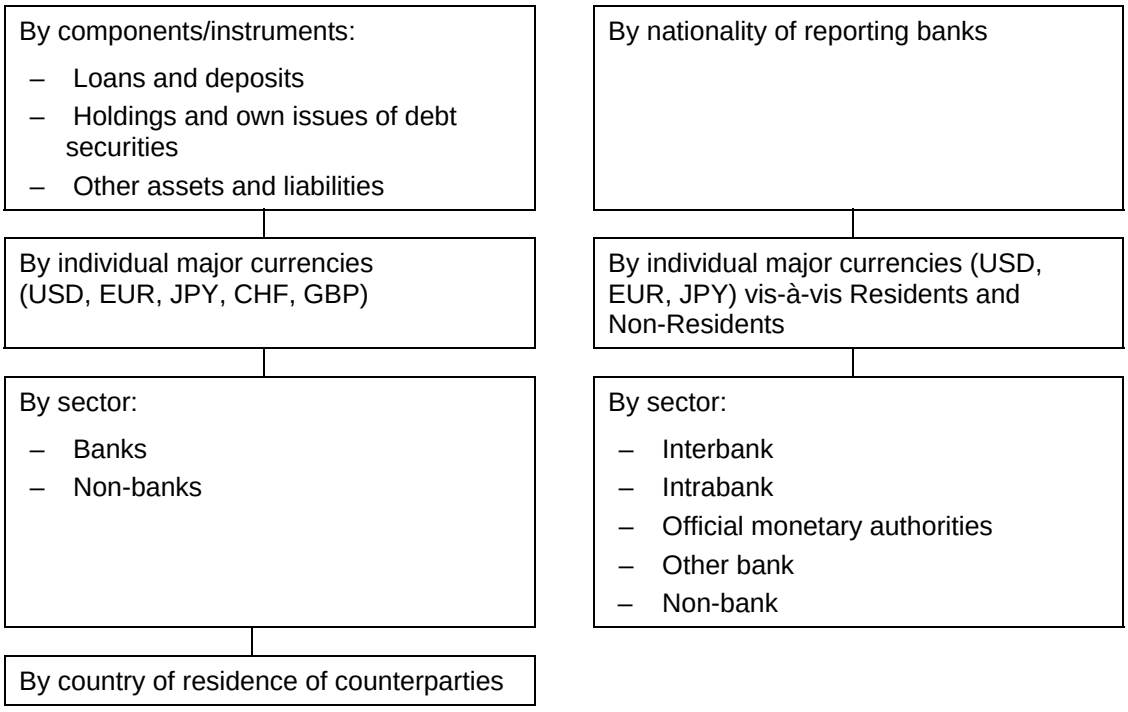
The three main components of international claims and liabilities are broken down by countries of residence of counterparties (about 200), by major individual currencies (USD, EUR, JPY, CHF, and GBP)[10] and sectors (banks and non-banks).[11]

The currency and sectoral detail provided for holdings of securities is in a few cases less complete than for the other components. In these cases, reporting gaps are typically filled by BIS estimates based on supplementary information provided by reporting central banks. On the liabilities side, reporting banks' own issues of securities are in general reported as an unallocated item since most banks cannot identify the ultimate holders of such securities.

Finally, in the Locational by Nationality data set total assets and liabilities are also broken down by nationality of ownership of reporting banks, with a further breakdown by three major currencies (USD, EUR and JPY) and a somewhat more detailed breakdown by sector (official monetary authorities, offices of the same banking group, other banks and non-banks).

The table below summarises the available breakdowns.

Disaggregation of banks' international assets and liabilities (locational data)



1.5 Exchange-rate value-adjusted changes in amounts outstanding

All international banking data are reported to the BIS with a breakdown by major currencies in US dollar terms. Positions in non-dollar currencies are converted into US dollars either by

[10] Data on BEF, DEM, FRF, ITL, NLG and XEU were provided before the introduction of the euro in 1999.

[11] Foreign official monetary authorities are included under "banks". See BIS (2000), Table G-17, p 35.

the reporting banks themselves or by their central banks or monetary authorities at the exchange rates prevailing at the end of each quarterly reporting period.

Fluctuations in exchange rates impact the current US dollar value of non-dollar stocks and therefore the changes in stocks from one period to the next. The BIS uses the currency breakdown to calculate the exchange-rate value-adjusted changes. Although these are not identical to actual flow data (because the actual transactions are distributed over the whole quarter during which exchange rates may fluctuate, and because other valuation effects may impact stocks), they provide a better approximation for actual flows than the simple difference in stocks between two periods.

The method employed by the BIS is to first convert positions at both the previous reporting date (T_0) and the current reporting date (T_1) into original currency amounts by applying the respective US dollar exchange rates. Consistent with international practice, the changes in original currency terms are then reconverted into US dollar amounts using period average exchange rates, ie the average of the exchange rate during the quarter between T_0 and T_1.

2. Consolidated banking statistics

2.1 Overall coverage

The consolidated banking statistics were introduced in the early 1980s to help monitor the exposures of national banking systems vis-à-vis emerging market countries, whose indebtedness had risen considerably in the wake of the oil shocks in the 1970s. The statistics mainly provide information on international financial claims of domestic bank head offices on a worldwide consolidated basis, ie including the exposures of own foreign offices but excluding inter-office positions. Currently they indicate the nature and extent of foreign claims of banks headquartered in 30 major financial centres. In contrast to the residence or balance of payments principle of the locational statistics, the reporting of consolidated positions offers a more useful measure of the total risk exposure of a reporting country's banking system.

The consolidated statistics provide details of the credit risk exposures of major international banking centres to more than 200 individual debtor countries. Furthermore, the data are disaggregated by remaining maturity and sector of borrower. Following the financial crises in emerging markets in the late 1990s, the consolidated statistics were enhanced to include complete country coverage of banks' on-balance sheet exposures, separate country data on an ultimate risk basis and a move to a quarterly reporting frequency. In response to recommendations of a working group of the Committee on the Global Financial System (CGFS), and in order to maintain the consolidated banking statistics as a key source of public information on international financial market developments, the measurement of commercial banks' consolidated country risk exposures on an ultimate risk basis has been added to the reporting requirements. Consequently, as from end-March 2005, the statistics cover more detailed and comprehensive data on country risk exposures inclusive of derivatives and some off-balance sheet risk transfer positions (credit commitments and guarantees). Consolidated data based on the residence of the party ultimately responsible for the repayment of an obligation (ultimate risk basis) in addition to total claims based on the residence of the immediate borrower (contractual claims) are more compatible with information produced by banks' own internal risk measurement systems and are considered a more appropriate measure of country risk exposure.

The inclusion of additional reporting countries, ongoing enhancements to the scope of the underlying statistics and global banking consolidation, among other factors, have inevitably led to breaks in the statistical series. Nevertheless, the consolidated banking statistics are available in fairly consistent form on the BIS website, beginning in December 1983 on a semi-annual basis and as quarterly time series from March 2000.

2.2 Reporting countries and institutions

The countries that report the consolidated banking statistics to the BIS comprise the largest international banking centres. A few offshore centres and developing countries have joined the reporting system since 1997, and several others have been invited to join. Thus the scope of the statistics – although already quite extensive (with 30 reporters – see the table below) – is set to expand further in the future.

Countries providing consolidated banking data

(first year of data availability in brackets)

Australia (2003)	Finland (1985)	Japan (1983)	Spain (1985)
Austria (1983)	France (1983)	Luxembourg (1983)[1]	Sweden (1983)
Belgium (1983)	Germany (1983)	Mexico (2003)[1]	Switzerland (1983)
Brazil (2002)[1]	Greece (2003)	Netherlands (1983)	Turkey (2000)
Canada (1983)	Hong Kong SAR (1997)[1]	Norway (1994)	United Kingdom (1983)
Chile (2002)	India (2001)	Panama (2002)[1]	United States (1983)
Chinese Taipei (2000)	Ireland (1983)	Portugal (1999)	
Denmark (1983)[1]	Italy (1983)	Singapore (2000)	

[1] Provides only consolidated banking statistics on an immediate borrower basis.

The data are collected by central banks or monetary authorities from their resident commercial banks and transmitted to the BIS in an aggregated form.

For the purpose of monitoring the exposures of national banking systems, consolidated data are reported by:

(i) Banks with head offices in the respective reporting country (domestic banks)

These banks provide consolidated reports on the international financial claims of their offices worldwide. For example, a bank with its headquarter in Japan will report to the Bank of Japan its own positions for offices in Japan as well as those of its overseas offices,[12] with inter-office positions netted out (ie on a consolidated basis).

To provide additional creditor data of borrower countries' external indebtedness to banks, supplementary information on an unconsolidated basis is reported by offices of foreign banks:

(ii) Offices whose headquarters are located in another reporting country (inside area offices)

These banks report unconsolidated claims on entities in their respective home country. For example, the branch or subsidiary of a bank in the United Kingdom with its headquarter in Turkey must report to the Bank of England its claims on Turkey only. This ensures the collection of cross-border claims otherwise excluded by domestic banks under the consolidation principle.

[12] Branches and subsidiaries.

(iii) Offices not headquartered in any of the reporting countries (outside area offices)

These banks report unconsolidated claims on any entities outside their country of residence. For example, the office of a bank in Germany with its headquarter in Poland (which is not a BIS reporting country) must report all its cross-border claims (including claims on Poland) to the Deutsche Bundesbank.

The newly introduced consolidated claims on an ultimate risk basis are relevant and collected only for banks with head offices in the respective reporting country (domestic banks).

2.3. Types of claims

2.3.1 Cross-border claims

Claims that are granted or extended to non-residents[13] are known as *cross-border claims* on an immediate borrower basis (A).

However, the criterion for claims on an ultimate risk basis is the residency of the ultimate obligor or guarantor and hence, those claims are cross-border when the ultimate obligor or guarantor resides in a country that is different from the residency of the reporting institution (head office, branches or subsidiaries).

Types of claims

A	**B**	**C**	**D**
Cross-border claims	Local claims of foreign affiliates in foreign currency	Local claims of foreign affiliates in local currency	Domestic claims in the reporting country

International claims (A + B)

Foreign claims (A + B + C)

Note: The shaded area indicates claims excluded from the consolidated banking statistics; bold italics indicate main aggregates of claims published within the consolidated banking statistics. The definition and content of A, B and C differ according to whether the ultimate risk basis or the immediate borrower basis is being used, due to the influence of risk transfers.

2.3.2 Local claims

In the context of the consolidated banking statistics, *local claims* refer to claims of domestic banks' foreign affiliates (branches/subsidiaries) on the residents of the host country (ie country of residence of affiliates). For the purpose of reporting on an immediate borrower basis, local claims in foreign currencies are reported together with cross-border claims to make up international claims (A + B), and local claims in local currency (C) are reported

[13] Non-resident is defined with reference to the residence of the counterparty of the head office or of the foreign affiliates of reporting banks. Claims of affiliates on residents in the parent country are to be excluded from reporting.

separately.[14] However, the local claims in foreign currencies (B) are soon proposed to be reported as an "of which" item of international claims (A+B).[15]

On an ultimate risk basis, claims should be classified as local claims (B + C) ***only*** if the ultimate obligor or guarantor resides in the host (residence) country where domestic banks' foreign affiliates (branches/subsidiaries) are located. In this case cross-border claims (A) and local claims in all currencies (B + C) are to be reported separately.

2.3.3 International and foreign claims

As explained above, *international claims* (A + B) are defined as banks' cross-border claims (A) plus local claims of foreign affiliates in foreign currencies (B).

Foreign claims are defined as the sum of cross-border claims plus foreign offices' local claims in all currencies. Therefore, on an immediate borrower basis, this category can be calculated as the sum of international claims (A + B) and local claims in local currency (C), while on an ultimate risk basis, it is equivalent to the sum of local (B + C) and cross-border (A) positions (in all currencies).

As far as breakdowns are concerned, on an immediate borrower basis a sectoral and remaining maturity breakdown for international claims is requested, while for the ultimate risk data only a sectoral breakdown is requested for foreign claims.

Please note that cross-border claims on an immediate borrower basis may be different from cross-border claims on an ultimate risk basis due to the influence of risk transfers.

2.4 Basic information

The reporting of the consolidated banking statistics on an immediate borrower basis and on an ultimate risk basis are briefly described below:

A. Financial claims on an immediate borrower basis

In this set of statistics, on-balance sheet financial claims are reported on an immediate borrower basis ie allocated to the country where the original risk lies. These data are available with following three categories or types of exposures, each category of exposure have further breakdown.

(i) Contractual international claims

These data cover cross-border claims of reporting banks in all currencies plus local claims of their foreign offices in non-local currencies. As in the locational statistics, the principal items are deposits and balances placed with other banks, loans and advances to banks and non-banks, holdings of securities and participations. The data are reported on an immediate counterparty basis, ie they are not reallocated as a result of guarantees or collateral provided. If derivatives are booked as on-balance sheet items, they are *excluded* from the reporting of on-balance sheet financial claims (but reported separately on an ultimate risk basis).

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[14] Furthermore, head offices of banks are requested to report the liabilities in local currency with local residents of foreign affiliates. The reason for requesting (in addition to international claims) the information on local claims and local liabilities in the local currency of foreign offices is that gross local claims are an additional source of country risk and local claims net of local liabilities are an additional source of transfer risk.

[15] When all reporting countries comply with this new requirement it would then be possible to know the total cross-border claims (A) on individual vis-à-vis countries.

(ii) Local claims and liabilities in local currency of reporting banks' foreign offices

These data are reported separately as a memorandum item, as a potential additional source of country transfer risk for the reporting banks if the assets are funded from abroad. A net positive position resulting from subtracting the liabilities (or domestic funding) from the assets would provide an indication of additional foreign lending. For example, a net local currency asset position of US banks in Mexico vis-à-vis Mexican residents implies that peso-denominated deposits by Mexican residents with the local US bank offices were insufficient to support the offices' peso-denominated lending activities; hence the gap in funding was probably financed from abroad.

The sum of international claims and local currency claims on local residents represents the foreign claims.

(iii) Outward and inward risk transfers of international claims

These data are reported separately in order to provide a measure of country risk exposure on an ultimate risk basis. Such data are consistent with banks' own internal risk management systems and are considered a more appropriate measure of country risk exposure than the data on international claims classified by country of the immediate counterparty to the lending operation. The Basel Committee on Banking Supervision defines the country of ultimate risk as "the country in which the guarantor of a financial claim resides and/or the country in which the head office of a legally dependent branch is located". In other words, ultimate risk claims identify the country of residence of the counterparty that will ultimately be held responsible for repayment of the claim.

The data on ultimate risk are captured in three separate breakdowns: (i) outward risk transfers (corresponding to a decrease in exposure); (ii) inward risk transfers (corresponding to an increase in exposure); and (iii) net risk transfers (the difference between inward and outward risk transfers). A positive net risk transfer towards country X implies that banks' risk exposure to that country has increased, either because X has provided a guarantee for country Y's borrowing or because it is home to the headquarters of a branch's overseas operations. In either case, country X is the counterparty ultimately responsible for repayment of the debt. Meanwhile, a negative risk transfer means that risk exposure has decreased. Furthermore, claims can be restated on an ultimate risk basis by simply adding or subtracting net risk transfers from total contractual claims.

The following provides a *simplified example*. A bank in the United States has outstanding claims (on a contractual basis) of $50 million vis-à-vis Hong Kong and $100 million vis-à-vis Japan. In the current period, the US bank lends $10 million to a manufacturer in Hong Kong, and this loan is guaranteed in turn by a bank in Japan. On an immediate counterparty (or contractual claim) basis, the US bank's exposure to Hong Kong rises by $10 million to $60 million while its exposure to Japan remains unchanged at $100 million. However, the United States records a $10 million outward risk transfer from Hong Kong and a $10 million inward risk transfer to Japan. Assuming no other transactions in the period, the United States reports +$10 million net risk transfers to Japan and –$10 million net risk transfers from Hong Kong. Hence, on an ultimate risk basis, the United States' exposure to Hong Kong remains at $50 million ($60 million on an immediate basis less $10 million net risk transfers) while its ultimate risk exposure to Japan increases to $110 million ($100 million on an immediate basis plus $10 million net risk transfers).

In practice, a few reporting countries have yet to collect data on risk transfers. Furthermore, among those countries that do report risk transfers information, some do not conform fully to the definition recommended by the Basel Committee.

B. Claims/positions on an ultimate risk basis

In line with the risk reallocation principle for measuring country exposure, the country of ultimate risk, or where the final risk lies, is defined as the country in which the guarantor of a financial claim resides and/or the country in which the head office of a legally dependent branch is located.[16] Collateral may be considered as an indicator of where the final risk lies to the extent that it is recognised as a risk mitigant according to the supervisory instructions in the reporting country. The list of recognised collateral under various approaches of credit risk mitigation is available in the Basel Capital Accord document.[17]

Similarly, if credit derivatives are used to cover for the counterparty risk of financial claims in the banking book, the country of ultimate risk of these positions is defined as the country in which the counterparty to the credit derivative contract resides. In addition, in the case of holdings of credit-linked notes and other collateralised debt obligations and asset-backed securities, a "look-through" approach should be adopted and the country of ultimate risk is defined as the country where the debtor of the underlying credit, security or derivative contract resides. However, it is recognised that this "look-through" approach might not always be possible for practical reasons. Accordingly, reporting institutions might only be able to provide estimates for the allocation of claims to the country where the debtor of the underlying resides or to allocate the claims to the country of the immediate borrower, which is the country where the issuer of the securities resides.

Furthermore, the issuer (or protection buyer) of credit-linked notes and other collateralised debt obligations and asset-backed securities should regard the issuance of a security backed by financial claims and sold to investors as cash collateral, which therefore extinguishes the exposure of the issuer to the underlying claim provided the securitisation is without recourse or guarantees and no residual exposure is retained by the issuing bank.

Claims on subsidiaries are considered as being guaranteed by the head office only if the parent has provided an explicit guarantee. In contrast, claims on branches should, for the purposes of the consolidated banking statistics, always be considered as guaranteed by the respective head office, even if there is no legal guarantee.

Positions of domestic banks on an ultimate risk basis are available with following two categories or types of exposures.

(i) Foreign claims

These data cover cross-border claims of reporting banks in all currencies plus local claims of their foreign offices in all currencies. As in the case of immediate borrower data, the claims include deposits and balances placed with other banks, loans and advances to banks and non-banks, holdings of securities and participations. On an ultimate risk basis derivatives exposures are not included as part of foreign claims but reported separately under "derivatives contracts" (see below).

(ii) Other exposures

As described below, other exposures have following three components, derivatives contracts, guarantees extended and credit commitments:

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[16] This means that domestic banks extending claims to such a branch have to reallocate the positions to the country of the branch's head office.

[17] See Basel Committee on Banking Supervision, *International convergence of capital measurement and capital standards*, June 2006 (http://www.bis.org/publ/bcbs128.pdf), paragraphs 145 and 146.

Derivative contracts

Reporting domestic banks provide consolidated data on the cross-border financial claims (ie positive market values) resulting from derivative contracts of all their offices worldwide and the financial claims from derivative contracts of their foreign offices vis-à-vis residents of the countries where the offices are located, independent of whether the derivative contracts are booked as off- or on-balance sheet items. The data are reported on a consolidated and ultimate risk basis, ie inter-office positions are netted out, and the positions are allocated to the country where the final risk lies.

The data cover, in principle, all derivative contracts that are reported in the context of the BIS's regular OTC derivatives statistics. The data thus mainly comprise forwards, swaps and options relating to foreign exchange, interest rate, equity, commodity and credit derivative contracts. However, credit derivatives, such as credit default swaps and total return swaps, are only reported under the item "Derivative contracts" if they are held for trading by a protection-buying reporting bank. Credit derivatives that are not held for trading are reported as "Risk transfers" by the protection buyer and all credit derivatives should be reported as "Guarantees" by the protection seller (see below).

Guarantees extended

Guarantees are contingent liabilities arising from an irrevocable obligation to pay a third-party beneficiary when a client fails to perform some contractual obligation. They include secured, bid and performance bonds, warranties and indemnities, confirmed documentary credits, irrevocable and standby letters of credit, acceptances and endorsements. Guarantees also include the contingent liabilities of the protection seller of credit derivative contracts.

Credit commitments

Credit commitments are arrangements that irrevocably obligate an institution, at a client's request, to extend credit in the form of loans, participation in loans, lease financing receivables, mortgages, overdrafts or other loan substitutes or commitments to extend credit in the form of the purchase of loans, securities or other assets, such as backup facilities including those under note issuance facilities (NIFs) and revolving underwriting facilities (RUFs).

2.5 Disaggregation

A. Breakdown of international claims on an immediate borrower basis

The data on contractual international claims are also provided with the following two additional breakdowns:

(i) Remaining maturity of claims

A maturity breakdown is provided for the consolidated banking statistics according to three categories: (i) up to and including one year; (ii) over one year and up to and including two years; and (iii) over two years. Financial claims are allocated on the basis of remaining or residual maturity instead of contractual maturity. For example, a five-year loan with a remaining maturity of six months would be classified as "up to and including one year". Any claims that cannot be classified by maturity, such as equity or property, are assigned to a residual "unallocated" category. For banks' assets in the form of rollover credits the residual maturity is, as a rule, calculated on the basis of the latest date on which repayment is due. Overdue interest and principal are included in the up to one-year category until payment, rescheduling or write-off occurs.

(ii) Sector of the borrower

Total contractual *international claims* are also disaggregated according to the sector of the borrower: (i) banks; (ii) public sector; and (iii) non-bank private sector. Claims that cannot be easily classified under one of the three identified sectors are assigned to the residual "unallocated" category. Under the recommendations, ***Public sector*** comprises the general government sector, central banks and multilateral development banks, ***Non-bank private sector*** is composed of non-bank financial institutions and non-financial corporations, be they private or public, and households, including non-profit institutions serving households. However, in contrast to the locational banking statistics, for the purposes of the consolidated statistics claims on foreign official monetary authorities and multilateral development banks, as well as on other international organisations, should be placed in the public sector category, instead of the bank category, and claims on publicly owned enterprises other than banks should be allocated to the non-bank private sector.

B. Breakdown of foreign claims on an ultimate risk basis

Foreign claims of domestic banks on ultimate risk basis are provided with the following breakdowns:

Sector of the borrower (see above)

Total *foreign claims* on an ultimate risk basis are also disaggregated according to the sector of the ultimate borrower: (i) banks; (ii) public sector; and (iii) non-bank private sector as for the international claims on an immediate borrower basis. Claims that cannot be easily classified under one of the three identified sectors are assigned to the residual "unallocated" category.

C. Type of foreign claims

Foreign claims are available with the following breakdown:

- *Cross-border claims:* Claims to non-residents of respective reporting countries that are either in any foreign currencies or in the currencies of the reporting country.
- *Local claims*: These refer to local claims of foreign offices of the (domestic) reporting banks on residents of countries where the foreign offices are located (host country). The claims are either in local currency of the host country or in any foreign currencies.

2.6 Consistency between immediate and ultimate borrower statistics

The risk transfer information on foreign claims on an immediate borrower basis is used to derive foreign claims on an ultimate risk basis. From a conceptual point of view, foreign claims on an immediate borrower basis plus net risk transfers should be equal to foreign claims on an ultimate risk basis. This should hold for claims of banks on all individual vis-à-vis countries.

2.7 Comparison with locational banking statistics

The two sets of international banking statistics disseminated by the BIS are both based on information provided by creditor banks. A summary of their main similarities and differences is provided in the table below.

The locational and the consolidated data can be linked by rearranging the locational data (which are reported by the country of residence of the reporting bank) by the nationality of the head office of the data reporting bank office. In addition, two items need to be subtracted

from the locational by nationality data: 1. cross-border business between offices of the same bank (26% of the total) and 2. local positions with residents in foreign currency (11% of the total). The latter item is dominated by local interoffice positions of foreign banks, which like cross-border interoffice positions are not included in the consolidated statistics.

The BIS locational and consolidated banking statistics compared

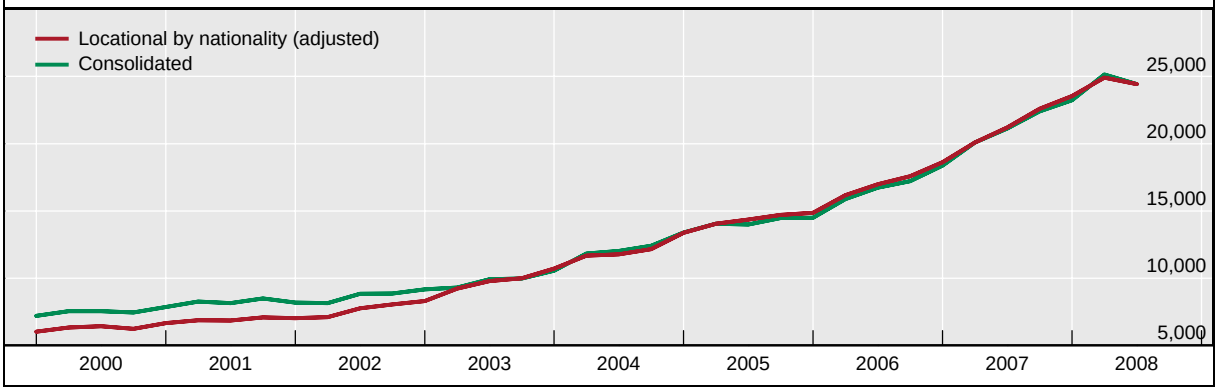
	Locational	Consolidated
Reporting basis	Residence of reporting bank (host country)	Nationality of reporting bank/Head offices of reporting banks (home country)
Number of reporting countries	42 (20 developed countries and 22 other banking centres)	30 (21 developed countries and nine other banking centres)
Reported data	International claims and liabilities	Worldwide consolidated claims
Availability of exchange rate adjusted changes	Yes	No
Inter-office netting-out	No	Yes
Type of counterparty	Immediate borrower	Immediate borrower and ultimate borrower
Disaggregation of claims by:		
(1)Currency	Yes (USD, EUR, JPY, GBP, CHF)	No
(2)Type of instrument	Yes (loans, deposits, securities)	No
(3)Sector	Yes (banks, non-banks)	Yes (banks, non-banks private, non-bank public)
(4)Vis-à-vis countries	Yes	Yes
(5)Maturity	No	Yes ($\leq$1y, $>$1y & $\leq$2y, $>$2y)

Once these two adjustments are made, banks' aggregate worldwide claims are closely correlated with banks' global consolidated asset positions, especially since the reporting of "nationality" data was improved from 2003 onwards (see graph below). Given this relationship, it is likely that the currency composition (which is also reported for the adjusted locational data, but not for the consolidated data) is similar.[18]

[18] See Blaise Gadanecz and Karsten von Kleist "Currency effects in consolidated bank claims", BIS Quarterly Review, June 2007, 20-21, http://www.bis.org/publ/qtrpdf/r_qt0706b.pdf.

Development of consolidated and adjusted locational data (2000-2008)

USD billion



3. Signed syndicated credit facilities

The third set of international banking data compiled by the BIS covers signed syndicated credit facilities and was introduced in the early 1990s. In contrast to the locational and consolidated banking statistics, these data include detailed information on individual borrowers (eg industry, rating) and facilities (eg maturity, purpose). They are collected from a single commercial data source (Dealogic Loan Analytics) and aggregate data are published by the BIS one quarter earlier than the international banking statistics.

Instruments

A-Loan	E-Loan	Note placement
Acceptance credit	Euro-CD programme	Note purchase facility
Bid advances facility	Euro-commercial paper programme	Overdraft facility
Bill facility	Euro-medium term note programme	Promissory note facility
Billet de Tresorerie	Export credit	Reducing revolving credit
B-Loan	First Lien	Revolving credit
Bridge facility	Fixed rate bond	Revolving/Term credit facility
Buyer credit	Fixed rate CD	Samurai CP programme
CD issuance facility	F-Loan	Second Lien
C-Loan	Floating rate CD	Sterling acceptance facility
Co-financing facility	Floating rate note	Sterling CD programme
Commercial paper facility	Global medium term note	Sterling CP programme
Commercial paper programme	Global note issuance facility	Sterling intermediate note
Commitment Line	Global note programme	Supplier credit
Construction loan	Guarantee facility	Swingline facility
Credit facility	L/C facility	Tax-spared loan
Deferred purchase facility	Lease facility	Term loan
Demand draw	Loan-style FRN	Third lien

D-Loan	Mezzanine loan	US commercial paper programme
DM acceptance facility	Multiple facility	USD acceptance facility
Domestic medium term note	Note issuance facility	Warehouse facility

The aggregates published by the BIS relate to credit facilities that satisfy the following criteria:

- the facilities must be granted by syndicates consisting of at least two financial institutions acting as lenders;
- the nationality of at least one of the syndicate banks must differ from that of the borrower;
- as regards the terms of the announced loans, only signed facilities with a maturity of at least three months are included;
- facilities must take the form of one or a combination of the instruments listed in the following table.[19]

4. Publication of the statistics

The BIS publishes the data on the international banking market in the statistical annex of the BIS Quarterly Review. For confidentiality reasons, not all details of the collected information can be provided. Thus, the BIS only publish fairly aggregated statistics in the following format:

1 BIS reporting banks: summary of international positions

2 External positions of banks in individual reporting countries

A In all currencies vis-à-vis all sectors
B In all currencies vis-à-vis the non-bank sector
C In foreign currencies vis-à-vis all sectors
D In foreign currencies vis-à-vis the non-bank sector

3 External loans and deposits of banks in individual reporting countries

A In all currencies vis-à-vis all sectors
B In all currencies vis-à-vis the non-bank sector

4 Local positions in foreign currency of banks in individual reporting countries

A Vis-à-vis all sectors
B Vis-à-vis the non-bank sector

5 Currency breakdown of reporting banks' international positions

A Cross-border positions vis-à-vis all sectors
B Cross-border positions vis-à-vis the non-bank sector
C Cross-border positions vis-à-vis official monetary authorities
D Local positions in foreign currency vis-à-vis all sectors and vis-à-vis the non-bank sector

[19] This table is updated on regular basis to capture any new instrument developed in the credit market.

6 External positions of reporting banks vis-à-vis individual countries

A Vis-à-vis all sectors
B Vis-à-vis the non-bank sector

7 External loans and deposits of reporting banks vis-à-vis individual countries

A Vis-à-vis all sectors
B Vis-à-vis the non-bank sector

8 International positions by nationality of ownership of reporting banks

A Amounts outstanding
B Estimated exchange rate adjusted changes

9 Consolidated claims of reporting banks on individual countries

A International claims by maturity and sector on an immediate borrower basis
B Foreign claims by nationality of reporting banks on an immediate borrower basis
C Foreign claims by sector/type and other exposures on an ultimate risk basis
D Foreign claims by nationality of reporting banks on an ultimate risk basis
CB10 International claims by nationality of reporting banks an immediate borrower basis (Website)

10 Signed international syndicated credit facilities by nationality of borrower

In addition, the BIS publishes a quarterly press release with the preliminary results of the international banking statistics at least 6 weeks ahead of the publication of the Quarterly Review where a more detailed analysis of the semi-definitive data is provided.

Additional data and a full set of historical time series are available on the BIS website under http://www.bis.org/statistics/sectstats.htm.

III. Securities statistics

The BIS compiles the following three sets of quarterly statistics on securities markets:

- international debt securities;
- international equities; and
- domestic debt securities.

The statistics is derived from various national, market and institutional data sources and provide information on amounts outstanding and new issues of both international and domestic securities.

The main purpose of the three sets of statistics is to complement the quarterly international banking statistics so as to provide more comprehensive monitoring of international financial market activity. Analytical emphasis is placed on the stocks of securities outstanding, as well as new issues net of repayments. These data are broken down according to criteria similar to those applied to the banking statistics. However, in contrast to the international banking statistics only the borrower side of securities issues is covered. No detailed information is available on the actual ownership of these securities. The statistics are collected in particular for the following reasons:

- to assess the relative use of capital markets as opposed to banks in financial intermediation;
- to monitor the issuance in international markets by residents or nationals of different countries; and
- combined with pricing data, to assess supply and demand factors in asset markets and potential financial strains.

Since 2007, under the aegis of the Working Group on Securities Databases (WGDB), composed of the BIS, the World Bank, the ECB and chaired by the IMF, the BIS has been acting in two different areas: (1) coordination of the drafting of a Handbook on Securities Statistics that would clarify and make consistent at an international level the various concepts related to the securities statistics, (2) updating of its own debt securities statistics using the template proposed in the Handbook (see box on pages 26 and 27 presenting the new framework for debt securities issues). Through this multi-pronged exercise the BIS pursues the objective of improving in cooperation with the main international statistical institutions the debt securities statistics at a worldwide level and reducing, if not eliminating, any overlap of its domestic and international debt securities, while expanding their coverage.

1. International debt securities

1.1 Overall coverage

The international debt securities dataset was introduced in the early 1980s. It covers bonds and notes (long-term issues) and money market instruments (short-term issues) placed in international markets. The data are obtained from various market and institutional sources: Dealogic (DCM and ECM), Thomson Financial Securities Data (Platinum), Xtrakter Ltd (market services division of the International Capital Market Association) and the Bank of England (for data before 1996) in the case of international bonds, and Euroclear in the case of international notes and money market instruments. The added value of the BIS consists of integrating the information received from different data providers through a process of data reconciliation. Duplicates are identified and removed, mistakes are corrected and consistent classification of issuers is ensured across the different data sources.

The data collected from market and institutional sources contain detailed information on individual securities. In addition to the amount of funds raised and the dates of announcement, completion and maturity of deals, information is available on the name of the issuer, the sector of the immediate borrower (issuer), the sector of the ultimate borrower (parent company of the borrower or guarantor), country of residence and nationality of the issuer, the type of instrument, interest rate structure and market of issue and, for international bonds, the terms (coupon, issue price, interest base etc), conditions (call and put options, conversion clauses etc) and rating of individual issues. At end-March 2008, information on more than 164,000 international bond issues and more than 862,000 international notes and money market instruments was available from these sources.

The BIS aggregates the detailed information on individual securities according to certain standard criteria, such as currency, type of issue, sector of the immediate borrower, sector of the ultimate borrower and country of residence and nationality of borrowers. The aggregated data are updated and published every quarter and they are available, with the main breakdowns, in electronic form on the BIS website from the fourth quarter of 1993 onwards. Partial aggregates for earlier periods are also available.

The BIS definition of international debt securities (as opposed to domestic debt securities) is based on three major characteristics of the securities: the location of the transaction, the currency of issuance and the residence of the issuer. International issues comprise all foreign currency issues by residents and non-residents in a given country and all domestic currency issues launched in the domestic market by non-residents. In addition, domestic currency issues launched in the domestic market by residents are also considered as international issues if they are specifically targeted at non-resident investors. However, due to the lack of information from commercial data providers, notes and money market instruments issued by non-residents in a domestic market in the currency of that market (foreign issues) are not included.

Classification of BIS securities statistics

	Issues by residents	**Issues by non-residents**
In domestic currency		
– Targeted at resident investors	Domestic	International
– Targeted at non-residents	International	International
In foreign currency	International	International

In some cases, it might be difficult to identify the targeted investors. Foreign participation in the group of intermediaries and underwriters arranging the deal or the absence of a withholding tax and of any registration requirement might then be taken as an indication of the international nature of the investor base. Moreover, global issues are often launched simultaneously in domestic and international markets. Due to the lack of information on the proportion that is issued in each market, global issues are considered in total as international issues in the context of the BIS securities statistics. Securities that are part of debt rescheduling packages, such as Brady bonds, are currently not included in the BIS securities statistics.[20]

[20] Work is currently being carried out to include such issues in the statistics.

1.2 Basic information

The BIS data on international debt securities distinguish between the following basic types of information:

- *Announced issues*: the volume of new announcements of securities offered in the market;
- *Completed issues*: the volume of new securities actually placed in the market.
- *Redemptions*: both scheduled repayments and early redemptions of outstanding securities;
- *Net new issues*: the difference between completed issues and redemptions in a given period;
- *Amounts outstanding*: the gross value of securities not yet repaid at the end of a given reporting period.

Data on amounts outstanding are provided in current US dollar terms. Announced and completed new issues of international bonds in non-dollar currencies are converted into US dollar amounts at the exchange rate prevailing at the time of announcement. Announced and completed issues of international notes and money market instruments in non-dollar currencies as well as redemptions are converted into US dollar amounts using the respective quarterly average dollar exchange rate. Because of valuation effects related to exchange rate movements there is a difference between changes in the stocks of securities outstanding valued at current exchange rates and net new issues.

The data can be used for various analytical purposes. Announcements provide an up-to-date picture of the conditions in the market at any given point in time. They are related to underlying economic and financial developments, such as interest rate and exchange rate movements. The figures for completions and redemptions provide a more accurate picture of the volume of actual gross credit flows through the bond markets. Net new issues measure the amount of new funds raised, while the data on amounts outstanding provide an indication of the indebtedness of different categories of borrowers.

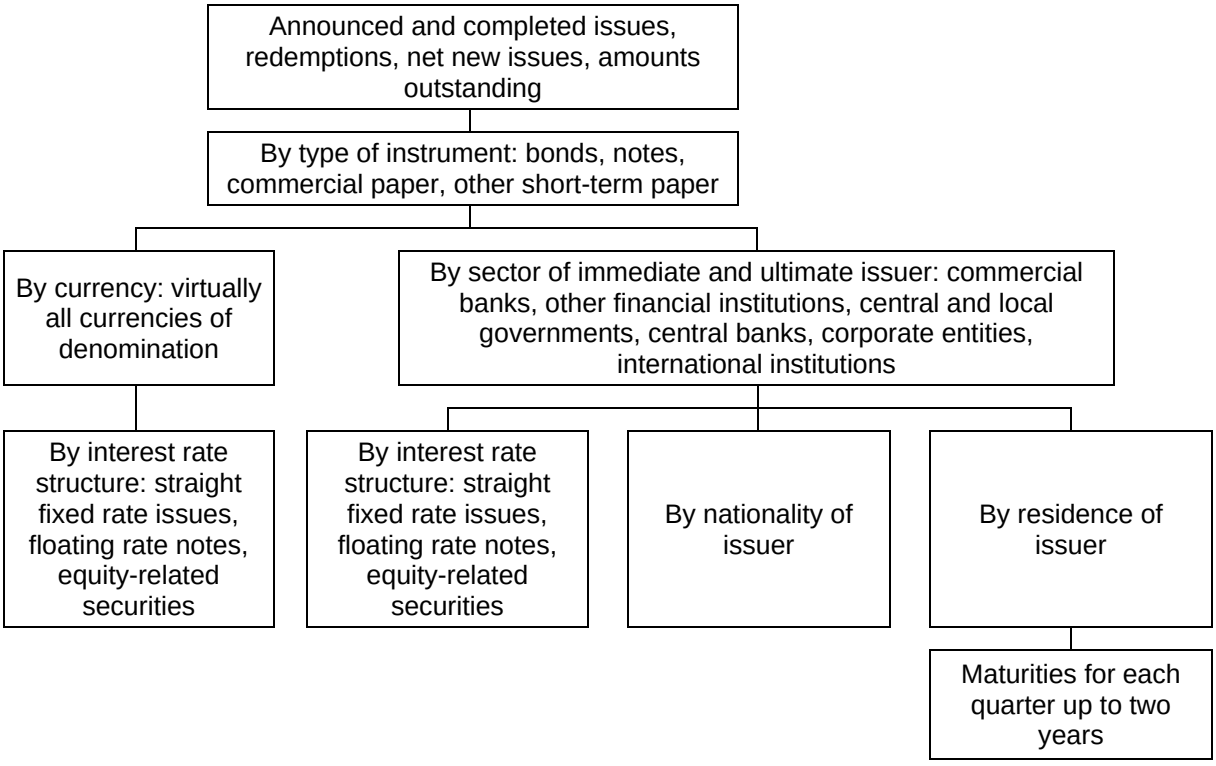
1.3 Disaggregation

For each of the five basic types of information, the following standard breakdowns are available:

- *Type of instrument*: international bonds, notes, commercial paper and other short-term paper;
- *Market of issue*: a distinction is made between foreign issues, ie domestic currency issues in a domestic market by non-residents (eg yankee and samurai), and all other international issues;
- *Interest rate structure*: distinction is made between straight fixed rate issues (securities bearing a fixed rate coupon with no equity or conversion element), floating rate notes (interest rate varies during the life of the note according to short-term reference rates, and has no equity or conversion element) and equity-related securities (carry an equity element in the form of a conversion clause or warrants to acquire shares);
- *Currency of issue*;
- *Sector of the immediate borrower*: commercial banks, other financial institutions, corporate entities, central governments, local governments, central banks and international organisations;

- *Sector of the ultimate borrower*: the breakdown by ultimate borrower distinguishes the same type of issuers as the sectoral breakdown by immediate borrower; account is taken, however, of the fact that in some cases the ultimate borrower can be different from the issuer (eg issues by Ford Motor Credit Company are classified as issues by "corporate issuers" while they are classified as issues by "financial institutions" under the concept of the immediate borrower);
- *Remaining maturity of issue*: separate data are available on international securities outstanding with a remaining maturity to final repayment for each quarter up to two years;
- *Residence of issuer*: this geographical classification distinguishes borrowers according to their geographical location; this is consistent with the approach taken in the BIS locational banking statistics and, more generally, with balance of payments methodology;
- *Nationality of issuer*: identifies borrowers according to their nationality, where possible on an ultimate risk basis, ie the country of residence of the parent company of the borrower.

Disaggregation of international debt securities statistics



2. International equities

2.1 Overall coverage

The statistics on international equities were introduced in the late 1990s. They cover information on announced new equity issues by international syndicates in the international markets. The three main types of placement are: (i) offerings of common or preferred equity in the international market; (ii) issues targeted at particular foreign markets; and

(iii) registered stocks traded on foreign markets as domestic instruments, such as American depositary receipts (ADRs). As with international debt securities, global issues that involve a combination of domestic and international tranches are considered in total as international issues. The international equities statistics are derived from market sources (Dealogic) and, as in the case of the international debt securities statistics, the BIS performs quality checks and ensures the consistency of the data.

2.2 Basic information

Detailed information is collected on the amount of funds raised and the dates of announcement and completion of deals; the name and business sector of the immediate borrower; the business sector of the ultimate borrower; the country of residence and nationality of the issuer; the type of issue (ADR, initial public offering, privatisation etc); the type of offer (primary or secondary) and the market of issue. At end-March 2008, information on 17,954 international equity issues was available.

The BIS aggregates the information according to certain standard criteria. The data are updated and published every quarter. The aggregate data are available in electronic form on the BIS website from the first quarter of 1983 onwards.

2.3 Disaggregation

Similar breakdowns are available on announced equity issues as for the international debt securities market.

3. Domestic debt securities

3.1 Overall coverage

The domestic debt securities statistics were introduced in the early 1990s. They cover data on long-term bonds and notes, treasury bills, commercial paper and other short-term notes issued in the domestic markets of currently 49 countries (OECD members plus selected emerging market countries). The data are derived from various national sources, such as central banks, national statistical offices, securities registers etc.

In contrast to the international securities statistics, the domestic securities statistics cover only aggregated information on amounts outstanding and net new issues of securities. Currently, little or no detailed information is available on individual domestic securities issues and their characteristics.

Domestic debt securities are defined as issues by residents in domestic currency (with a few exceptions) targeted at resident investors. The BIS endeavours to eliminate any overlap between its international and domestic debt securities statistics as far as possible. This work mainly involves comparisons of detailed aggregated information; however, with regard to a few countries the work is carried out at the individual security level. However, as two different collection systems as used (security by security collection system for the international debt securities and collection of aggregated data for the domestic debt securities), some overlap might still remain in the domestic statistics, by a margin which differs from country to country.

The aggregate data are published on a quarterly basis. They are available in electronic form on the BIS website as from the first quarter of 1994 and on an annual basis from end-1989 onwards.

3.2 Basic information

The BIS database comprises the following two basic types of information:

- *Amounts outstanding:* national currencies are converted by the BIS into US dollar amounts at the exchange rate prevailing at the relevant reporting date.
- *Net issues* are approximated by changes in stocks, which are adjusted for exchange rate valuation effects by converting changes in amounts outstanding in national currency using the average US dollar exchange rate prevailing during the relevant reporting period.

3.3 Disaggregation

The following four standard breakdowns are available on domestic debt securities:

- *Type of instrument*: bonds, medium-term notes, treasury bills, commercial paper and other short-term notes (mainly certificates of deposit);
- *Sector of issuer*: commercial banks, other financial institutions, corporate entities, central governments, local governments and central banks;
- *Remaining maturity of issue*: separate data are made available on securities issues with remaining maturity to final repayment of up to one year;
- *Residence of issuer*: the statistics provide a geographical breakdown by country of residence for the 49 countries currently covered.

4. Publication of the statistics

The BIS publishes parts of its securities series in the statistical annex of the *BIS Quarterly Review* in the following format:

11 International debt securities by residence of issuer

12 International debt securities by nationality of issuer

A All issuers
B Financial institutions
C Corporate issuers
D Governments

13 International debt securities by type, sector and currency

A Money market instruments
B Bonds and notes

14 International debt securities by residence of issuer

A Money market instruments
B Bonds and notes

15 International debt securities by nationality of issuer

A Money market instruments
B Bonds and notes

16 Domestic debt securities by sector and residence of issuer

A All issuers and governments
B Financial institutions and corporate issuers

17 Debt securities with remaining maturity of up to one year

A Domestic securities
B International securities

18 Announced international equity issues by nationality of issuer

More detailed data and a full set of historical series are available on the BIS website in excel-readable format under http://www.bis.orgf/statistics/secstats.htm.

Planned evolution of the BIS debt securities statistics

The BIS is considering from 2010 using a new delineation line that would distinguish domestic market issues (ie securities issued under local law, cleared and settled locally) from international market issues (see table below). Debt securities statistics are typically compiled using two main approaches: "residency of issuer" or "location of issue".

The "residency of issuer" approach focuses on the issuers of securities, that is, on the liabilities side of the balance sheet of different sectors in the economy that issue debt instruments. The major sectors are the general government, financial corporations, and non-financial corporations. This "residency of issuer" approach is consistent with the financial accounts framework. In this approach, data are reported on securities that have been issued globally by residents of the economy, that is, in either the domestic market/jurisdiction or in international markets (the latter consists of jurisdictions of other countries or multiple jurisdictions). One would therefore look at the entries in the table below vertically. In this analytical approach, debt securities issued by non-residents in the domestic market would be included in national statistics of other countries.

Two main approaches to report debt securities statistics

		Sectors / Breakdown	General government	Financial corporations	Non-financial corporations	Residents	Non-residents	Total
Location of issue	Domestic market	Local currency						
		Foreign currencies						
		All currencies						
	International markets	Local currency						
		Foreign currencies						
		All currencies						
	All markets	Local currency						
		Foreign currencies						
		All currencies						
			Residency of issuer					

The “location of issue” approach classifies debt securities statistics based on the geographic delineation of securities markets. In this approach, data are reported on securities that have been issued in the domestic market/jurisdiction by all sectors, residents and non-residents. In other words, one would be looking at the entries in the table horizontally. Depending on the stipulation of the respective securities market regulations, each of these sectors may issue securities denominated in local or foreign currencies.

The approaches described above are stylised or theoretical. In practice, a combination of the “residency of issuer” and “location of issue” approaches could be used or the chosen approach might not be used systematically. For example, issues by the general government sector could be on a “location of issue basis” (perhaps because the government does not issue in international markets). For the financial and non-financial corporation sectors a “residency of issuer” approach may be used because it may not be possible to differentiate the issues by these sectors in domestic and international markets.

It should be noted that the current BIS international securities statistics provide, in principle, an estimate of a number of components in the table above. In particular, this database covers issues by residents in international markets as well as in foreign currency in domestic markets. It also provides information of the use of the domestic currency in international markets. These more detailed estimates are not (yet) published by the BIS.

IV. Derivatives statistics

The BIS compiles the following two sets of statistics on derivatives markets: quarterly data on exchange-traded derivatives statistics and semi-annual data on over-the-counter (OTC) derivatives statistics. The data on exchange-traded derivatives are obtained from market sources, while those on OTC derivatives are based on the reporting to the BIS by central banks that in turn collect the data from reporting dealers in their respective countries.

The main purpose of the statistics is to provide a measure of the size and structure of derivatives markets and to monitor developments in these markets. In conjunction with the banking and securities statistics the data provide a more comprehensive picture of activity in global financial markets. With regard to derivatives markets proper, they allow a comparison to be made between exchange-traded and OTC markets; they permit the evolution of the various market segments to be monitored; and they provide an indication of gross market values of the contracts traded as well as of credit exposure in OTC markets, both before and after bilateral netting.

1. Exchange-traded derivatives

1.1 Overall coverage

The compilation on a regular basis of the statistics on exchange-traded derivatives started in 1993. They cover turnover and contracts outstanding in a number of instruments as well as notional amounts for financial derivative contracts that are traded on exchanges. Prior to 1999, the data were mainly derived from the commercial database of the Futures Industry Association and from a number of exchanges themselves. Since 1999, the data have been mainly derived from the commercial database of *Futures & Options World* (FOW TRADEdata). The coverage of the FOW data is better and the data are more timely than those from the previous sources, and has enabled the BIS to substantially reduce the publication lags of aggregated data (by one quarter). An attempt is made to ensure the completeness of the data and most exchanges are included in the data set.

The statistics collected contain detailed information on individual derivatives contracts. In addition to contract turnover and open interest, information is available on the underlying instruments and the location of trading. At end-December 2008, trading in 6,010 individual derivatives contracts was recorded.

The BIS aggregates the information according to certain criteria, such as market risk category, type and location of trading. The aggregate data are published on a quarterly basis. They are available in electronic form on the BIS website from the fourth quarter of 1993.

1.2 Basic information

The BIS statistics comprise the following four sets of data:

- *Turnover in number of contracts*: derived directly from the commercial database of FOW TRADEdata.
- *Turnover in notional amounts*: calculated using the turnover data on the number of contracts, the information on the face values of contracts, period average exchange rates and, for equity index contracts, the respective equity market index values.
- *Contracts outstanding in number of contracts*: also derived directly from FOW TRADEdata.

- *Contracts outstanding in notional amounts*: obtained using the number of contracts, the face value of the contracts, end of period exchange rates and, for equity index contracts, the respective equity market indices.[21]

Since the BIS only collects data aggregated by contract, there may be some unavoidable calculation errors during periods where contract sizes are changed. These errors are small, as often only a limited number of the contracts will be redenominated. The BIS makes every effort to minimise these distortions in notional amounts during the transition periods.

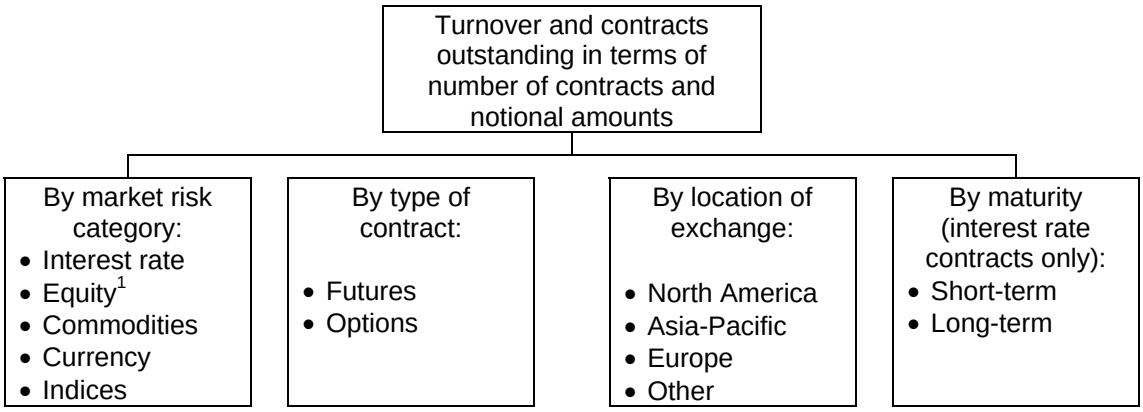
Data on turnover and contracts outstanding in notional amounts are only compiled for interest rate, currency and equity index futures and options. For commodities and single equity contracts, data are only provided on turnover in number of contracts.

1.3 Disaggregation

For each of the four sets of data an additional breakdown is available for:

- *Market risk categories*: interest rate, currency and equity-linked contracts (in addition, information is provided on commodity contracts as a memo item);
- *Type of contract*: futures and options;
- *Location of trading*: North America, Europe, Asia-Pacific and "other" areas;
- *Maturity*: for interest rate contracts only, a distinction is provided between short- and long-term contracts with an original maturity of up to one year on the one hand and over one year on the other.

Disaggregation of exchange-traded derivatives statistics



[1] Number of contracts only.

[21] Thus, notional amounts outstanding of interest rate and currency contracts are calculated as follows: number of contracts X face value X exchange rate (currency/USD). In the case of the equity index contracts, the corresponding notional amounts w are calculated as follows: number of contracts X multiplier X index value X exchange rate. For example, suppose the open interest for the three-month sterling future is 100,000 contracts at the end of the quarter. The face value or underlying value of this contract is GBP 500,000, and we will assume a sterling exchange rate of USD 1.5. This will give a notional amount of contracts outstanding of: 100,000 X 500,000 X 1.5 = USD 75 billion.

The calculation for equity index contracts is similar, except that the face value changes according to the level of the underlying index times a multiplier. The above methodology is the same for both futures and options. Where the underlying contract for an option is a futures contract, the face value of the futures contract is used as the face value of the option contract.

2. Semi-annual OTC derivatives

2.1 Overall coverage

As from end-June 1998, the central banks of the G10 countries and of Switzerland have collected statistics on OTC derivatives on a semi-annual basis. The data are reported by major derivatives dealers, and compiled and published by the BIS (see BIS (1996)). Prior to that date, the BIS compiled and published OTC derivatives data based on information provided by the International Swaps and Derivatives Association (ISDA).

The current semi-annual OTC derivatives market statistics provide comprehensive data not only on notional amounts but also on gross market values outstanding of forwards, swaps and options of foreign exchange, interest rate, equity, commodity, credit and other derivatives, as well as Herfindahl concentration measures and total gross credit exposures. Additional detail on credit default swaps has been published from end 2004, and then, further on, on December 2005. More detail on the CDS data is planned at end-June 2010, ie inclusion of central counterparties (CCPs) in the counterparty category[22]. However, in contrast to the exchange-traded derivatives statistics, data are only available on amounts outstanding and not on turnover of contracts.

The aggregate data from end-June 1998 onwards are available, with their main breakdowns, on the BIS website.

2.2 Reporting countries and institutions

The regular OTC derivatives market statistics are currently reported by more than 50 major reporting dealers in the G10 countries. The overall coverage of the market is fairly comprehensive, as OTC derivatives activity is highly concentrated. Moreover, the reporting dealers are requested to report their transactions on a worldwide consolidated basis inclusive of the activity of their foreign affiliates. Deals between affiliates of the same institution are excluded.

2.3 Basic information

The following three sets of OTC derivatives market statistics are available:

(i) Notional amounts outstanding

Nominal or notional amounts outstanding are defined as the gross nominal or notional value of all deals concluded and not yet settled at the reporting date. For contracts with *variable nominal or notional principal amounts*, the basis for reporting is the nominal or notional principal amounts at the time of reporting.

Nominal or notional amounts outstanding provide a measure of market size and a reference from which contractual payments are determined in derivatives markets. However, with the partial exception of credit default swaps, such amounts are generally not those truly at risk. The amounts at risk in derivatives contracts are a function of the price level and/or volatility of the financial reference index used in the determination of contract payments, the duration and liquidity of contracts and the creditworthiness of counterparties. Gross market values

[22] More is expected at end-June 2011 (index CDS and CDS on ABS as new reference entities, regional counterparty breakdown for all CDS, net market values for non-CDS instruments and synthetic CDOs bought and sold) according to the recommendations of the CGFS working group on credit risk transfer instruments (CGFS 2009).

provide a more accurate measure of the scale of financial risk transfer taking place in derivatives markets.

(ii) Gross positive and negative market values

Gross market values are defined as the sums of the absolute values of all open contracts with either positive or negative replacement values evaluated at market prices prevailing at the reporting date. Thus, the gross positive market value of a dealer's outstanding contracts is the sum of the replacement values of all contracts that are in a current gain position to the reporter at current market prices (and therefore, if they were settled immediately, would represent claims on counterparties). The gross negative market value is the sum of the values of all contracts that have a negative value on the reporting date (ie those that are in a current loss position and therefore, if they were settled immediately, would represent liabilities of the dealer to its counterparties).

The term gross is used to indicate that contracts with positive and negative replacement values with the same counterparty are not netted. Nor are the sums of positive and negative contract values within a market risk category such as foreign exchange, interest rate contracts, equities and commodities set off against one another.

As stated above, gross market values supply information about the potential scale of market risk in derivatives transactions. Furthermore, gross market value at current market prices provides a measure of economic significance that is readily comparable across markets and products.

All data are reported to the BIS in US dollars. Positions in other currencies of individual segments or instruments are converted into US dollars by reporting dealers at the exchange rate prevailing at the end of each reporting period.

(iii) Gross credit exposure

Gross credit exposure represents the gross value of contracts that have a positive market value after taking account of legally enforceable bilateral netting agreements. This item *does not* include gross credit exposure related to Credit Default Swaps, with the exception of the data reported by the US. Liabilities arising from OTC derivatives contracts represent the gross value of contracts that have a negative market value taking account of legally enforceable bilateral netting agreements.

2.4 Disaggregation

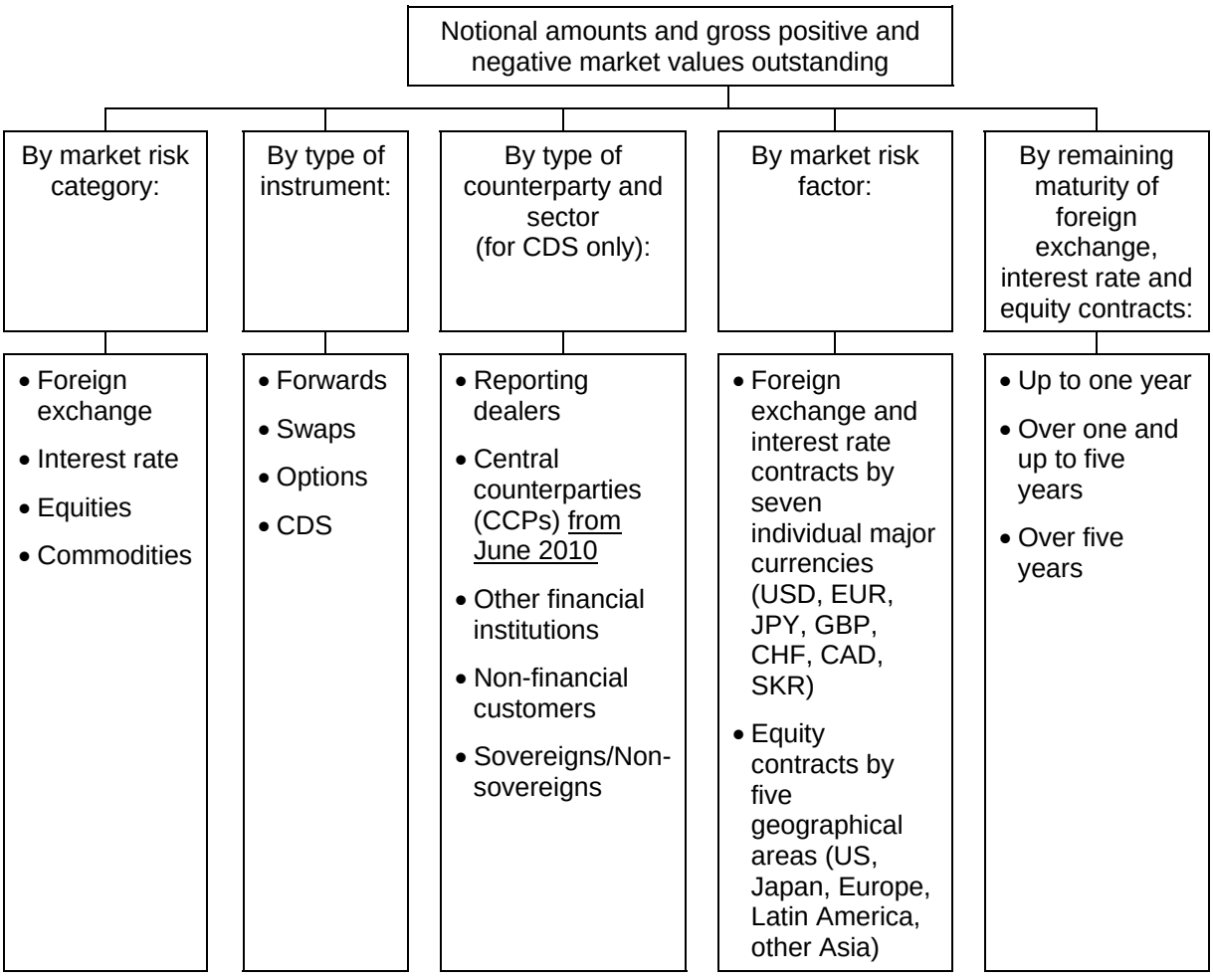
For notional amounts outstanding and gross positive and negative market values, the following breakdowns are provided:

- *Market risk category*: foreign exchange, interest rate, equity, commodity and unallocated,[23] with a further breakdown into gold, precious metals and other commodities.
- *Type of instrument*: forwards, swaps and options.

[23] The category “unallocated” is an estimate of the positions in FX, IR, Equity, commodity and credit derivatives contracts held by those institutions that do not participate in the semi-annual OTC survey but contribute to the "BIS Triennial Survey", i.e. positions held by the so called "non-regular reporters”. The data from the corresponding Triennial Survey acts as a benchmark of the global activity in the derivatives market, and it is used to gross-up the amounts reported in the subsequent semi-annual OTC surveys in order to obtain a more comprehensive view of the global market activity.

- *Type of counterparty*: reporting dealers, other financial institutions and non-financial customers (the separate identification of positions vis-à-vis reporting dealers allows the BIS to eliminate double-counting of positions between reporting dealers). A sectoral classification is also requested as regards the CDS data (Sovereigns/Non-sovereigns)
- *Market risk factor*: for foreign exchange and interest rate contracts, a breakdown is available by at least seven individual major currencies; for equity contracts, a breakdown is available by five major geographical regions relating to the location of issuance of the underlying instruments.
- *Maturity*: data on foreign exchange, interest rate and equity contracts are broken down by three bands of remaining maturity to expiry of the contracts (with a further breakdown by counterparty and instrument), ie up to one year, over one year and up to five years, and over five years.

Disaggregation of semi-annual central bank OTC derivatives statistics



3. Publication of the statistics

The BIS publishes the data on derivatives markets in the statistical annex of the *BIS Quarterly Review* as well as in the statistical release of the corresponding semi-annual OTC derivatives survey.

For confidentiality reasons, not all details of the collected information can be provided in the set of annex tables published in the Quarterly Review. Thus, the BIS only publish fairly aggregated statistics in the following format:

19 Amounts outstanding of OTC derivatives by risk category and instrument

20 Amounts outstanding of OTC foreign exchange derivatives

A By instrument and counterparty
B By currency
C By instrument, maturity and counterparty

21 Amounts outstanding of OTC single currency interest rate derivatives

A By instrument and counterparty
B By currency
C By instrument, maturity and counterparty

22 Amounts outstanding of OTC equity-linked and commodity derivatives

A Equity-linked and commodity derivatives by instrument and counterparty
B Equity-linked derivatives by instrument and market
C Equity-linked derivatives by instrument, maturity and counterparty

23 Derivative financial instruments traded on organised exchanges by instrument and location

A Notional amounts
B Number of contracts

In addition to the data published in the Quarterly Review, the BIS publish a semi-annual statistical release with the preliminary results of the OTC derivatives statistics. This statistical release includes a set of annex tables covering data that is not published in the Quarterly Review, namely, notional amounts and gross market values of credit default swaps contracts and Herfindahl concentration measures.

More detailed data and a full set of historical time series are available on the BIS website under http://www.bis.org/statistics/derstats.htm.

V. Triennial central bank survey of foreign exchange and derivatives market activity

1. Overall coverage

Every three years, the BIS coordinates a global central bank survey of foreign exchange and derivatives market activity on behalf of the Markets Committee and the Committee on the Global Financial System. The exercise provides comprehensive and internationally consistent information on turnover and amounts outstanding in these markets and it also serves as a benchmark for the semi-annual OTC derivatives market statistics.

The first three Triennial surveys conducted by the BIS, in 1986, 1989 and 1992, were limited to the foreign exchange markets. Subsequently in 1995, 1998, 2001, 2004 and 2007 both the foreign exchange and the derivatives markets have been surveyed. Data on credit default swaps were collected for the first time in 2007. The data coverage and number of participating countries have both increased with each new survey. The latest survey, which took place in the spring of 2007, had the largest number of participating countries (54) and the most detailed breakdown of individual currencies (42).

The results of the surveys since 1995 are available with all main breakdowns on the BIS website under *http://www.bis.org/publ/rpfxf07t.htm* as well as in separate hard copy publications.

2. Reporting countries and institutions

More than 1,200 individual banking offices in 54 countries participated in the turnover part of the 2007 triennial survey, reporting turnover in foreign exchange spot and foreign exchange and interest rate derivatives markets. This part of the survey was carried out on a locational basis with transactions between offices of the same banking group being reported on a gross basis. In contrast, the reporting of notional amounts outstanding and gross market values of derivative contracts was collected from 55 major dealers (regular semi-annual reporters) in G10 countries plus more than 400 additional institutions in 43 countries. The amounts outstanding part of the survey was conducted on a worldwide consolidated basis in accordance to the regular semi-annual OTC derivatives statistics.

3. Basic information

The triennial survey encompasses the following three measures of foreign exchange and derivatives market activity:

(i) Turnover in notional amounts

Turnover data provide a measure of market activity and can also provide an indication of market liquidity. Turnover is defined as the gross value of all new deals entered into during a given period and is measured in terms of the nominal or notional amount of the contracts. In addition to foreign exchange spot transactions, turnover data are requested for foreign exchange and interest rate derivatives.

(ii) Notional amounts of contracts outstanding

Nominal or notional amounts outstanding provide a measure of market size and are defined as the gross nominal or notional value of all deals concluded and not yet settled at the reporting date.

(iii) Gross positive and negative market values of contracts outstanding

Gross market values is another measure of market size and supply information about the gross transfer of price risks in the derivatives markets. In the same way as for the regular

OTC derivatives market statistics, they are defined as the sums of the absolute values of all open contracts with either positive or negative replacement values evaluated at market prices prevailing at the reporting date. All data are reported to the BIS in US dollars. Transactions and positions in other currencies, and non-US dollar legs of transactions involving the US dollar on one side, are converted into US dollars by reporting dealers at the exchange rates prevailing at the end of each reporting period.

4. Disaggregation

For each of the three measures, the following breakdowns are provided:

(i) Market risk category

For turnover, data are only collected for two market risk categories: foreign exchange and interest rate contracts. For amounts outstanding, almost the same market risk categories of contracts are distinguished as for the semi-annual OTC derivatives statistics: foreign exchange, interest rate, equity, commodity, credit derivatives (credit default swaps) and "other" derivatives. Data on commodity derivatives are collected with a further breakdown into gold, precious metals and other commodities.

(ii) Type of instrument

Separate data are in principle provided for the same instruments as in the semi-annual OTC derivatives statistics: forwards, swaps and options. For credit default swaps, single and multi name instruments are separately collected. The triennial survey also provides separate information on "other" products in the foreign exchange and interest rate market risk category, such as products with multiple exposures that cannot be easily decomposed into separable market risk components.

(iii) Type of counterparty

The same types of counterparties are distinguished separately as in the semi-annual OTC derivatives statistics: reporting dealers, other financial institutions and non-financial customers. The separate identification of transactions and positions vis-à-vis reporting dealers is needed in order to allow the BIS to eliminate double-counting of transactions and positions between reporting dealers. For turnover data the triennial survey also provides for a breakdown between domestic and cross-border transactions. For credit default swaps additional information is requested on the economic sector of the obligor (see vi).

(iv) Market risk factor

For turnover of foreign exchange and interest rate contracts the triennial survey provides a very detailed currency breakdown consistent of 42 currencies. For amounts outstanding, the currency breakdown for foreign exchange and interest rate contracts includes seven individual currencies. For equity contracts the breakdown is in five geographical areas and is, in principle, the same as for the semi-annual OTC derivatives statistics.

(v) Maturity

For amounts outstanding, data on foreign exchange, interest rate and equity contracts are broken down by the following three bands of remaining maturity to expiry of the contracts: up to one year, over one year and up to five years, and over five years. The maturity breakdown is available with a further breakdown by counterparty and type of instrument in the same way as for the semi-annual OTC derivatives statistics. In addition, the triennial survey provides a breakdown of turnover data for outright forwards and foreign exchange swaps by the following three maturity bands: up to seven days, more than seven days and up to one year, and over one year.

(vi) Sector (for credit default swaps only)

A breakdown is requested regarding the economic sector of the obligor of the underlying reference obligation (reference entity) between Sovereigns and Non-sovereigns. Sovereigns classification represents public entities, such as central, state and local government ones, excluding public financial and non financial firms.

Disaggregation of the triennial central bank survey of foreign exchange and derivatives market activity in 2007

Foreign exchange and OTC derivatives turnover and amounts outstanding of all reporting countries

By individual reporting country

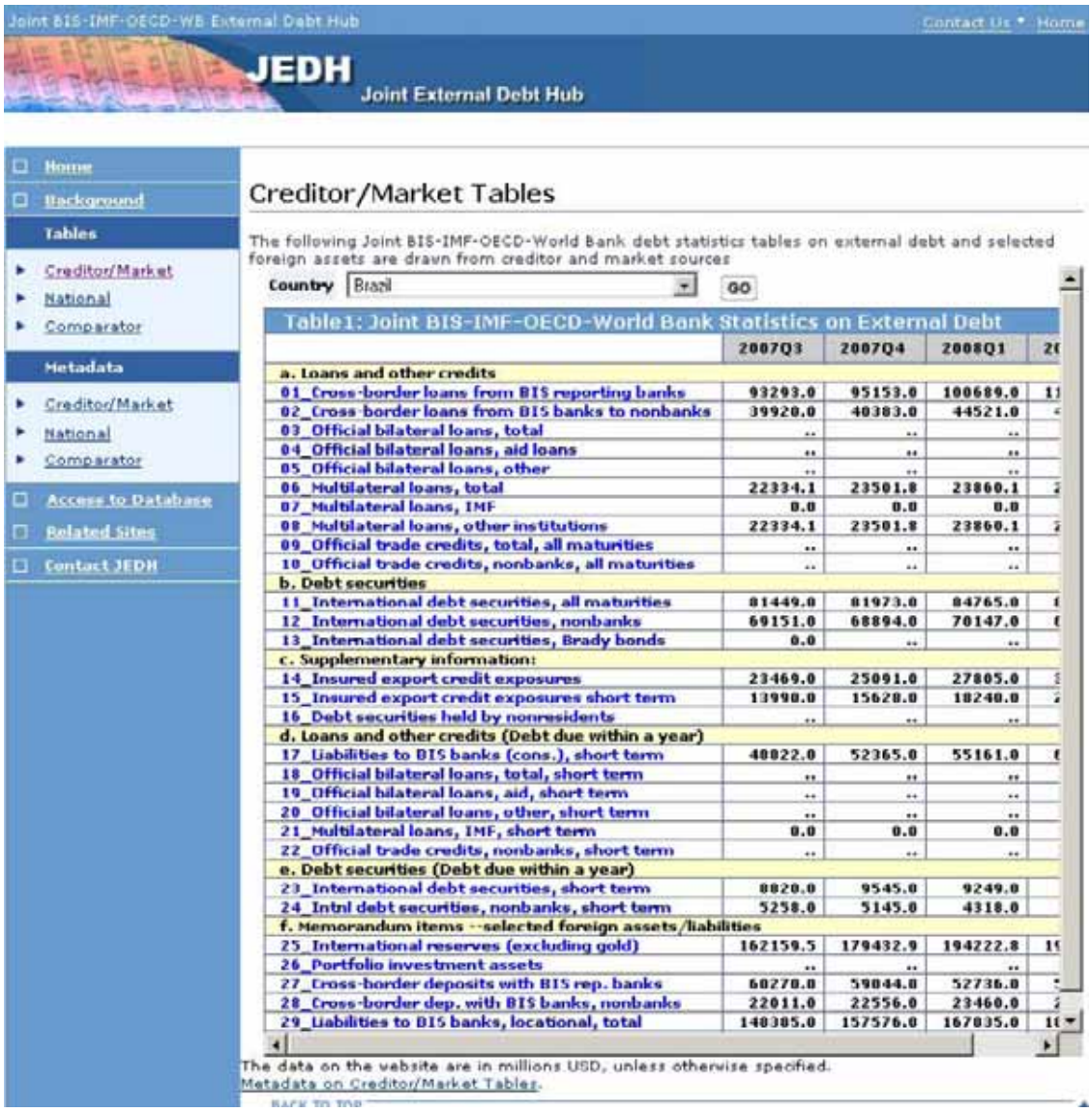
Turnover in notional amounts	Notional amounts outstanding and gross positive and negative market values
By market risk category: – Foreign exchange – Single currency interest rate	By market risk category: – Foreign exchange – Single currency interest rate – Equities – Commodities – Credit derivatives / credit default swaps – Other
By instrument: – Spot (forex) – Forwards – Swaps – Options – Other products	By instrument: – Forwards – Swaps – Options – Other products
By counterparty: 1. Type: – Reporting dealers – Other financial institutions – Non-financial customers 2. Location: – Local – Cross-border	By type of counterparty and sector: – Reporting dealers – Other financial institutions – Non-financial customers – Sovereigns/Non-sovereigns (CDS only)
and	**and**
By remaining maturity (outright forwards and foreign exchange swaps only): – Up to 7 days – Over 7 days and up to 1 year – Over 1 year	By remaining maturity (foreign exchange, interest rate and equity instruments only): – Up to 1 year – Over 1 year and up to 5 years – Over 5 years
By currency: – 42 individual currencies	By currency: – 5 individual currencies for foreign exchange and interest rate transactions By location: – 5 geographical areas for equity-linked products

5. Publication of the statistics

The BIS publishes the data on the triennial survey of foreign exchange and derivatives market activity in separate press releases and publication. The press releases, one on the turnover part, the other on the amounts outstanding one, provide preliminary aggregates while a separate report (the last one published in December 2007) covers the final more detailed data.

VI. Joint External Debt Hub (www.jedh.org)

Statistics on external debt are published in a joint undertaking of the BIS, IMF, OECD and World Bank, working together in the Inter-Agency Task Force on Finance Statistics.[24] Launched in March 2006, the JEDH provides a one-stop source of comprehensive external debt statistics compiled from national and creditor/market sources. It replaced the former "Joint BIS-IMF-OECD-World Bank External Debt tables" and expanded the available range of information, most significantly by providing worldwide dissemination of official external debt data by as many countries as possible.



[24] The Inter-Agency Task Force on Finance Statistics (TFFS) is one of the inter-agency task forces endorsed by the UN Statistical Commission and the Administrative Committee on Co-ordination – Sub-Committee on Statistical Activities and was set up in 1992. It was reconvened in 1998 to coordinate work among the participating agencies to improve the quality, transparency, timeliness and availability of data on external debt and international reserve assets. The Task Force is chaired by the IMF and includes representatives from the four organisations that have collaborated to produce this data - the BIS, the IMF, the OECD and the World Bank – as well as from the European Central Bank, the European Statistical Office, the Commonwealth Secretariat, the Paris Club and the United Nations (UNCTAD).

1. Quarterly External Debt Statistics (debtor/national data)

The QEDS database, initially launched in November 2004, brings together in the JEDH national external debt statistics that are compiled and published individually by countries that subscribe to the IMF's Special Data Dissemination Standard (SDDS). These data are made available in the JEDH website in easily accessible format to improve access to comparable, standardised debtor data.

2. External debt statistics compiled from creditor and market sources

Uniquely, the JEDH also provides comparator data on countries' external debt. These are regular data that are currently compiled and published separately by the contributing international agencies on components of countries' external debt and international reserve assets. The intention is to facilitate timely and frequent access by a broad range of users to comparable data sets.

The data from creditor and market sources cover debt to banks, international debt securities, (including Brady bonds), borrowing from multilateral organisations and official bilateral loans. Discontinued OECD data on official and officially-supported trade credits have been replaced by data on insured trade credits exposures reported from a larger group of creditors by the International Union of Credit and Investment Insurers (Berne Union) to the BIS.

There are necessarily some gaps in coverage on the creditor side. The most important gaps relate to (i) non-insured suppliers' credit not channelled through banks; (ii) some private placements of debt securities; (iii) domestically issued debt held by non-residents; and (iv) deposits of non-resident non-banks in domestic institutions. There is also some overlapping coverage, since long-term trade credits are provided mainly by banks. In summary, creditor-sourced aggregates for individual countries may understate (or sometimes overstate) total external debt.

The organisations collaborating on these statistics are working to improve their collection systems and to gradually enhance their content (in terms of quality, coverage, frequency and timeliness), as part of more general efforts towards greater transparency

3. Metadata

In addition to creditor/market and national data and comparator, the JEDH provides its users with access to extensive metadata for each time series. Metadata can be accessed directly from the data tables or from dedicated pages on the JEDH site.

VII. Quality of the BIS international financial statistics

The following assessment of the quality of the BIS international financial statistics is structured along the lines of the IMF's Data Quality Assessment Framework (DQAF).[25] The DQAF consists of six sections. In addition to a set of prerequisites of data quality (Section 1 below), it covers five dimensions of quality (Sections 2-6 below): integrity, methodological soundness, accuracy and reliability, serviceability, and accessibility.

1. Prerequisites of quality

1.1 Legal and institutional environment

The central bank oversight body for the BIS international financial statistics is the Committee on the Global Financial System (CGFS), which is a BIS-based central bank forum for the monitoring and examination of broad issues relating to financial markets and systems. The CGFS is responsible for elaborating appropriate policy recommendations to support the central banks in the fulfilment of their responsibilities for monetary and financial stability.[26] Based on the recommendations of the CGFS, the BIS is given responsibility for the collection, production and dissemination of international statistics.

For the statistics based on data provided by the central banks or monetary authorities (the international banking statistics, the over-the-counter (OTC) derivatives statistics and the triennial central bank survey of foreign exchange and derivatives market activity), procedures for the efficient and timely flow of data are well established.[27]

The confidentiality of individual reporting entity data is guaranteed and procedures to prevent disclosure of confidential data are in place. Access to confidential data is limited to staff members for whom such information is required for the performance of their duties.[28] To ensure a proper understanding of data requirements, to discuss possible improvements to the statistics and to avoid duplication of effort, contacts between the BIS and the reporting central banks or monetary authorities are maintained through regular correspondence and meetings.

Participation in the OTC derivatives statistics is based on a mutual agreement between the participating central banks. The reporting population for the BIS banking statistics extends beyond the G10 countries, and although participation is on a voluntary basis, the number of reporting central banks or monetary authorities has increased steadily over time and will most likely continue to do so in the future. Participation is encouraged partly by the provision of various kinds of support (eg technical and methodological guidance) from the BIS to potential new reporters and partly by the fact that new reporters are offered access – by reciprocal agreement – to the full data set of existing reporters.

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[25] See http://dsbb.imf.org/dqrsindex.htm.

[26] Further information is available on: http://www.bis.org/cgfs/index.htm.

[27] In contrast to the banking, foreign exchange and OTC derivatives statistics, data for all other statistics are collected from commercial data sources.

[28] In the present management of the confidentiality, BIS is asking reporting countries to classify the data on three levels: Confidential (for BIS use only), Restricted (sharable with other reporting central banks) and Free (available to the public).

1.2 Resources

The allocation of resources is reviewed at regular intervals to ensure that sufficient resources for the performance of existing tasks are available. To ensure an optimal use of existing resources, new and more efficient technologies for the processing and/or dissemination of data are continuously reviewed. Proposals for changes to the statistics are accompanied by cost/benefit analyses.

For the maintenance and development of necessary staff skills and qualifications, resources are earmarked to provide on-the-job training in relevant areas such as statistical methods, financial markets and computer technology.

1.3 Quality awareness

To ensure that the BIS international financial statistics remain a key source of public information on international financial market developments, studies are carried out from time to time by the CGFS and BIS researchers to review the usefulness of the statistics and to identify any emerging data requirements or opportunities for streamlining the data.

The reporting central banks and monetary authorities, which are among the prime users of the data, have designated staff members as contact persons for the various sets of statistics, who act as an advisory council for changes in the BIS international financial statistics.

2. Integrity

A number of measures are in place to ensure that the principle of objectivity in the collection, processing and dissemination of statistics is firmly adhered to.

2.1 Professionalism

The BIS is an independent international organisation[29] and does not depend on financial support from any government or other public entity.

The legal and financial independence of the BIS prevent any improper external influence on the content or release of statistical information ensuring the impartial compilation of the statistics with the choice of source data, statistical methods and definitions based purely on statistical and data quality considerations. To minimise the possibility of misinterpretation or misuse, the data are accompanied by analyses and explanatory briefings when released to the public.

Within the organisation, professionalism is maintained and promoted through analytical work and staff participation in and organisation of lectures, conferences and meetings with other professionals.

2.2 Transparency

The BIS international financial statistics are published in press releases and/or in the statistical annex of the *BIS Quarterly Review*, as well as on the BIS website (www.bis.org).

[29] The Hague Agreements of 1930 established the BIS as an international organisation governed by international law with the privileges and immunities necessary for the performance of its functions. The international legal character of the BIS and the privileges and immunities that it has enjoyed in Switzerland since its foundation were confirmed in the Headquarters Agreement concluded by the BIS with the Swiss Federal Court in 1987. Further information can be found on the BIS website: http://www.bis.org/about/legal.htm.

They are clearly identified as BIS products by both name and logo. On the BIS website more detailed statistical information and a full set of historical time series are available free of charge. When the statistics are used or reproduced attribution is generally requested, and in the case of joint publication (such as the JEDH website on external debt; see Part VI), the contribution of the BIS is clearly identified.

No governmental organisations have access to the data prior to release to the public.[30]

Users are notified in advance through press releases or dedicated articles in the *BIS Quarterly Review* of major methodological changes, whereas minor changes to the statistical methodology are announced at the time of publication.

2.3 Ethical standards

The BIS Staff Regulations clearly specify the rules of conduct in general and the rules with regard to confidential information in particular. New staff members are made aware of these guidelines when they join the organisation, and all staff members are reminded periodically of the guidelines.

3. Methodological soundness

To a large extent, the methodology of the BIS international financial statistics follows internationally accepted standards, guidelines or good practices.

3.1 Concepts and definitions

The collection of the BIS international banking statistics is based on separate guidelines to the locational and the consolidated statistics available on the BIS website – BIS (2006, revised in 2008). Similarly, the OTC derivatives statistics and the triennial central bank survey of foreign exchange and derivatives market activity are collected and prepared according to the *Guidelines for the OTC derivatives statistics and the triennial survey*. These documents are prepared and maintained by statisticians at the BIS, in close consultation with central bank colleagues and CGFS analysts, and have been accepted as the relevant standards by the reporting institutions, which comprise a large number of the world's major central banks and monetary authorities.

To minimise reporting burdens and to maximise the comparability and consistency of BIS international financial statistics, internationally accepted guidelines and good practices are generally observed whenever applicable.

The locational banking statistics are based on the principle of residency that is in line with the methodology of balance of payments and international investment position statistics. The consolidated banking statistics are largely based on bank supervision principles, ie where the reporting of a bank head office is inclusive of its foreign offices (branches and subsidiaries) worldwide with all inter-office accounts being netted out. This principle of consolidation also applies to the OTC derivatives statistics.

In summary, the guiding principle for the BIS international financial statistics is that existing standards and guidelines are used as far as possible to ensure consistency and minimise the reporting burden. If, owing to the unique nature of the statistics, no standards exist, the BIS

[30] Reporting central banks/monetary authorities and selected news agencies have access to the data shortly before release to the public; see Section 6.1 below.

itself develops and sets appropriate standards in close consultation with central bank and other international experts.

3.2 Scope

In principle, the scope of the BIS international financial statistics is to provide comprehensive coverage in their respective areas of focus. In practice, the actual coverage (see Section 4.1 below) must balance costs and benefits as well as feasibility and desirability. To illustrate this by an example, the reporting population for the BIS international banking statistics is made up of the world's most significant banking centres rather than all countries in the world.

3.3 Classification/sectorisation

Where applicable, classification and sectorisation are broadly consistent with internationally recommended statistical guidelines such as the 1993 SNA (System of National Accounts) and the 1995 ESA (European System of Accounts). One exception worth mentioning is the treatment of central banks as part of the public sector rather than as part of the financial sector in the BIS securities statistics.

The applied country and currency codes follow the ISO classification.

3.4 Basis for recording

To ensure consistency with other statistical systems such as balance of payments and international investment position statistics, the recommended basis for valuation of financial claims in the BIS international banking statistics is generally market prices, unless contractual or nominal values are generally deemed more appropriate than market values.

Exchange rate adjusted changes in the locational banking statistics are calculated by converting the stock data into their original currency and then converting the change in amounts outstanding to US dollars using period average rates.

In the BIS securities statistics, the information on stocks outstanding of issued securities is based on nominal values. For the data on international debt securities, net flows are calculated as the difference between completed issues (based on the payment date) and repaid issues calculated as the sum of early repayments (such as exercised put and call options or sinking funds) and scheduled repayments (based on the maturity date). The methodology for calculating exchange rate adjusted changes for the data on domestic debt securities is similar to the one applied in the locational banking statistics.

The recording basis for the OTC derivatives statistics and the triennial central bank survey of foreign exchange and derivatives market activity is market values (positive and negative) as well as notional amounts, whereas the exchange-traded derivatives statistics are valued only in terms of the notional principal calculated as the number of contracts multiplied by the face value of the derivatives contract. For the calculation of notional amounts of equity index contracts, the latest values of stock market indices are used.

In accordance with international practice, the BIS uses the US dollar as the numeraire in its statistics. Stock data are converted from national currencies into US dollars using end of period exchange rates.

4. Accuracy and reliability

Source data and statistical techniques are sound and statistical outputs are considered to portray reality in a suitable manner.

4.1 Source data

The available source data are considered to be timely and sufficient to provide an adequate basis for compiling global financial statistics. To ensure that data collection remains comprehensive, the data sources are reviewed periodically.

For the BIS international banking statistics, analyses suggest that the overall coverage of the data exceeds 95% of global foreign banking business. To ensure that the coverage remains high, efforts are made on a continuous basis to include countries/territories with substantial evolving international banking business in the reporting population.

The coverage of the international debt securities statistics, for which data from three markets sources are merged after extensive quality control and elimination of double reporting, is believed to be fairly comprehensive, for example by reference to the annual IMF CPIS. The data on domestic debt securities, which are mainly collected from central bank sources, include the OECD countries plus selected major emerging market countries.

The triennial central bank survey of foreign exchange and derivatives market activity is estimated to cover at least 92% of global market activity, and by using this survey as a benchmark the coverage of the OTC derivatives statistics can be calculated as about 88% of the survey or 81% of the global size of the market. The current product coverage of the exchange-traded derivatives statistics is estimated to be in excess of 95% of total global activity, and efforts are made on a continuous basis to further improve coverage by including more contracts and exchanges.

4.2 Statistical techniques

Data management procedures are completely computerised and thoroughly documented.

Statistical methods are used to a limited degree to fill reporting gaps in the BIS international banking statistics. These estimation techniques conform to best practice statistical procedures. Examples of statistical methods used (in the context of the locational banking statistics) are:

- A few reporting economies provide only a sectoral or currency breakdown for total claims/liabilities with no further breakdown by individual debtor/creditor country. In this case, the latter is estimated by applying the percentage distribution of the totals to each individual country.
- A small number of reporting economies provide only a split between domestic and foreign currency with no further breakdown by individual foreign currencies. For the compilation of exchange rate adjusted changes, data for the missing currencies are estimated by applying the currency distribution of all industrial countries' positions vis-à-vis the reporting entity in question.
- One reporting centre (the Bahamas) only provides figures on a semi-annual basis.[31] The statistical method used to estimate the missing quarters is to initially bring forward the figures from the preceding quarter[32] and later, when figures for the next quarter have become available, by interpolating between the two surrounding quarters.

[31] Figures for US banks in the Bahamas, which constitute about two thirds of the total, are available on a quarterly basis.

[32] This is considered best practice given the fact that the series does not show any clear trend over time.

- In case of late reporting, data are estimated by bringing forward the figures for the previous quarter.

The estimation methods are communicated to the group of contributing central banks and monetary authorities on a regular basis and are made available to the general public on request. Over time, most reporting centres have adjusted their reporting to eliminate gaps in their reporting.

Statistical methods are also applied to the results of the triennial central bank survey of foreign exchange and derivatives market activity in order to estimate reporting gaps. This procedure is based on information on coverage from each participating country and is described in the publication presenting the results of the survey.

4.3 Assessment and validation of source data

Source data are routinely assessed either as part of the data compilation process (BIS securities and exchange-traded derivatives statistics) or as part of the general statistical quality control (BIS international banking and OTC derivatives statistics, triennial central bank survey of foreign exchange and derivatives market activity). No sampling procedures are applied by the BIS.

4.4 Assessment and validation of intermediate data and statistical outputs

The final statistical outputs are subject to plausibility checks and are reviewed both internally at the BIS and by the contributing central banks and monetary authorities. Occasionally, consistency studies with comparable data sources are performed (eg between locational by nationality and consolidated data, IMF FSI and BIS consolidated data, BIS debt securities and IMF Coordinated Investment Portfolio Investment Survey (CPIS), semi-annual OTC and Triennial surveys, consolidated banking data and semi-annual OTC ones, etc).

4.5 Revision studies

Revision studies have shown that data revisions do not follow a sustained pattern. Consequently, revisions do not entail any information for statistical processes that could potentially be applied to enhance the accuracy of the data.

5. Serviceability

The BIS international financial statistics are considered to be relevant, timely and consistent. The revisions policy is believed to be appropriate.

5.1 Relevance

The relevance of the BIS international financial statistics is assessed at biannual meetings with the contributing central banks and monetary authorities, who are among the principal users of the data. Feedback from central banks and international organisations as well as from other users of the data is also received on a continuous basis through written correspondence or in the context of meetings, seminars and conferences.

In addition, since 2006, the CGFS organises regular workshops[33] for researchers and economists on the use of the BIS international financial statistics where working papers are discussed and later on published.

The feedback received suggests that the BIS international financial statistics are considered relevant both for tracking global developments in financial markets and as input in other statistical systems.[34] Also, the BIS statistics constitute the principal input of the JEDH statistics on external debt (see Part VI).

5.2 Timeliness and periodicity

Being aware of the importance of providing regular and timely information, the BIS publishes provisional banking statistics with a short commentary as soon as possible after the end of the reference period in a press release. In cooperation with the reporting central banks, the BIS is also continuously investigating potential improvements.[35] Examples of significant progress are the move from semi-annual to quarterly periodicity for the consolidated banking statistics in 2000 and the ongoing reduction of the publication time lag by altogether two months to about 16 weeks currently.

5.3 Consistency

Due mainly to the continuous inclusion of new reporting economies, the BIS international banking statistics contain a number of breaks in series,[36] which are clearly documented in their effect on the stock figures. A complete list of breaks in series/revisions in the BIS banking statistics and the debt securities statistics is available on the BIS website.

A major break in the consolidated banking statistics took place in 1999, when the reporting economies started to report claims vis-à-vis each other. This change in methodology had a large impact on the global total as well as the subtotals for claims vis-à-vis developed countries, whereas the figures on claims vis-à-vis offshore centres and developing countries were unaffected.

All reporting central banks and monetary authorities use the same reporting structure to report the BIS international banking statistics, which in principle ensures the internal consistency of the data. Improvements in reporting have succeeded in ensuring consistency between the locational banking statistics on a residency basis, the locational banking statistics on a nationality basis and the consolidated statistics. A comprehensive description of reporting gaps is given by reporting country in the BIS guidelines to the international banking statistics (2006, revised in 2008), and is available on the BIS website.

The international debt securities statistics are generally consistent back to 1996, when a substantial break in series occurred as a result of a change in commercial data sources. For

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[33] First one was convened in December 2006, a second one in December 2008.

[34] Some countries use the BIS statistics to close gaps in their balance of payments and international investment position statistics.

[35] The collection, production and dissemination of statistics based on central bank reporting is normally a lengthy process. In case of the consolidated statistics, the data need first to be aggregated and verified on the level of the head offices of the individual reporting institutions. The next step is the transmission of the data to central banks where they need to be aggregated and verified on the national level. The final step is the transmission of national aggregates to the BIS where the data are aggregated and verified on the global level before they are released to the general public.

[36] New reporting economies are traditionally introduced in the fourth quarter of a given year.

the same reason, the consistency of the OTC derivatives statistics only goes back to 1998, whereas the exchange-traded derivatives statistics and the statistics on announced international equity issues are largely consistent for their whole history.[37] In contrast to this, the methodology used in the triennial central bank survey of foreign exchange and derivatives market activity has been continuously revised in order to enhance the coverage and usefulness of the data.

5.4 Revision policy and practice

Revisions to the BIS international financial statistics are incorporated and published at the time of release of new data.

For the BIS international banking statistics, due to improved timeliness, revisions can be significant in quarters when the published data include data rolled forward for some reporting countries that have not submitted data in time.

For the BIS securities statistics, revisions can occasionally be substantial, mainly because of revisions in the source data, whereas revisions for the derivatives statistics are negligible.

6. Accessibility

The data and metadata, both in printed form and on the BIS website, are easily available and assistance to users is readily available.

6.1 Data accessibility

The BIS international financial statistics are made available as a hard-copy version in press releases and the *BIS Quarterly Review*, where the data are accompanied by analyses of current-period developments supported by illustrative tables and graphs. In addition to this, the statistics are published on the BIS website, where more detailed information and a full set of historical time series are available free of charge in machine-readable form for easy download and further analysis.

A schedule for data release is announced in advance on the BIS website. The data are released simultaneously to all interested users on the date and time specified in the release schedule.

Non-published sub-aggregates are made available upon request, provided that they are not confidential.

In addition to the contributing central banks and monetary authorities, selected news agencies are given access to the data before release to the public.[38]

6.2 Metadata accessibility

Documentation of the BIS statistics is provided in Chapters II-V of this publication as well as in the form of explanatory notes in the different publications (press releases and the *BIS Quarterly Review*).

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[37] A change in data sources for the exchange-traded derivatives statistics took place in 2000, but the resulting break in series is minor.

[38] In the press alert sent to the news agencies, it is clearly stated that the data are strictly confidential and that a breach of the embargo or disclosure of any details will result in exclusion from future releases of embargoed information.

For the BIS international banking statistics, a more detailed and technical description is given in the BIS guidelines to the international banking statistics (2006, revised in 2008), which is available on the BIS website. Similarly, a thorough description of the methodology underlying the semi-annual OTC survey and the triennial central bank survey of foreign exchange and derivatives market activity is published on the BIS website together with the results of the surveys. Code lists (country, currency, data type...) to be used for the reporting are also made available.

6.3 Assistance to users

All statistical releases are accompanied by contact details (telephone number and e-mail address). For each set of statistics, prompt and knowledgeable service and support is available to all users.

VIII. The uses of the BIS international financial statistics

1. Overview

This chapter provides a description and some examples of the uses of the BIS international financial statistics, covering topics such as

- Monetary stability
  - The bank lending channel and monetary transmission
  - Augmentation of monetary and credit aggregates
- Changes in financial intermediation
- Contribution to balance of payments and external debt statistics
  - External debt owed to banks
  - External debt owed to non-banks
  - Other issues in measuring external debt
- Vulnerability of national balance sheets
  - Risks of external borrowing
  - Risk exposures of creditor banks
  - Quantitative measures of financial integration

The data are analysed on a regular basis in the *BIS Quarterly Review* under the heading of "Highlights of international banking and financial market developments".[39] In-depth research using the BIS data is published in BIS Working Papers (eg McGuire and Tarashev, 2008; Jeanneau and Micu, 2002) and in CGFS Papers (2007, 2009) presented at special workshops.

2. Monetary stability

2.1 The bank lending channel and monetary transmission

- Cetorelli and Goldberg (2009) find that the globalisation of banking in the United States is influencing the monetary transmission mechanism both domestically and in foreign markets. Large globally oriented banks rely on internal capital markets with their foreign affiliates to help smooth domestic liquidity shocks. They also show that these internal markets contribute to international propagation of domestic liquidity shocks to lending by affiliated banks abroad.
- Correa and Murry (2009) expand on these results, using the BIS consolidated banking data. They find that global banks reduce cross-border claims by larger margins during monetary contractions compared to local banks without foreign offices, because they can rely on their foreign offices to satisfy the demand for credit of their foreign clients. They quantify that US banks' cross-border claims drop four percent in reaction to a 100 basis point increase in the federal funds rate. BIS data on the claims of non-US banks are used as a robustness check for foreign

[39] In addition, special feature articles in the *BIS Quarterly Review* use BIS international financial statistics. See for example McCauley and Mo (2000).

credit demand, confirming that there is a significant effect of monetary policy on cross-border lending.

- Iazzetta and Manna (2009) make the distinction between "too big to fail" and "too interconnected to fail", applying network topology to the BIS banking statistics. They find that since the 2007 crisis, central banks have effectively acted as lender of last resort and delegated some of their supply of base money through bilateral swap lines. They conclude that the effectiveness of these measures depends on the extent to which use of a currency is "international", ie traded outside and without involvement of its domestic banking system, which they find is given mainly for the US dollar and the Swiss franc, and less for the Euro and other global currencies.
- Understanding global financial crisis and the stresses on bank balance sheets requires a perspective on banks' international investment positions and how these positions are funded across currencies and counterparties. McGuire and von Peter (2009) splice the locational and consolidated BIS banking statistics to identify the cross-currency and counterparty funding patterns for the largest banking systems, enabling them to assess the causes of the US dollar funding problems of European banks during critical phases of the 2007 crisis.

2.2 *Augmentation* of monetary and credit aggregates

The BIS statistics facilitate the augmentation of domestic monetary and credit aggregates to capture cross-border and foreign currency positions. Indeed, this was the motivation for introducing the locational banking statistics in the 1960s. The growth of the so-called eurocurrency markets (international deposit and loan markets) raised concerns among policymakers at the time about the possible macroeconomic consequences of the expansion of the money supply through these markets (Mayer (1979)). The BIS locational banking statistics greatly improved the monitoring of money and credit growth. Policymakers' concerns abated over time, as central banks reduced their focus on monetary targets and countries moved from closely regulated and administered financial systems to more open and competitive ones. Nevertheless, reference to broad measures of money and credit that include international positions remains as important today as in the 1960s for understanding domestic monetary and financial conditions.

Domestic credit aggregates typically do not include cross-border borrowing by non-bank residents. The BIS locational banking statistics capture cross-border credit – loans, deposits, debt securities and other assets – provided directly by banks.

- Monticelli (1993) uses the locational statistics to derive six different monetary aggregates for the European Union.
- McCauley and Ma (2000) find that the foreign currency deposits of domestic non-banks amounted to 11% of broad money in the euro area, and to more than 50% of broad money in Switzerland and Hong Kong. Even in those countries where cross-border credit is not large as a proportion of total bank credit, it can be an important source of financing for specific sectors.
- Based on the locational statistics, McCauley and Seth (1992) estimate that in the early 1990s over 20% of total loans to commercial and industrial enterprises in the United States were booked offshore.

The BIS international financial statistics were expanded in the 1980s to include international issuance of money market instruments, bonds and notes and later to include outstanding stocks of domestically issued debt securities. The international and domestic debt securities data sets compiled by the BIS are adjusted for known overlaps in issuance and so are broadly comparable. The international data are compiled from three different market sources to ensure the broadest possible coverage. Users need to be aware that the data on domestic

debt securities are supplied by national statistical offices and are thus compiled using different methodologies. The international debt securities statistics are based on individual issues, whereas the domestic debt securities statistics are based on aggregated data. In addition, the domestic debt securities do not cover all countries, although those covered are by far the largest markets. Banks purchase a substantial amount of securities. These are reported separately in the banking data and must be excluded to avoid double-counting when combining the various BIS statistical series to extend domestic credit aggregates.

Borrowers have increasingly turned to domestic and especially international capital markets to raise funds. Indeed, in 1999 the international debt securities market surpassed the international banking market as the most important source of cross-border credit to non-banks.

In 2007, the Committee on the Global Financial System (CGFS) released a report on financial stability and local currency bond markets (CGFS (2007)), and mandated the BIS to once a year update key statistics with a view to regularly publishing data on remaining and original maturity and on the structure of domestic debt instruments for a broader set of emerging market economies.

- Using these data, Pomerleano and von Kleist (2007) illustrate how most emerging markets have succeeded in improving financial stability by lengthening the maturity structure of domestic debt, while noting that local debt in Asia was boosted in particular by greater debt securities issuance by central banks accumulating foreign exchange reserves.

The BIS also publishes data on announcements of international equity securities issues, which signal borrowers' efforts to raise equity financing. Because announcements frequently differ from actual issuance and no information is available about share repurchases, these data do not, however, provide precise estimates of net new financing.

3. Changes in financial intermediation

Another use of the BIS statistics is to document changes in financial intermediation. Many of the statistics published by the BIS can be disaggregated by instrument, type of counterparty and residence of reporting institution. Therefore, in addition to monitoring the growth of various market segments, the BIS statistics allow changes within these segments to be examined, such as the relative importance of non-financial customers in derivatives markets or of offshore financial centres. This is done regularly in the sections on market developments in the *BIS Quarterly Review*.

- Several analytical studies have used the BIS statistics to make a variety of other comparisons. Alworth and Andresen (1992) use the locational banking statistics to examine the linkages between the origin and destination of non-bank cross-border deposits. The Study Group on Fixed Income Markets (2001) combines the domestic and international debt securities statistics to compare and contrast the US dollar, euro, yen and sterling markets.
- Kambhu et al (1996) use the triennial survey data to examine the role of derivatives markets in the transfer and trading of risk.
- Gallardo and Heath (2009) look at changes in the way foreign exchange transactions are executed, based on the BIS triennial survey data, and provide some quantitative estimates of the importance of electronic trading across transaction types, counterparties and economies.

The various statistical series published by the BIS are broadly comparable if account is taken of the different way in which each is compiled. Nevertheless, features or characteristics of different markets may complicate direct comparisons. For example, in exchange-traded

derivatives markets, the reversal of an initial position leads to a decline in notional stocks because contracts are offset through a centralised counterparty. By contrast, in OTC markets, positions are usually reversed by writing a new contract, resulting in an increase in notional stocks.

The foreign exchange and OTC derivatives statistics are disaggregated into dealers, other financial institutions and non-financial customers. If coupled with information from other sources, this may even make it possible to identify more precisely the types of players behind changes in activity.

- Dixon (2001) illustrates how the BIS banking statistics can be used to help monitor intermediation via offshore financial centres, including borrowing by hedge funds.
- Galati, Heath and McGuire (2007) and McCauley and von Kleist (1998) refer to the locational banking statistics to assess the importance of carry trade strategies.
- Becker and Clifton (2007) use the foreign claims of BIS reporting banks on offshore banking centres as a broad indication of the on-balance sheet leverage of hedge funds.

The off-balance sheet activities of market participants can also be monitored using the BIS derivatives statistics. The quarterly exchange-traded derivatives statistics that are based on data provided by the exchanges and the semi-annual OTC derivatives statistics that are compiled from central bank survey data measure the notional principal of the underlying contracts. Various breakdowns are available, including by type of instrument, category of risk, currency, or some combination of type, risk and currency. Market values and credit exposures, ie market values after taking into account legally enforceable bilateral netting agreements, are also available for the OTC statistics.

Another use of these statistics is to measure changes in market liquidity. Turnover in exchange-traded derivatives markets is available from the exchange-traded derivatives statistics, and turnover in OTC derivatives and foreign exchange markets from the triennial survey. However, turnover is only one of several dimensions of liquidity and needs to be complemented by other indicators of market liquidity, such as pricing data.[40]

4. Contribution to compilation of balance of payments and external debt statistics

The use of the BIS statistics to augment domestic credit aggregates is relevant to improving the coverage of private sector non-banks' claims on and liabilities to foreign banks in national balance of payments accounts. This approach was recommended by an IMF working party following an enquiry into the principal sources of discrepancies in the global capital account (IMF (1992)). A number of national statistical agencies now regularly substitute data reported to the BIS for their domestic source data, leading to significant improvements in the coverage of non-banks' external positions (eg Bach (2001)).

In the wake of the Asian financial crisis in the late 90s the BIS, IMF, OECD and World Bank began to publish jointly creditor and market data on components of countries' external debt and international reserve assets that the contributing international agencies had been compiling and publishing separately before. This was to facilitate more timely and frequent access by a broad range of users to these data. The BIS contributes the data on bank

[40] See also CGFS (1999) and Galati (2001) for a discussion of the limitations of turnover data as an indicator of market liquidity.

lending and international debt securities to the joint series (see section VI above for more details). Although the locational banking statistics are not compiled to monitor external debt, they are useful in this context because their reporting conventions are consistent with those of balance of payments and international investment position statistics.

There are gaps and overlaps in the external debt components of the joint statistics; therefore, they are not a substitute for data from national sources and no total creditor estimate of external debt is provided. Rather, they serve as a complement to national data. In addition, the joint statistics are sometimes more timely than national data and occasionally more comprehensive (eg for the external borrowing of non-banks - see Moreno and von Kleist (2007) and the discussion below.

4.1 External debt owed to banks

The BIS publishes statistics on consolidated international banking activity. These also provide information about cross-border borrowing from banks, and consolidated data on short-term bank lending is provided in the joint external debt hub (JEDH) statistics for comparative purposes.[41] However, since the consolidated data are collected to monitor the foreign exposure of reporting banks, their interpretation is different from that of conventional measures of external debt.

The locational banking statistics are consistent with national accounts or balance of payments data and are compiled on the basis of the residency of the reporting bank. The locational statistics cover the cross-border positions of all banks domiciled in the reporting area, including positions vis-à-vis their foreign affiliates. By contrast, the consolidated statistics are based on supervisory data, compiled by nationality of the reporting bank and netting out intra-group positions. Cross-border lending to banks' own affiliates in the locational statistics is instead captured as lending to end borrowers in the consolidated statistics.

In countries with little international banking business, the difference between external debt owed to banks based on the locational statistics and the same stock based on the international component of the consolidated statistics is often not large. However, the difference between cross-border and international claims can be significant in individual countries. In many economies, a large proportion of banks' local claims in foreign currencies are funded locally, and so international claims tend to be much larger than cross-border claims. In international banking centres, funds channelled to own affiliates are typically on-lent to non-residents, and so international claims tend to be much smaller than cross-border claims. Cross-border claims on residents of offshore banking centres totalled $4.1 trillion at end-June 2008, but international claims on offshore centres only $2.0 trillion; inter-office positions accounted for most of the difference.

Coverage of international banking activity in the BIS statistics is nearly complete. The largest centres of international financial activity all contribute to one or both sets of banking statistics and, moreover, the reporting area is continually expanding. Nevertheless, it should be noted that the locational statistics do not include positions booked in non-reporting countries, and the consolidated statistics only partially cover the positions of banks headquartered in such

[41] Users of the joint statistics are reminded that the consolidated data are collected under reporting conventions that differ from those applicable to external debt.

countries.[42] The locational and consolidated banking statistics will, therefore in principle understate debt owed to banks by individual countries to some extent.

Banks contributing to the BIS locational and consolidated banking statistics report stocks, not flows. For the locational statistics, banks report the currency in which their claims and liabilities are denominated, and this allows quarterly stock changes to be calculated by adjusting outstanding stocks for currency movements during the quarter. Although actual flows will have taken place at different exchange rates, exchange rate adjusted changes in outstanding stocks can provide an approximation of data on flows. A currency breakdown is not available for the consolidated statistics, and consequently exchange rate movements can result in changes in consolidated positions reported in US dollars even when underlying positions remain unchanged. The currency breakdown from the locational statistics can be applied to the consolidated statistics to provide approximate estimated changes adjusted for exchange rate movements (see Gadanecz and von Kleist (2007) for details).

The BIS also provides syndicated loan statistics that can be used to monitor cross-border bank flows. Again, they are not a substitute for data on actual flows: they refer to signings, which may not be the same as disbursements, and information about repayments or outstanding stocks is not available.[43] Nevertheless, they are more timely than the other two sets of BIS banking statistics and provide details about the purpose, maturity and pricing of syndicated facilities, details that are helpful for understanding the nature of international bank lending.

- Gadanecz and von Kleist (2002) find that under certain conditions and for certain classes of borrowers, the syndicated credit data can also provide some useful advance information about the consolidated statistics. Furthermore, the syndicated statistics are useful for monitoring borrowers' access to loan markets.

4.2 External debt owed to non-banks

Debt owed to international banks is of course only one of several components of external debt. Other types of investors, including pension funds, insurance companies, hedge funds and retail investors hold an increasing proportion of external debt. Unfortunately, little information is available from creditor sources about debt owed by individual countries to these non-bank investors.

External debt owed to non-banks can be approximated by referring to data on debt securities issued to international investors. The BIS statistics on international debt securities are the most comprehensive source of such data. Announcements, completions, scheduled repayments and early repayments are all tracked. The repayments data collected by the BIS are especially valuable because they allow refinancing needs to be monitored and net new issues to be calculated.

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[42] The consolidated banking statistics cover the worldwide consolidated claims of banks headquartered in the BIS reporting area, and the unconsolidated claims of offices domiciled in the reporting area but owned by banks headquartered in countries outside the reporting area.

[43] The syndicated credit statistics will tend to overestimate gross cross-border loan flows. First, facilities arranged as support for commercial paper programmes or standby credits may never be drawn down. Other facilities may be only partially drawn down because of changes in the borrower's investment plans or a breach of loan covenants. Second, the syndicated statistics include a mix of instruments, such as multi-option facilities that are part loan and part security. Third, international lending within a given tranche is sometimes not readily identified because the exact amount provided by each institution, and in particular that provided by banks domiciled in the same country as the borrower, is unknown.

Banks are large players in the international debt securities market, as investors, underwriters and issuers, and to this extent there is an overlap between the BIS banking statistics and the international debt securities statistics. A breakdown of banks' international positions by instrument - loans, deposits and securities - is publicly available from the fourth quarter of 1995 for the locational banking statistics, so this overlap can nowadays be eliminated.

4.3 Other issues in measuring external debt

Issuance in the international debt securities market is no longer as reliable a proxy for cross-border portfolio flows as it once was. With more countries liberalising their capital accounts and financial markets, the distinction between international and domestic markets has become less meaningful over the years. As a result, the international securities statistics of the BIS could over- or understate residents' external obligations. On the one hand, if investors domiciled in the country of the issuer purchase debt securities sold in the international market, stocks of international debt securities will tend to overstate cross-border portfolio holdings.[44] Bond issues marketed to both residents and non-residents are in fact becoming more common. On the other hand, if non-residents invest in domestic securities markets, the stocks of international securities computed by the BIS will tend to understate cross-border holdings. For instance, while most government securities are issued locally and so are not included in the international securities database, in many countries a sizeable proportion of government debt is purchased by non-residents.

However, a comparison of the issues reported in the annual IMF Consolidated Portfolio Investment Survey with the BIS international debt securities tend to largely confirm the country distribution of issues of securities as indicated by the BIS securities statistics. In addition, BIS is undertaking an important revision of its collection system for the domestic debt securities in order to reduce the potential overlap with the international debt securities statistics (see Section III 1.1).

In its strict sense, external debt refers to residents' contractual liabilities to non-residents.[45] It is necessary to supplement external debt with other measures that more clearly identify the risks to which a country or sector may be exposed, such as the liquidity risk associated with short-term debt.

In addition to loans, deposits and debt securities, financial derivatives make up an increasing (albeit in most countries still small) component of external debt. Futures, swaps, options and other types of derivatives give rise to contractual obligations that may involve cross-border settlement. For the purposes of measuring external debt, it is the market value (or net present value) of these contracts that is of relevance, not the value of the underlying instruments. The BIS publishes data on the gross market values of various types of derivatives traded in OTC markets; however, only a global aggregate is available because dealers contributing to these statistics are currently not required to report the residency of

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[44] The international debt securities database covers three types of instruments: securities denominated in a currency different from that of the market in which they are issued ("eurobonds"); securities denominated in the currency of the market in which they are issued, but issued by non-residents (foreign bonds, such as "yankee" bonds in the US market); and securities denominated in the currency of the market in which they are issued, issued by residents, but targeted to non-residents. For this last type of instrument, tranches targeted to domestic investors are sometimes identified separately from those targeted to international investors, in which case the BIS statistics on international securities issues would not necessarily overstate portfolio flows.

[45] The Inter-Agency Task Force on Finance Statistics uses the following definition: "Gross external debt, at any given time, is the outstanding amount of those actual current, and not contingent, liabilities that require payment(s) of principal and/or interest by the debtor at some point(s) in the future and that are owed to no-residents by residents of an economy" (BIS et al (2001), p 17).

their counterparties. These data are not intended to measure external debt of individual countries, but are meant to provide a benchmark indication of the potential global size of liabilities arising from derivatives positions. In the context of the 2007 financial crisis, a task force under the auspices of the CGFS is examining potential enhancements to the statistics on credit risk transfer instruments that have been reported to the BIS since end 2004.

5. Vulnerability of national balance sheets to external bank lending

5.1 Risks of external borrowing

Conventional measures of external debt can in some circumstances be an unreliable indicator of potential vulnerabilities. Through guarantees, collateral, derivatives and other off-balance sheet transactions, risk may be transferred from a debtor in one country – the immediate borrower – to a debtor residing elsewhere – the ultimate obligor. Moreover, data disaggregated by maturity, currency, sector or creditor can help to highlight risks that may not be apparent in the gross figures.

While balance of payments measures of external debt are based on the residency of the immediate borrower, measures based on the residency of the ultimate obligor may sometimes be more useful, such as to monitor rollovers or initiate a restructuring. For example, borrowing by a bank's foreign affiliate in London or some other international banking centre will not be captured by external debt statistics. Yet it could potentially result in problems at head office if the affiliate has difficulty rolling over its obligations. Alternatively, borrowing by the foreign subsidiary of a multinational corporation might be guaranteed by the parent, resulting in a contractually binding transfer of risk from one country to another. The consolidated banking statistics currently capture some of these risk transfers (see below) and more comprehensive coverage has been made available since end-2004.

- Another important indicator of vulnerability is the maturity structure of a country's external debt. Financial crises in various emerging markets in the late 1990s demonstrated that a rapid build-up of short-term debt can undermine financial stability even in countries with moderate levels of external debt (Hawkins and Klau (2000)).

More specifically, the ratio of short-term debt to banks relative to foreign exchange reserves can indicate external vulnerability. A maturity breakdown is available for the debt securities statistics and the international component of the consolidated banking statistics.[46] In fact, the consolidated banking statistics are one of the few sources of internationally comparable data on short-term external debt. The maturity breakdown for the consolidated statistics is reported on the basis of remaining maturity. The availability of a one- to two-year maturity bracket allows the proportion of short-term debt that was originally longer-term to be estimated.[47]

The currency breakdown available in the BIS international banking statistics also helps to highlight potential risks. External debts denominated in foreign currencies are more likely to

[46] A maturity breakdown is not available for the locational banking statistics. The breakdown from the consolidated banking statistics could be applied to the locational banking statistics to arrive at a measure of short-term bank debt consistent with balance of payments reporting principles. Alternatively, the instrument breakdown from the locational banking statistics could be applied to the consolidated banking statistics to minimise overlaps with the international debt securities statistics. Neither option is likely to give reliable estimates, however.

[47] This method will tend to underestimate the proportion of short-term debt that was originally longer-term because Germany, the United States and Luxembourg do not report a one- to two-year breakdown and Hong Kong SAR does not report any maturity breakdown.

expose borrowers to liquidity or even solvency risk than debts denominated in their local currency. For the international debt securities statistics, a full currency breakdown is available, making it possible to determine the proportion of international debt securities issued in the currency of the borrower.

Banks contributing to the locational statistics do not report every currency in which their claims and liabilities are denominated, only the major currencies.[48] Using the available information, it is possible to estimate an upper bound on the amount of bank debt that might be denominated in the currency of the borrower, as well as to identify currency mismatches arising from, for example, the receipt of export revenues in one currency and the servicing of debts in another.

An important caveat when interpreting the currency breakdown available in the locational and debt securities statistics is that it covers only on-balance sheet liabilities. Issuers may hedge their foreign currency exposure with export revenues or external assets, or through derivatives. Owing to the current lack of information about the residency of counterparties, these data do not shed light on hedging activity in individual countries.

- Lane and Shambaugh (2007) combine information from several international data sources including the BIS international banking and securities statistics to estimate the currency composition of countries' assets and liabilities in a "new portfolio balance" model. Their findings highlight the importance of modelling the dual role of exchange rates in the international adjustment process, with the financially weighted exchange rate index operating through the valuation channel, and the trade-weighted index influencing net exports. They find that the potential importance of the valuation channel is secularly increasing, in line with the rapid growth in the gross levels of foreign assets and liabilities.
- Lane and Shambaugh (2009) build on this work to find that the net foreign asset position plays a key role in determining aggregate foreign-currency exposure, with the equity share in foreign liabilities being quantitatively more important than the composition of foreign debt liabilities. Moreover, they find that many countries issuing domestic-currency foreign debt liabilities are also significant holders of domestic-currency foreign assets, such that the net impact on aggregate foreign currency exposure is limited.
- Blank and Buch (2007) analyse how quickly international portfolios of commercial banks react to macroeconomic developments at home and abroad, based on short- and long-term determinants of banks' international asset portfolios in an integrated empirical model. Using bilateral quarterly BIS data, they find that an increase in the interest rate differential between the home and the foreign economy increases banks cross-border assets and lowers cross-border liabilities. Geographic distance, country risk, and market size explain some of the cross-country differences in the speed of adjustment to a new equilibrium.
- McGuire and Tarashev (2008) examine whether the 2007 financial crisis might be prompting banks to reassess their exposures to emerging economies. Panel regression analysis of data since the early 1990s indicates that deterioration in bank health is associated with a decline in the growth of credit to emerging markets.

[48] Banks report seven currency categories: the currency of their country of residence, US dollar, euro, yen, pound sterling, Swiss franc and other currencies.

- McGuire and von Kleist (2008) use the locational banking statistics to assess the growth in international banking activity around periods of major stress in global financial markets and changes in underlying real economic activity. Their exercise suggests that growth in international bank claims has in several cases accelerated in the years prior to a significant financial shock, particularly in the US dollar segment of the interbank market, before decelerating after the shock occurs.

The maturity and currency breakdowns can be further disaggregated by sector to identify those sectors most exposed to liquidity or foreign currency risk. The Asian financial crisis of 1997-98 highlighted the importance of monitoring the external positions of the financial and corporate sectors separately from that of the public sector (FSF (2000)). The locational banking statistics provide information about international banks' claims on the bank and non-bank sectors, and the consolidated banking statistics further split the non-bank sector into public and private sectors. The international debt securities statistics provide an even finer breakdown of the non-bank sector. While the maturity breakdown in the consolidated banking statistics cannot be combined with the sectoral breakdown, the breakdowns available for the other statistics can be disaggregated by sector.

A further source of potential debtor vulnerability is limited creditor diversification. A borrower that relies on a heterogeneous group of creditors for external financing may be less likely to be affected by contagion (see Moreno and von Kleist (2007)). The distribution of bank claims by nationality of bank is available from the consolidated banking statistics. The distribution of bank claims by residency of bank is available from the locational banking statistics, but residency is a less meaningful basis upon which to judge the heterogeneity of creditors than nationality. The heterogeneity of a country's creditors can also be assessed by comparing the amount of financing provided by banks to that provided through the international debt securities market.

Finally, liabilities alone give an incomplete picture of a country's potential vulnerabilities. Even if liabilities are small or stable, a country's external position can still be undermined by capital flight. In addition, residents frequently have foreign assets available to meet a sudden need for liquidity, although those holding the assets may differ from those borrowing abroad. Funds placed with banks abroad are covered by the locational banking statistics. Owing to such assets, countries with large external debts may in fact be net external creditors.

5.2 Risk exposures of creditor banks

What is a debt to a borrower is of course an asset to a creditor. Indeed, it was the desire to monitor banks' foreign assets that led to the introduction of the consolidated banking statistics following the Mexican debt moratorium of 1982. Changes in banks' foreign assets are visible in the locational banking statistics. However, owing to the residency principle on which the locational statistics are based, it is not possible to assess the exposure of national banking systems to individual countries. In particular, the locational statistics do not capture positions booked in non-reporting countries, and do not allow the breakdown by residency of the counterparty to be combined with the breakdown by nationality of the reporting bank. In contrast, the consolidated statistics were designed to focus explicitly on banks' foreign credit risk exposures, in that they measure on a worldwide consolidated basis the foreign claims of banks headquartered in the reporting area.[49]

At the time that the consolidated statistics were introduced, authorities in the reporting area were especially concerned about transfer risk, ie the risk associated with policy measures

[49] Foreign claims comprise BIS reporting banks' cross-border claims plus their foreign offices' local claims.

that have a territorial jurisdiction, such as capital controls or payments moratoriums.[50] As a result, the consolidated statistics measured only claims on an immediate borrower basis (also referred to as contractual claims). Furthermore, the focus was on the international component of consolidated claims, ie reporting banks' cross-border claims in all currencies plus their foreign offices' local claims in foreign currencies. The other component of consolidated claims - local claims in local currencies - was typically funded locally and so was not seen to incur transfer risk. The rationale for including local claims in foreign currencies together with cross-border claims was that they were likely to be funded from abroad, and so would be subject to transfer risk.

Financial crises in Asia and other emerging markets in the late 1990s, and changes in the structure of international banking, led to a re-evaluation of the information conveyed by the consolidated banking statistics. Owing in large part to the growing globalisation and sophistication of banking and financial markets, contractual claims have become a less accurate measure of banks' credit risk exposures. Off-balance sheet transactions can significantly modify on-balance sheet claims. Owing to the way in which the value of derivatives claims is measured, the impact of derivatives may be even larger during periods of abnormal volatility in market prices. Between June 1997 and December 1997, following the flotation of the Thai baht, the amount owed to US banks by counterparties in Thailand via foreign exchange and derivatives products nearly quadrupled to $2.5 billion, rising from 15% of on-balance sheet claims to 89% (US Congress Congressional Budget Office (2002)).

Another important way in which on-balance sheet claims can be altered is through guarantees, collateral and other credit risk transfers. For example, lending to the subsidiary of a foreign bank in London may be booked as lending to a UK counterparty, but the ultimate obligor is likely to reside elsewhere. Reallocations of claims from the immediate borrower to the ultimate obligor can significantly increase banks' exposures to some countries and reduce them to others.

In addition to the growing globalisation and sophistication of markets, cross-border mergers and acquisitions have altered the risks faced by banks. In particular, the growing share of locally funded business in banks' foreign claims shifts the balance of risks away from transfer risk and more towards country risk, ie the risk associated with the economic, business, political and social environment in which the debtor operates. Whereas transfer risk is associated with cross-border claims, all foreign claims - cross-border and local, foreign currency and local currency - are subject to country risk.[51] When the consolidated statistics were first introduced, local claims accounted for a small proportion of banks' foreign claims; this is no longer the case. In 1985 local claims in local currency accounted for only 6% of reporting banks' foreign claims on emerging economies. By March 2002 this proportion had risen to 40%, falling back to 33% in June 2008.

- McCauley et al (2002) explore this shift from international to locally funded business.

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[50] The counterparty breakdown available in the consolidated banking statistics was at first limited to developing countries. This reflected monetary and financial authorities' concern about the large amount of bank lending to developing countries, a concern that heightened following Mexico's declaration in August 1982 of a moratorium on its external debt payments. In the second quarter of 1999, the statistics were expanded to cover all countries.

[51] The BIS recently changed the presentation of the consolidated banking statistics to give greater emphasis to country risk exposures and to enhance the comparability of the statistics across national banking systems. Whereas previously the focus was on BIS reporting banks' international claims, now the tables in which the consolidated banking statistics are presented focus on total foreign claims.

The consolidated banking statistics were expanded in June 1999 to capture risk transfers. As currently reported, consolidated claims measured on an ultimate risk basis reallocate guaranteed claims to the country of residence of the guarantor and transfer claims on legally dependent bank branches to the country of residence of the parent bank. In accordance with the recommendations of the Committee on the Global Financial System (CGFS (2000)), the consolidated banking statistics were further expanded (end-2004) to capture additional aspects of banks' credit risk exposures, including off-balance sheet financial contracting.

5.3 Quantitative measures of financial integration

Linkages between individual market participants have increased significantly in recent decades both within and across market segments. This has occurred at the domestic as well as at the international level. Increasing use of information technology, financial innovation and deregulation have been important factors in this respect. Whilst competition in the financial industry has increased there has also been a trend towards greater concentration, both at the level of individual firms and in terms of key financial market infrastructures.

Strengthened financial linkages contribute to the efficiency of financial markets and help to diffuse pressures in individual markets by offering competing and alternative channels of financial intermediation. At the same time there is the possibility that uncertainties, as expressed in market volatility or changes in patterns of activity, can be reinforced rather than dampened and can be transmitted from one market segment to another (see BIS (1992) and Bernard and Bisignano (2000)).

- Von Peter (2009) uses the banking statistics in network analysis to identify financial centres by their central position in the global financial system, showing that important network positions need not come with size. The analysis casts doubt on the idea that the distribution of financial activity across space will become uniform over time as a result of advances in communication technology.
- Hattori and Suda (2007) use a cross-border bank exposure network based on BIS banking statistics to identify implications for international financial stability. They conclude that the international financial system may be becoming more "robust yet fragile".
- Kalemli-Ozcan, Papaioannou and Peydró (2009) use BIS locational banking data to test whether financial integration leads to lower consumption volatility and lower business cycle synchronisation. In contrast to earlier empirical work, they confirm these predicted effects.
- Arribas et al (2009) develop a new international financial integration indicator, which they apply to the banking systems of 18 countries. They conclude that financial integration has advanced rapidly over the last few years. Notable differences among countries are however both persistent and growing.
- McGuire and von Peter (2008) use the banking statistics to trace the longer-term developments in the interbank market which contributed to the funding difficulties experienced at the outset of the financial crisis. They analyse banks' bilateral interbank exposures, at the level of national banking systems, and discuss the emerging signs of a credit contraction.

6. Recent improvements to the BIS statistics

The BIS statistics have evolved with the changing policy concerns of monetary and financial authorities and the changing structure of banking and financial markets. The first set of statistics - the locational banking statistics - focused on monetary stability. As discussed above, subsequent series have gradually shifted towards a focus on financial stability.

Improvements continue to be made to the statistics to reflect financial innovations. Consolidated banking statistics on an ultimate risk basis with a detailed sectoral breakdown and including off-balance sheet positions began to be published in 2005, providing a more comprehensive measure of the country risk exposures of internationally active banks. As international financial markets change, the country and instrument coverage of the data reported by central banks to the BIS is adapted to maintain their relevance to policy makers and other users.

Although the statistics were originally compiled with a specific purpose in mind, they nevertheless have a wide range of possible uses. These uses include augmenting monetary and credit aggregates, monitoring external debt, analysing banks' country risk exposures and documenting changes in financial intermediation. As markets change, so too will the possible uses of the statistics. It is not feasible to accommodate changes in markets and uses by constantly refining the way in which the statistics are compiled and disseminated. Not only would the cost burden of constant refinements to institutions reporting the statistics be too high, but there is also value in long, consistent time series.

Providing that their intended purposes are taken into account, the BIS statistics are sufficiently flexible to give insights into many aspects of banking and financial markets. In addition, other sources might be available to monitor specific innovations. Whenever major changes in financial intermediation or techniques are identified, the BIS and the reporting central banks will continue to consider modifications in the statistics, such as the improvements in the consolidated statistics (end-2004), in OTC (2004) and CDS data (2005). Further refinements are expected to be implemented in the near future on credit risk transfer instruments and debt securities statistics, as well as of cross-border banking positions.

Annex:
Terminology used in the BIS international financial statistics

A number of different terms, such as *cross-border*, *external*, *international*, *foreign*, *domestic* and *local*, are used to describe the coverage and breakdown of various sets of data in the BIS international financial statistics. Unfortunately, precise internationally agreed definitions do not exist for most of them. The situation is further complicated by the fact that the different statistics have been collected to capture developments in specific markets, and the same terms are therefore not always used with exactly the same meaning in the different statistics. This annex tries to provide some clarity about the definitions used in the BIS international financial statistics both generally and with respect to individual market segments.

1. General framework

The terms *domestic* or *local* are used interchangeably to describe a financial relationship between entities that are located in the same country (ie residents) as well as to describe the currency of a given country. However, the two terms take on different meanings when used to describe different types of banks in the banking statistics: for a given country, *domestic* refers to a bank headquartered in the country in question, whereas the term *local* is used to define all banks located in a given country regardless of where their head office is located (ie domestic and foreign banks, see below).

The terms *cross-border* or *external* are always used interchangeably. *Cross-border* is defined in balance of payments methodology as describing a relationship between entities that are located in two different countries.

The terms *foreign and international* combine elements from the *cross-border* and *local/domestic* definitions, but the precise definition varies somewhat for the different sets of statistics, as described below. Apart from this, the term *foreign* is also used more generally to describe the currencies of other countries. With respect to types of banks, *foreign* is used, for a given country, to describe resident banks with headquarters located in another country.

2. Locational banking statistics

The locational banking statistics capture information on *international* claims and liabilities (jointly referred to as positions) of all banking offices located in a given country, regardless of whether they are *domestic* or *foreign*.[52] As shown in the matrix below, the term *international* covers the sum of *cross-border* (or *external*) positions and *domestic* (or *local*) positions in *foreign* currencies. *Domestic* positions in *domestic* currency are not included in the statistics.

<table>
<tr><td colspan="3">Total claims of all banking offices (A + B + C)</td></tr>
<tr><td colspan="2">International positions (A + B)</td><td rowspan="2">Domestic/local positions in domestic/local currency (C)</td></tr>
<tr><td>Cross-border/external positions (A)</td><td>Domestic/local positions in foreign currencies (B)</td></tr>
</table>

Note: Shaded areas indicate positions excluded from the BIS locational banking statistics; bold italics indicate claims published in the locational banking statistics.

[52] Hence, the methodological basis is equivalent to balance of payments and international investment position statistics.

3. Consolidated banking statistics

The consolidated banking statistics mainly capture consolidated claims of domestic banking groups, ie *domestic* banks with head offices in a given country and their *foreign* offices (branches and subsidiaries). Since the focus, and consequently the reporting basis, for the consolidated banking statistics is on measuring country risk exposures, some of the terms used have a somewhat different meaning, as visualised in the matrix below.

International claims comprise all *cross-border* claims of *domestic* banks and of their *foreign* offices plus *local* claims of their *foreign* offices[53] in *foreign* currency. Moreover, a broader concept of *foreign* claims is used, which includes these *international* claims as well as *local* claims of reporting banks' *foreign* offices in *domestic* currency.

Types of claims

A	**B**	**C**	**D**
Cross-border claims	Local claims of foreign affiliates in foreign currency	Local claims of foreign affiliates in local currency	Domestic claims in the reporting country

International claims (A + B)

Foreign claims (A + B + C)

Note: The shaded area indicates claims excluded from the consolidated banking statistics; bold italics indicate claims published within the consolidated banking statistics. The definition and content of A, B and C differ according to whether the ultimate risk basis or the immediate borrower basis is being used, due to the influence of risk transfers.

4. Securities statistics

The securities statistics separate *international* issues of securities from *domestic* issues. *International* issues cover issues by resident borrowers in *foreign* markets, issues by resident borrowers in *foreign* currency in the *domestic* market and issues of resident borrowers in *domestic* currency in the *domestic* market targeted at non-resident investors. Thus, the concept of *international* in the securities statistics is broader than in both sets of the international banking statistics as illustrated below.

It should be reminded that this classification will be replaced from 2010 by the one presented on page 21.

[53] For example claims on Mexican residents of an affiliate or subsidiary of a US headquartered bank in Mexico.

<table>
<tr><td colspan="4">Total issues (A + B + C + D)</td></tr>
<tr><td rowspan="3">Issues by residents in foreign markets (A)</td><td colspan="3">Issues by residents in the local market (B + C + D)</td></tr>
<tr><td rowspan="2">In foreign currency (B)</td><td colspan="2">In local currency (C+D)</td></tr>
<tr><td>Targeted to non-resident investors (C)</td><td>Targeted to resident investors (D)</td></tr>
<tr><td colspan="3">International issues (A + B + C)</td><td>Domestic issues (D)</td></tr>
<tr><td colspan="4">Note: Shaded areas indicate issues that are not published separately in the BIS securities statistics. Bold italics indicate data published in the securities statistics.</td></tr>
</table>

5. Foreign exchange and derivatives statistics

In the foreign exchange and derivatives statistics, the terms *cross-border* and *local* are only used for turnover data in the context of the triennial central bank survey of foreign exchange and derivatives market activity. The meaning of the terms is fully consistent with the locational banking statistics.

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