

**BANK FOR INTERNATIONAL SETTLEMENTS**

**Monetary and Economic Department**

**THE BIS STATISTICS ON INTERNATIONAL BANKING AND  
FINANCIAL MARKET ACTIVITY**

**Basle**

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## I.

### Introduction

The origins of the BIS's activities in the field of international financial statistics go back more than thirty years to the emergence of the phenomenon known as the Euro-dollar market, and the policy concerns it raised for the central banks of the Group of Ten countries, under whose auspices the collection of data began. Since then, international financial market activity has mushroomed, and as the related central bank policy concerns have either grown or changed, the BIS databases in this area have also grown and been adapted. Originally the data were confined to international banking, but they now also cover international securities markets and, increasingly, derivatives markets as well. The aim of this brochure is to describe these data and to explain how the various series are constructed and what they seek to measure.

The historical concern which gave rise to the first BIS data collection exercise was the possible monetary implications of the rapid growth of the Euro-currency markets, whose unchecked development it was felt necessary to monitor. In time, however, this concern abated, but in its place came others, notably the rise in the indebtedness of many developing countries to international banks in the wake of the first oil shock. While this build-up was clearly visible in the quarterly banking statistics, as far as individual borrowing countries were concerned, it was not possible to evaluate certain risk characteristics of the exposures of particular banking systems to those countries. The need for such information therefore led, from 1983 onwards, to the reporting of semi-annual data on a fully consolidated basis. This was also accompanied by an expansion of the reporting area for the quarterly statistics. At the same time, the progressive internationalisation and growing scale of global financial market activity created a need for increased statistical monitoring both within the field of international banking and, latterly, in the area of international securities financing. More recently there has been growing interest in the use of the BIS statistics to improve the accuracy of the recording of balance-of-payments flows following the recommendations of an IMF Working Party (the "Godeaux Report").<sup>1</sup> Indeed, the US Department of Commerce now regularly incorporates BIS data in its compilation of the US balance-of-payments accounts, and has noted significant improvements in their accuracy.<sup>2</sup> Finally, as Part IV of this brochure describes, the BIS is becoming increasingly involved in the collection and publication of international data on derivatives market activity, most notably now in connection with the triennial Central Bank Survey of Foreign Exchange Market Activity. The latest of these surveys took place in March/April 1995 and was expanded to collect more detailed data on derivative instruments. As was the case thirty years or so ago, this latest exercise was again undertaken in response to new central bank policy concerns, and, in particular, at the request of the Group of Ten central banks.

In addition to their use for policy-related monitoring purposes by central banks, the data have proved to be of interest to private sector market participants. They are also used by the International Monetary Fund in the compilation of its international financial statistics. The BIS makes the data available to the public in various aggregated and disaggregated forms. In addition to the Bank's Annual Report, the main BIS publication concerned with these data is the quarterly report on "International Banking and Financial Market Developments". The semi-annual publication "The Maturity, Sectoral and Nationality Distribution of International Bank Lending" presents the consolidated banking data relevant to the analysis of country risk exposure. The Bank also publishes, jointly with the OECD, half-yearly reports on countries' foreign indebtedness which include trade-related non-bank credits in addition to bank lending. Finally, mention has already been made of

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<sup>1</sup> "Report on the Measurement of International Capital Flows", International Monetary Fund, September 1992.

<sup>2</sup> C. L. Bach: "US International Transactions, Revised Estimates for 1984-93", Survey of Current Business, June 1994, pp. 79-85.

the triennial central bank foreign exchange market survey and its recently extended coverage of derivatives market activity; detailed results will be made available in a separate publication, as was the case with the previous survey.

This brochure is structured around the three basic areas covered by the BIS international database: international banking (Part II); international securities markets (Part III); and derivatives and foreign exchange markets (Part IV). The description covers the sources, compilation and transformation of data, and output. In addition, some of the uses, actual or potential, of each of the main components of the statistics are identified. A more detailed description of the BIS international banking statistics is provided in a separate document, "Guide to the BIS Statistics on International Banking", published in April 1995.

## II.

### International banking statistics

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

- (i) quarterly statistics on the international assets and liabilities of banks based on the location of the reporting institution;
- (ii) semi-annual statistics on the worldwide consolidated international assets of reporting banks; and
- (iii) quarterly statistics on announced international syndicated credit facilities.

While differing in several important respects, the first two of these sets of data share the following characteristics:

- they are collected indirectly, i.e. by individual central banks, and are transferred to the BIS after aggregation at the level (and under the responsibility) of individual reporting countries;
- they consist of positions (stocks of assets and liabilities) at reporting dates (end of quarter or end of half-year periods) and are expressed in US dollars, with "flow" data being calculated (where possible) by the BIS.

The third set of statistics, on announced credit facilities, differs from the first two sets in the following ways:

- the data are obtained solely from the Bank of England, which collects them from various market sources;
- they refer only to announcements of loans, which may be only partially drawn, or used to replace earlier borrowing, while the first two sets of statistics cover a much wider spectrum of banking activities.

#### 1. Quarterly territorial statistics

##### 1.1 Overall coverage

The quarterly territorial statistics are the oldest set of BIS statistics. They provide data on the international assets and liabilities of banks in twenty-four major industrialised countries or offshore centres, with the organising principle being the location of the reporting banking institution, not its ownership. These statistics are therefore consistent with balance-of-payments accounting practices. For example, the international assets and liabilities of Japanese banks in London are reported to the Bank of England and are aggregated with those of other reporting institutions operating in the United Kingdom. Hence the data can be used to address questions related to the role of the international banking system as a whole, or of the banking systems of individual reporting countries, in the provision of balance-of-payments and structural financing, and to the international banking transactions accompanying exchange rate movements. They can also be used to analyse the role of the international banking system in the process of global and national credit and money creation.

In addition, an extended four-way disaggregation of the data - by country, currency, sector and nationality of reporting institutions (though without breakdowns by country of residence of counterparties or by individual currency in the latter instance) - makes it possible to use them for a number of other purposes. These include measuring the scale of international interbank transactions, the role of individual currencies in international banking and the magnitude of individual countries' external banking debt. Moreover, although the data are reported on a stock basis (with non-dollar

positions converted into US dollars at the exchange rate prevailing at the reporting date), the currency detail allows the BIS to estimate valuation-adjusted changes as proxies for true flow data. Aggregates and most breakdowns of the quarterly territorial banking statistics are available from end-1977.

International banking activity encompasses all financial claims and liabilities other than those in domestic currency and involving only residents on both the deposit and lending sides. The currency/residence-of-counterparty criteria used to separate international banking transactions from domestic ones permit a further distinction between the various broad categories of international banking activity, as illustrated in the following diagram.

#### **Banks' assets and liabilities**

|                      | Vis-à-vis residents | Vis-à-vis non-residents |
|----------------------|---------------------|-------------------------|
| In domestic currency | A                   | B                       |
| In foreign currency  | C                   | D                       |

- A = domestic positions
- B = traditional foreign positions
- C + D = Euro-currency positions
- B + D = external or cross-border positions
- B + C + D = international positions

Traditional foreign banking business refers to business carried out with non-residents in the domestic currency of the country in which the bank is located (B). It is called "traditional" because of the historical role of banks as providers of domestic currency facilities for the financing of trade, which involved keeping corresponding balances with foreign banks.

Euro-currency banking activities cover those assets and liabilities denominated in foreign currencies (again from the point of view of the country in which the bank is located) conducted with both residents and non-residents. It should be stressed, however, that the Euro-currency definition is no longer used by the BIS as an analytical concept. The setting-up of offshore facilities in the United States and Japan, whose exemption from most domestic regulations makes their operations akin to Euro-currency business, and, more generally, the growing intertwining of domestic and foreign currency business, have considerably reduced the importance of the distinction between these two segments. Instead, increasing use has been made of the "international bank credit" concept, which covers business in both domestic and foreign currencies with non-residents and business in foreign (non-local) currencies with residents. Unless otherwise stated, the description given below applies to this enlarged concept.

Finally, external or cross-border bank business covers both domestic and foreign currency positions with non-residents. This information is used mainly for the following two purposes: statistically, to improve the recording of balance-of-payments transactions; and analytically, to gauge the extent of banks' involvement in balance-of-payments financing.

## 1.2 Reporting area and institutions

The reporting area for the quarterly international banking statistics includes those countries and centres which generally meet the following two criteria:

- the banking system conducts a large volume of international lending and borrowing or deposit-taking; and,
- the corresponding statistics are sufficiently comprehensive and detailed to be aggregated in a consistent form with those of other reporting countries (see Section 1.4 below).

The reporting area has grown over time and now comprises eighteen industrialised countries and six offshore centres.

### The BIS quarterly territorial statistics: list of reporting countries and centres

| Industrialised reporting countries |                          |
|------------------------------------|--------------------------|
| 1. Austria                         | 10. Japan                |
| 2. Belgium                         | 11. Luxembourg           |
| 3. Canada                          | 12. Netherlands          |
| 4. Denmark                         | 13. Norway               |
| 5. Finland                         | 14. Spain                |
| 6. France                          | 15. Sweden               |
| 7. Germany                         | 16. Switzerland          |
| 8. Ireland                         | 17. United Kingdom       |
| 9. Italy                           | 18. United States        |
| Other banking centres              |                          |
| 19. Bahamas                        | 22. Hong Kong            |
| 20. Bahrain                        | 23. Netherlands Antilles |
| 21. Cayman Islands                 | 24. Singapore            |

The reporting institutions are principally deposit-taking banks and similar financial institutions. In some countries, specialised non-deposit-taking, trade-related financial institutions also report. More rarely, the coverage extends to the international operations of such entities as a central bank office, or, for certain items only, the banking department of a central bank.

Most industrialised reporting countries collect data from all, or almost all, deposit-taking institutions located within their boundaries which have international assets and liabilities of any size. The reporting includes in the case of the United States and Japan separate information on the International Banking Facilities and the Japan Offshore Market respectively. As far as the other reporting centres are concerned, two of these (Bahrain and Singapore) include in their data only those institutions, or departments of institutions, that are exclusively engaged in offshore business. In the case of Bahrain these are the so-called "Offshore Banking Units" (OBUs), while for Singapore they are the "Asian Currency Units" (ACUs) of the commercial banks and merchant banks operating in the country.

For the great majority of the twenty-four countries, the reporting banks account for well over 90%, and in some cases for virtually 100%, of the international assets and liabilities of all banking institutions operating within their borders.



### 1.3 Reported assets and liabilities

The statistical data on reporting institutions' international assets and liabilities include, as a minimum on the assets side, deposits and balances placed with non-resident banks, including banks' own related offices, and loans and advances to foreign bank and non-bank customers. Similarly, it includes on the liabilities side deposits and loans from non-resident banks, including banks' own related offices, and from non-resident non-banks. The coverage of local foreign currency assets for these various sub-items differs, however, in that it excludes positions between related banking offices.

The treatment of the other principal categories of international banking activity is less uniform:

- *trade-related credit* is included by almost all reporting countries, with the country of residence of the drawee of the trade bill generally being the guiding principle for the geographical allocation of the claims arising from suppliers' credits;
- *holdings and banks' own issues of international securities* (bonds and notes, as well as in many cases short-term instruments and equities) are, with the major exception of the United States, included in the reporting banks' international assets and liabilities respectively;
- *participations*, i.e. permanent holdings of financial interests in other undertakings, are in the majority of cases included in the reporting banks' international assets and liabilities;
- *arrears of interest and principal* that have not been written down are in most instances included in the reported claims, with specific provisioning normally not resulting in a reduction of outstanding claims;
- *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 created as on-balance-sheet business and therefore included in the reported figures.

It should be stressed, finally, that valuation practices differ widely across countries. While deposits and conventional loans are generally reported at face value, other assets and liabilities 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

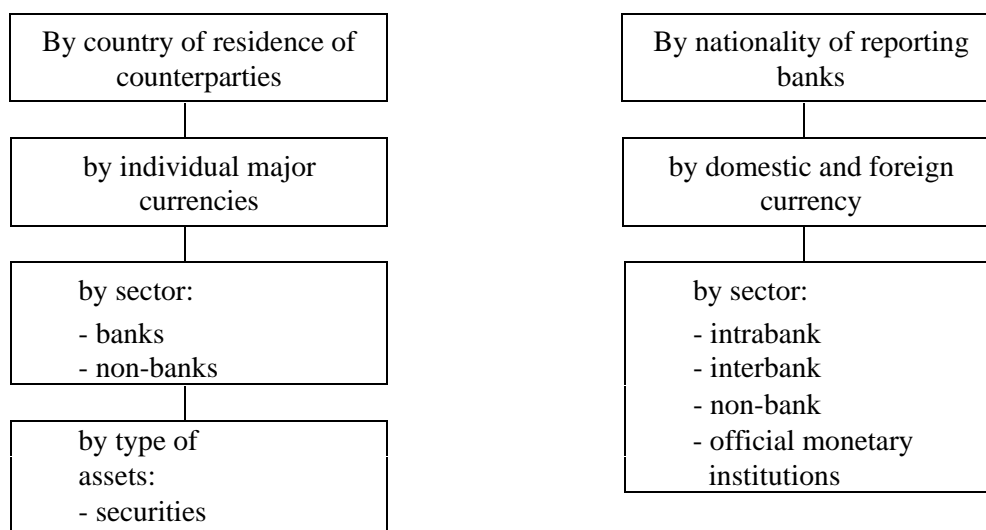
The territorial statistics are broken down by two broad classifications: one is by country of residence of counterparties (geographical disaggregation), and the other is by nationality of ownership (country of origin) of the reporting institutions. In each case, information is provided with a currency breakdown: this is fairly comprehensive for the data by geographical area<sup>3</sup> but is still limited to domestic/foreign currency for most reporting countries in the nationality data.<sup>4</sup> As will be seen later, a detailed currency breakdown is essential for deriving the flow data proxies.

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<sup>3</sup> In addition to the separate reporting of cross-border domestic currency positions, positions in BEF, CHF, DEM, FRF, GBP, ITL, JPY, NLG, USD and ECU are requested separately.

<sup>4</sup> However, the majority of the industrialised countries may be in a position to extend the currency breakdown of the nationality data to include DEM, JPY and USD in the course of 1995.

**Disaggregation of banks' international assets and liabilities  
as reported to the BIS by individual reporting countries  
(territorial statistics)**



Two additional breakdowns - by sector of counterparties and (for the breakdown by country of residence of counterparties) by type of assets - are available. In the disaggregation by country of residence of counterparties, the sectoral breakdown is limited to a bank/non-bank split,<sup>5</sup> while in the disaggregation by nationality of reporting banks, a distinction is made between reported positions vis-à-vis offices of the same banking group, other interbank accounts, the non-bank sector, official monetary institutions and, on the liabilities side, reporting banks' own issues of securities.

As for the type of assets being reported under the geographical breakdown, separate data on international holdings of securities are reported by all industrialised countries except the United States, which does not include such holdings in its reporting of total international assets, and Canada. The currency and sectoral detail provided for securities holdings is often less complete than for total assets. On the liabilities side, reporting banks' own issues of securities are reported as a separate unallocated item owing to the lack of identification of the ultimate holders of such securities.

### **1.5 Exchange rate adjusted changes in amounts outstanding**

All international banking data are reported to the BIS in US dollar terms, with the reporting banks' positions in non-dollar currencies being converted into dollars either by the reporting banks themselves or by their central monetary authorities at the exchange rates prevailing at the end of the quarterly reporting period.

Fluctuations in exchange rates cause changes in the current US dollar values of non-dollar positions. As a result, a comparison between data for two reporting dates will not indicate the magnitude of actual flows of funds between the two dates. In order to eliminate exchange rate valuation effects, the BIS calculates exchange rate adjusted changes in the amounts outstanding. These valuation-adjusted changes are not a full substitute for outright flow data (because a large part of actual flows will most likely have taken place within the quarter when exchange rates were different from their end-quarter levels), but they do eliminate one potentially serious obstacle to estimating flows from intertemporal comparisons of stocks, namely the impact of exchange rate changes on stocks outstanding.

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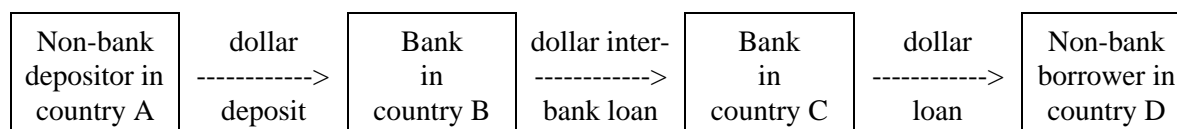
<sup>5</sup> In practice, positions vis-à-vis the non-bank sector of an individual customer country are shown as an "of which" item, meaning that positions vis-à-vis banks are obtained by difference and therefore include positions vis-à-vis other entities such as official monetary institutions.

A number of methods exist for making valuation adjustments and no single method is unambiguously correct. The method employed by the BIS is intended to provide a snapshot view of amounts outstanding on a given reporting date (T1) and changes from the previous reporting date (T0). The non-dollar positions at T0 are recalculated at the dollar exchange rates prevailing at T1, and the difference between the amounts at T1 and the recalculated amounts at T0 is taken to be the exchange rate adjusted change.

All changes are computed from quarter-to-quarter changes at end-of-quarter exchange rates even if a period of several quarters or years is being considered. In other words, first-quarter changes are valued at end-March exchange rates, second-quarter flows at end-June exchange rates, and so on.

## 1.6 Net international bank credit

The gross international banking aggregates greatly exaggerate the actual amount of credit intermediated between ultimate suppliers and ultimate users of funds. This is due to the fact that on their way from the original non-bank depositor to the ultimate non-bank borrower, funds are more often than not traded in the interbank market. As a result, the same credit flow will be recorded several times in the figures reported to the BIS. To take an example, consider a non-bank entity in country A placing dollars in a bank located in country B (not the United States), which lends these to a bank in country C (also not the United States), which then uses the funds to make a loan to a non-bank borrower in country D. This set of transactions would be counted twice in the external claims reported to the BIS, once as an interbank claim (bank B on bank C) and once as a claim on a non-bank customer (bank C on D), despite the fact that there is only one credit flow. A similar double-counting would take place on the liabilities side.



On the other hand, counting only international claims on the non-bank sector would underestimate the actual amount of credit intermediated by the market (a mere 30% of the reported assets are identified as claims on non-banks) because in many instances cross-border funds are channelled by borrowing banks from the international market to their own domestic economy via loans in local currency. To take the same example as given in the diagram above, but assuming countries C and D are one and the same, namely the United States, only the interbank claim of B on C (and the liability of B to A) would be recorded on a strict definition of what is "international". The final counterpart (C on D) is US domestic credit (in domestic currency), and, if nothing else were done, would fall outside the scope of the international bank credit measure, where in fact it belongs.

One could also imagine that C and D again represent one country, now the United Kingdom instead of the United States, and that the loan from C to D is denominated in sterling. Implicit in this scenario is the conversion into sterling by C of the dollar interbank loan received from B on the foreign exchange market. Here again, the only relevant claim measured directly is that of B on C, while the sterling loan from C to D is treated as UK domestic lending. Nevertheless the sterling loan has an international counterpart and should therefore be included in net international bank credit measured by proxy using the dollar claim of B on C.

Whereas the problem raised in the two preceding examples is in principle the same whether C is a BIS reporting bank or not, only when it is a reporting bank is it possible to estimate the net volume of funds onlent by banks to the local economy. In providing both their external domestic currency positions and their total (cross-border plus local) foreign currency positions, banks in reporting countries allow the BIS to estimate, on an assets minus liabilities basis for individual national banking systems, the net amounts absorbed from, or supplied to, the international market by

the domestic economies of reporting countries, either in domestic currency (through changes in net external domestic currency positions) or in foreign currency (before conversion of such funds into national currency).

On the other hand, it can reasonably be assumed that, in borrowing from reporting banks, banks in non-reporting countries act primarily as a link between the international banking market and final customers, either in their own national economy or within their region. Only if they were to redeposit the funds with banks in the reporting area would there be double-counting. It is, however, assumed that banks outside the reporting area find funding costs in the international banking market high in relation to the rate of return they could earn by redepositing the same funds with reporting banks, and that the amount of double-counting resulting from this kind of market-making and arbitrage activity is correspondingly small.

### Net international bank credit

| Sources of funds   | Uses of funds   |
|--|---|
| Liabilities to outside-area banks and non-banks  | Claims on outside-area banks and non-banks  |
| Liabilities to inside-area non-banks:<br>- non-residents in all currencies<br>- residents in foreign currencies  | Claims on inside-area non-banks:<br>- non-residents in all currencies<br>- residents in foreign currencies  |
| "International" liabilities to resident non-banks:<br>- measured by net foreign currency lending of individual reporting banking systems, plus<br>- measured by net external domestic currency lending of individual reporting banking systems | "International" claims on resident non-banks:<br>- measured by net foreign currency borrowing of individual reporting banking systems, plus<br>- measured by net external domestic currency borrowing of individual reporting banking systems |
| Other + unallocated  |   |

The table above summarises the make-up of the BIS estimate of net international bank credit. It also illustrates the fact that the estimate can be made on both the uses and sources sides of the international banking market. Equality between the two sides is guaranteed by allocating the net international positions of individual countries' banking systems either to the sources side (if a net asset position) or to the uses side (if a net liability position). This procedure is applied separately to cross-border domestic currency positions and foreign currency positions, and has the effect of reducing the underestimation of the true flows intermediated through the market between ultimate lenders and borrowers.<sup>6</sup> In practice, however, differences between the estimates from the two sides do arise from: (i) the inclusion of monetary authorities under the *interbank* heading on the sources (deposit) side of the market, whereas the proceeds are properly allocated on the uses side; (ii) the importance of unallocated liabilities, reflecting in the main securities issued by reporting banks which cannot be allocated either geographically or according to the bank/non-bank ultimate holders of the

<sup>6</sup> To be exhaustive, the estimate should consider individual banks and separate their sources and uses of international funds. For practical purposes, the lowest level of disaggregation available is for individual banking systems in their foreign and domestic currency business, which therefore limits accordingly the estimation of the actual funds intermediated by the market.

paper whereas, again, the proceeds are correctly allocated on the uses side;<sup>7</sup> and (iii) statistical reporting discrepancies. As a result, it has been the practice to rely primarily on the uses side estimates, which seem to be less affected by these distortions.

## 2. Semi-annual statistics on worldwide consolidated claims on selected countries

### 2.1 Overall coverage

While the quarterly statistics aim essentially at estimating the overall volume of international banking activity (as defined), the semi-annual consolidated statistics are an attempt to measure the international bank indebtedness of a selected group of countries (mainly in the developing world and eastern Europe) and the counterpart exposure of national banking systems to these countries.

By far the main difference between the two data sets stems from the worldwide consolidation principle which is partially applied in the semi-annual exercise. In addition, there are different guiding principles in terms of the reporting area and reporting institutions. Furthermore, although the coverage of reported claims on individual customer countries is fairly comprehensive, both the extent of the coverage and the available breakdowns differ considerably from those reported under the territorial statistics. In particular, the lack of a currency breakdown limits considerably the possibility of estimating exchange rate adjusted changes in amounts outstanding as proxies for flow data. (The latter were not, however, the main reason for collecting these statistics.)

Whereas the quarterly statistics cover positions vis-à-vis all countries, including those vis-à-vis other reporting countries, the coverage of the semi-annual statistics is limited to claims on individual countries which are not part of the reporting area. At the same time, the concept of the "reporting area" for the purpose of the consolidated statistics differs in two important respects from that of the territorial statistics. Firstly, the semi-annual reporting area is limited to the eighteen industrialised reporting countries and therefore excludes the offshore centres as direct reporters. Secondly, and more importantly, the worldwide consolidation of individual banks' balance-sheet positions means that in practice the activities of a great number of banking offices located outside the principal reporting area are also covered. This implies that the corpus of reporting institutions extends well beyond the geographical boundaries of the reporting area and includes, inter alia, the offshore affiliates of banks whose head offices are in the reporting countries. The use of the expression "reporting area" in the semi-annual statistical reporting system is therefore a convenience to indicate the countries in which banks submit data rather than the actual area covered.

More concretely, the reporting institutions may be grouped into two categories. On the one hand are banks with head offices in the eighteen countries constituting the reporting area. These *domestically owned banks* of individual reporting countries provide data on worldwide consolidated international claims, including the claims of their foreign affiliates but, in order to avoid counting the same funds twice, excluding the claims between offices of the same banking group. By analogy with the quarterly statistics, such "international" claims on an individual country cover both the cross-border positions (i.e. loans extended from offices located outside that country) and the domestic

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<sup>7</sup> For example, when the Bank of Japan places dollar funds with Japanese banks and those funds are used for investment in US Treasury bills, the latter are included on the uses side of the market (as reporting banks' lending to US non-bank residents), while the original deposits by the Bank of Japan are indistinguishable from other interbank liabilities within the reporting area. A similar asymmetry arises when the funds are indirectly channelled to US non-bank customers through, say, US banks' borrowing from Japanese banks.

foreign currency claims (from the point of view of the host country) of local affiliates. However, they exclude local claims in local currency, although these are shown as memorandum items, together with local liabilities in local currencies.<sup>8</sup>

### **Semi-annual country exposure coverage of individual reporting countries**

Domestically owned banks: worldwide consolidated international claims on residents of country X

Domestic affiliates of foreign-owned banks:

- from another reporting country: not reported (as already reported by home country)
- from a non-reporting country: all cross-border claims of domestic affiliates reported

On the other hand, offices within the reporting area of banks whose head offices or parent institutions are outside this area, or whose nationality cannot be identified, report on a territorial basis (i.e. to their host country's authorities). This means in practice that, in addition to reporting consolidated data on their own national banking establishments, the central banks of the eighteen industrialised countries participating in the exercise provide the BIS with the cross-border claims of such offices on a non-consolidated basis (including any positions they may have vis-à-vis their own affiliates in outside-area countries) in the same way as under the quarterly territorial statistics. The purpose of this additional reporting requirement is to reduce the statistical gap which would otherwise arise were such foreign-owned banks to be excluded altogether from the reporting.

The aggregate data, and all available breakdowns, comprising the worldwide consolidated banking statistics form continuous time series going back to end-1983.

## **2.2 Disaggregation**

In addition to the full geographical breakdown of claims, there are three major types of disaggregation in the statistics collected under the semi-annual reporting system. The first one is of course the nationality of reporting banks. Until recently confidentiality considerations prevented the publication of such a breakdown of claims, but since July 1994 an almost complete nationality breakdown has been made available.

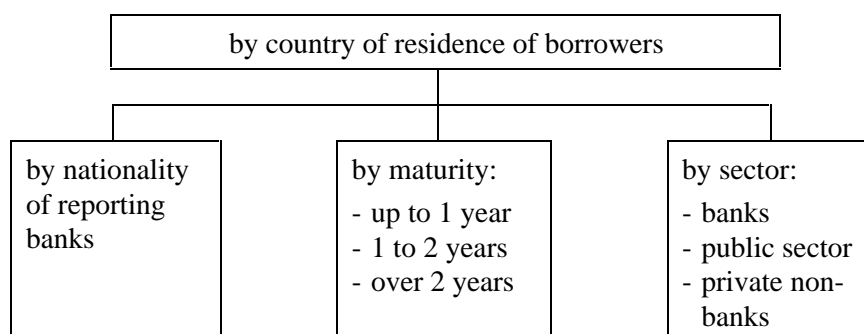
The second type of disaggregation is the maturity distribution of claims on individual borrowing countries, based on residual maturities. Three bands are distinguished: (i) up to and including one year; (ii) over one year and up to and including two years; and (iii) over two years. Claims that cannot be classified are shown separately in an unallocated item. 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.

The third type of disaggregation is the sectoral distribution of claims which distinguishes: (i) claims on the banking sector; (ii) claims on the public sector; and (iii) claims on the non-bank private sector. A residual category is used for claims which cannot be allocated to a particular sector. Claims on official monetary institutions are generally included under the banking sector, except in three major instances (Japan, the United Kingdom and the United States), where they are included under the public sector. Similarly, whereas the majority of reporting countries treat claims on non-bank publicly owned enterprises as claims on the non-bank private sector, the three countries mentioned above (and a few additional centres) treat them as claims on the public sector.

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<sup>8</sup> The reason for requesting such information is that where such affiliates have net asset positions in local currency vis-à-vis local residents (for example, in Brazilian real in Brazil) these must be funded either locally in foreign currency or from abroad and therefore represent additional international bank lending.

### Disaggregation of banks' international claims



Most reporting banks also provide separate information on international claims on foreign (i.e. non-local) banks located in individual debtor countries. The reason for reporting this item is to provide a basis for eliminating the double-counting which arises when a bank reports its claims on the local affiliate of another reporting bank. In practice, however, it has not been possible to introduce a reporting system in which positions only vis-à-vis other *reporting* banks are singled out for separate reporting. As a second-best solution, banks are requested to identify separately positions vis-à-vis the local establishments of all non-local banks, and the assumption is made that the great majority of such claims are vis-à-vis other reporting institutions.

In addition to the above-mentioned breakdowns of international claims, reporting banks are requested to provide information on their local assets and liabilities denominated in local currency in order to permit the calculation of local credit which is financed from abroad and which therefore represents international bank lending (see also 1.6 above). Finally, banks also report their undisbursed international credit commitments (including backup facilities) to individual debtor countries.

### 2.3 Exchange rate adjusted changes in amounts outstanding

In contrast to the quarterly territorial statistics, no currency breakdown is available within the framework of the worldwide consolidated reporting system. In principle, this makes it impossible to estimate exchange rate adjusted changes both in the overall claims on individual borrowing countries and in the various components of such claims. In order to compensate in part for this lack of currency detail, information from the quarterly statistics is used to provide some rough estimates of exchange rate adjusted changes. However, the estimate is limited to overall claims, since no reasonable working assumption can be made as regards the currency distribution by maturity band or by sector.

### 2.4 Comparison between the quarterly and semi-annual statistics

One reason why it seems valid to use the currency breakdown provided under the territorial statistics to estimate roughly the exchange rate adjusted changes in the overall claims on individual debtor countries is that, despite their fundamentally different nature, the two statistical systems provide figures of similar magnitude (albeit to varying degrees across debtor countries and with some major exceptions, as explained below).

This comparability between the two series stems from the fact that, while the reporting area for the semi-annual data is in some respects smaller than that for the quarterly statistics, in other respects it is broader. It is smaller in that it excludes banks operating in the offshore centres whose head offices are not in the industrialised reporting countries. The omission may be particularly important for Latin American banks operating in the Caribbean centres and for Asian banks (other than Japanese banks) operating in the Asian offshore centres.

On the other hand, the coverage of the semi-annual data is broader than that of the quarterly statistics in two important respects. Firstly, in the case of banks with head offices in the reporting area it extends to the activities of their affiliates wherever they are located - including those outside the reporting area. Secondly, the figures include not only the cross-border claims of such affiliates but also their local lending in non-local currencies.

However, certain discrepancies have emerged more recently in the case of countries which have rescheduled their debt to commercial banks, and where such rescheduling included the conversion of loans into bonds. Although most reporting banks include their bond holdings in both the quarterly and semi-annual statistics, the US statistics exclude such holdings under the quarterly reporting system but include them under the semi-annual reporting system. In view of the size of US banks' exposure to Latin America, this is likely to have been an important cause of some rather large discrepancies between the two sets of statistics recently.

### **3. Announced syndicated credit facilities**

Mention should be made, finally, of the third type of international banking statistics stored in the BIS international banking database, namely those pertaining to international syndicated credit facilities. Data on individual facilities are collected by the Bank of England from various market sources and provided to the BIS, which aggregates them by nationality of borrowers on a quarterly basis. Other types of information (on the maturities and spreads of the facilities, the type of borrower, the currency of the facility, etc.) are stored separately and can be aggregated on an ad hoc basis.

While the syndicated loans data provide a more up-to-date picture of borrowing and lending conditions in one major segment of the international banking market, the series are not fully comparable with the main BIS international banking statistics. Firstly, facilities may be used as a backup for other types of fund-raising activity and may therefore remain undrawn or only partially used. Secondly, even when the facilities are used by borrowers, there may be a considerable delay in actual drawings. Thirdly, in some instances the funds are used to replace past banking debt, without therefore any increase in total banking indebtedness for the borrower. Finally, syndicated loans are but one of the various forms of international bank lending. In particular, no account is taken of short-term interbank and trade credit and bilateral loans, which are often predominant in countries' relations with the international banking system.

The aggregate data with all breakdowns are available from the first quarter of 1972.



### III.

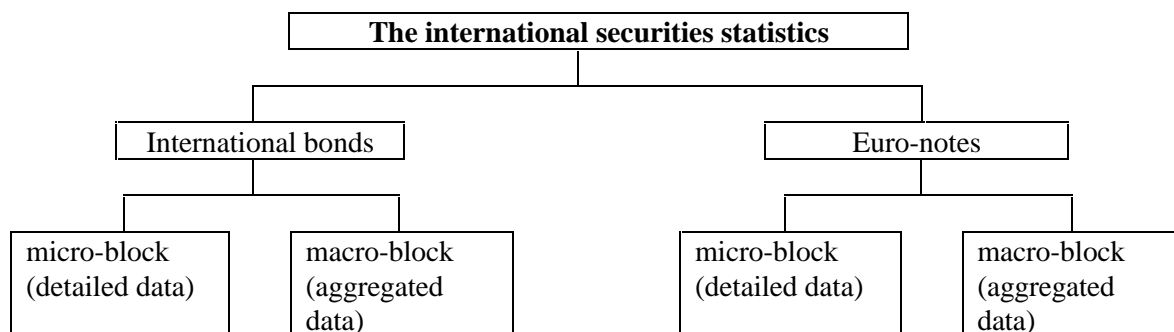
#### International securities statistics

The BIS data on international securities are compiled primarily to complement the quarterly international banking statistics as a means of providing a more comprehensive monitoring of international financial activity. Analytical emphasis is placed on the stocks of securities outstanding, as well as on changes in them, broken down as far as possible according to the same criteria as the banking statistics, except for the fact that only the borrowing side is covered (no detailed information being available on the actual ownership of these securities). The statistics are made up of two separate sets of data. The first covers international bond issues, while the second covers Euro-note programmes and actual drawings under such programmes.

##### 1. Sources and structure of the statistics

The similarities between the BIS international banking and international securities statistics conceal two entirely different reporting systems. Within the framework of the international banking reporting system, individual banks report to their own central banks their total international assets and liabilities broken down according to the various disaggregation requirements, without distinguishing individual transactions, and the central banks transmit to the BIS the aggregated returns of individual reporting banks. The international securities statistics, by contrast, are composed of detailed data on individual securities issues, which are derived from various sources and are aggregated by the BIS according to certain standard criteria.

The two sets of securities statistics (on international bonds and Euro-notes) each consist of two different blocks. The first or micro-block contains detailed data on individual securities (for bonds) or facilities and drawings (for Euro-notes). In addition to the amount of funds raised and the dates of announcement and completion of deals, information is available on the type of issuer, type of issue, country of residence and nationality of issuer and, for bonds primarily, the terms (interest rates, spread, maturity, etc.) and conditions (call provisions, conversion clauses, etc.) of individual issues. The information contained in this first block is taken from various sources, including the Bank of England for new deals or facilities arranged, and market sources for stocks of international bonds and Euro-notes outstanding.



The second or macro-block is derived by aggregating the information contained in the first block, according to certain standard criteria such as currency and type of issue and residence and broad type of issuer. The data are updated every quarter, or more frequently if necessary, to take account of new issues and repayments. In addition, computer programmes have been developed to read and aggregate individual issues according to non-standard criteria such as date, coupon size, term and detailed type of issue on an ad hoc basis. However, aggregate data with a standard breakdown by currency, type of issuer, type of issue and country of residence and nationality of issuers are the most widely used data.

## 2. The international bond statistics

### 2.1 Overall coverage

International bonds include both Euro-bonds (which cover all foreign currency issues by residents and non-residents in a given country) and foreign bonds (domestic currency issues by non-residents of a given country), with the exception of bonds which are part of debt rescheduling packages. Although this definition may differ from that adopted by other providers of similar statistics, it is consistent with that of the international banking statistics, and is applied to bonds as follows:

#### Bond issues

|                      | By residents | By non-residents |
|----------------------|--------------|------------------|
| In domestic currency | A            | B                |
| In foreign currency  | C            | D                |

A = domestic bonds

B = traditional foreign bonds

C + D = Euro-bonds

B + D = external or cross-border bonds

B + C + D = international bonds

The international bond statistics thus exclude all domestic currency bonds issued by residents on their own national market, whether purchased by residents or non-residents. They also exclude ECU-denominated bonds issued by residents of a given country which, although not denominated in the currency of the borrower, are explicitly targeted for domestic investors. Data on domestic currency bonds issued by residents as well as on domestic ECU-denominated bonds are, however, stored in separate databases.

At the end of 1994 there were 33,150 bond issues stored in the micro-block, each with full documentation. Of this total, more than 13,300 were still outstanding. The aggregate data are available with the main breakdowns on a quarterly basis from the fourth quarter of 1985 onwards.

### 2.2 Basic information

The aggregated international bond statistics comprise four types of basic information pertaining to individual quarters:

- (i) announcements of new bond issues, represented by the volume of new securities launched;
- (ii) completions of new bond issues, corresponding to the issuance of international bonds around the time the new financing becomes available. These data together with those on announcements are made available to the BIS by the Bank of England;
- (iii) net new bond issues, corresponding to the difference between completed issues and redemptions. Redemptions include both scheduled repayments and early redemptions of outstanding bonds. The figures are compiled from additional information made available by the Bank of England on completed individual new issues, and by the International Securities Market Association (ISMA) on early redemptions; and

- (iv) bonds outstanding at the end of each quarter, after allowing for redemptions, using information made available by ISMA and, for issues not included in ISMA data, by the Bank of England.

Data on amounts outstanding are given in current dollar terms, while announced and completed new issues in non-dollar currencies are both converted into dollar amounts at the exchange rate prevailing at the time of announcement. The difference between changes in the stocks of bonds outstanding valued at current exchange rates and net new issues is accounted for by valuation effects resulting from exchange rate movements.

The four types of information - announcements, completions, net new issues and amounts outstanding - serve different analytical purposes. Announcements provide an up-to-date picture of the state and psychology of the market at any given point in time. The data can be most clearly related to changes in underlying economic developments, such as interest rate and exchange rate movements. The figures for completions 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 by groups of borrowers or in total, while the data on amounts outstanding provide an indication of the indebtedness of groups of borrowers or total indebtedness.

### **2.3 Disaggregation**

For the four types of basic information, five standard breakdowns are available in the international bonds data: the currency of issue, the type of issuer, the type of issue and the country of residence and nationality of issuers.

#### **(i) *Currency of issue***

The currency detail is virtually complete. For certain currencies, such as the US dollar, the Japanese yen and the pound sterling, a further split between Euro and foreign issues is provided. For all currencies a further breakdown by type of issue is available. In the case of the ECU, separate additional information is provided on the type of issuer as well as on the country of residence and the nationality of issuers.

#### **(ii) *Type of issuer***

The following breakdown by type of issuer is provided: commercial banks, other financial institutions, governments, state agencies, corporate entities and international institutions. In addition, further breakdowns are available by type of issue and country of residence and nationality of issuers.

#### **(iii) *Type of issue***

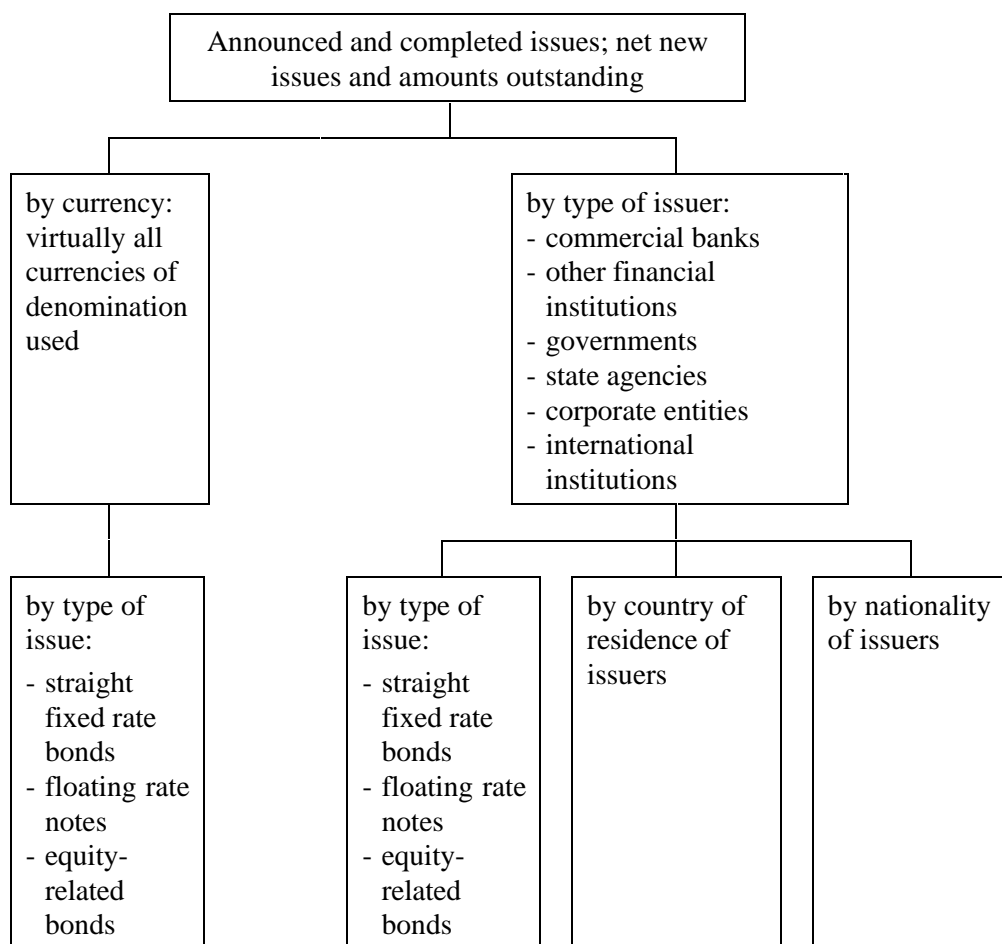
A distinction is made between straight fixed rate issues (which are bonds bearing a fixed rate coupon and which have no equity or conversion element), floating rate notes (whose rate of interest varies during the life of the note according to short-term reference rates, and which have no equity or conversion element) and equity-related bonds (which carry an equity element in the form of a conversion clause or warrants to acquire shares).

#### **(iv) *Geographical classification of issuers***

A twofold geographical classification is applied. The first is by country of residence, which is consistent with the geographical breakdown provided in the BIS international banking statistics, which are classified according to the location of the borrower and not the ultimate credit risk (for example a claim on Volkswagen Brazil is considered as a claim on Brazil and not on Germany, irrespective of whether the loan is guaranteed by the head office of Volkswagen or not). This

classification is also consistent with balance-of-payments methodology. The second type of breakdown is by nationality of issuer, which identifies the borrower according to nationality or ultimate risk. This classification may be the most relevant criterion from the market viewpoint.

### The international bond statistics



## 3. The Euro-note statistics

### 3.1 Overall coverage

The description given above concerning the international bond statistics also applies in the main to the Euro-note statistics. However, there are two major differences between the two systems in addition to the fact that less detailed information is available on individual notes than on bonds. One difference is statistical and stems from the lack of adequate information on foreign notes (i.e. notes issued by non-residents in a domestic market in the currency of that market), which reduces the statistical coverage of notes to Euro-notes only. The other is conceptual and is directly linked to the notion of facilities (or programmes). In contrast to bond issues, for which announcement presages actual fund-raising activity (which usually takes place with a lag of a few weeks), the announcement of new Euro-note facilities refers to programmes that allow borrowers to raise funds over time using a variety of techniques, giving them the choice of varying/modifying the size, maturity and currency composition of securities issues over the duration of the facility under the umbrella of an initial commitment from a group of banks. The facilities can be limited to the issuance of paper at less than one year (short-term Euro-note facilities) or extend over the maturity spectrum, up to several years (Euro-medium-term notes or EMTNs). In EMTN programmes, drawings are usually at maturities of more than one year.

At the same time, the emergence of large EMTN offerings that are underwritten by international syndicates using Euro-market procedures, together with the increasing use of EMTN documentation in Euro-bond issues, means that the classificatory distinction between certain notes issued under EMTN programmes and Euro-bonds is somewhat arbitrary. The BIS has adopted the practice of including under EMTNs all Euro-bonds which are issued under an initial EMTN documentation, with the total figure for such bonds being shown as a memorandum item to international bond data (but deducted from all published international bond data). This memorandum item should allow reconciliation with other data sources, which include all Euro-bond issues in their international bond databases.

At the end of 1994, there were 2,500 facilities and more than 50,000 drawings stored in the micro-block of the Euro-note database. Of this total, more than 15,600 issues were still outstanding. The aggregate data for announced facilities are available from the second quarter of 1981 onwards, for amounts outstanding from the first quarter of 1986 onwards and for valuation-adjusted net issues from the fourth quarter of 1989 onwards.

### **3.2 Basic information**

The aggregated Euro-note statistics distinguish three types of basic information with a quarterly frequency:

- (i) announcements of new facilities, representing the maximum amounts available under newly established programmes. Facilities arranged without formal ceilings on drawings are excluded from the statistics;
- (ii) notes outstanding at the end of each quarter, expressed in current dollar terms, which are used in conjunction with the available currency breakdown; and
- (iii) net new issues or drawings net of repayments under existing facilities (as in the case of bonds, the difference between changes in stocks valued at current exchange rates and net new issues is accounted for by valuation effects resulting from exchange rate movements).

Individual data on announced facilities and amounts outstanding which are used to construct the macro-block are provided by the Bank of England and Euroclear, the clearing and settlement institution in Brussels which acts as a depository for a large number of Euro-notes. Information on facilities is given by the BIS primarily for the record, since the analytical emphasis is put on actual drawings. Together with bond issuance, data on net issues of Euro-notes permit more accurate measurement of the total volume of financing through the international securities markets than would the international bond data alone. They also give an indication of trends in the use of the various techniques available.

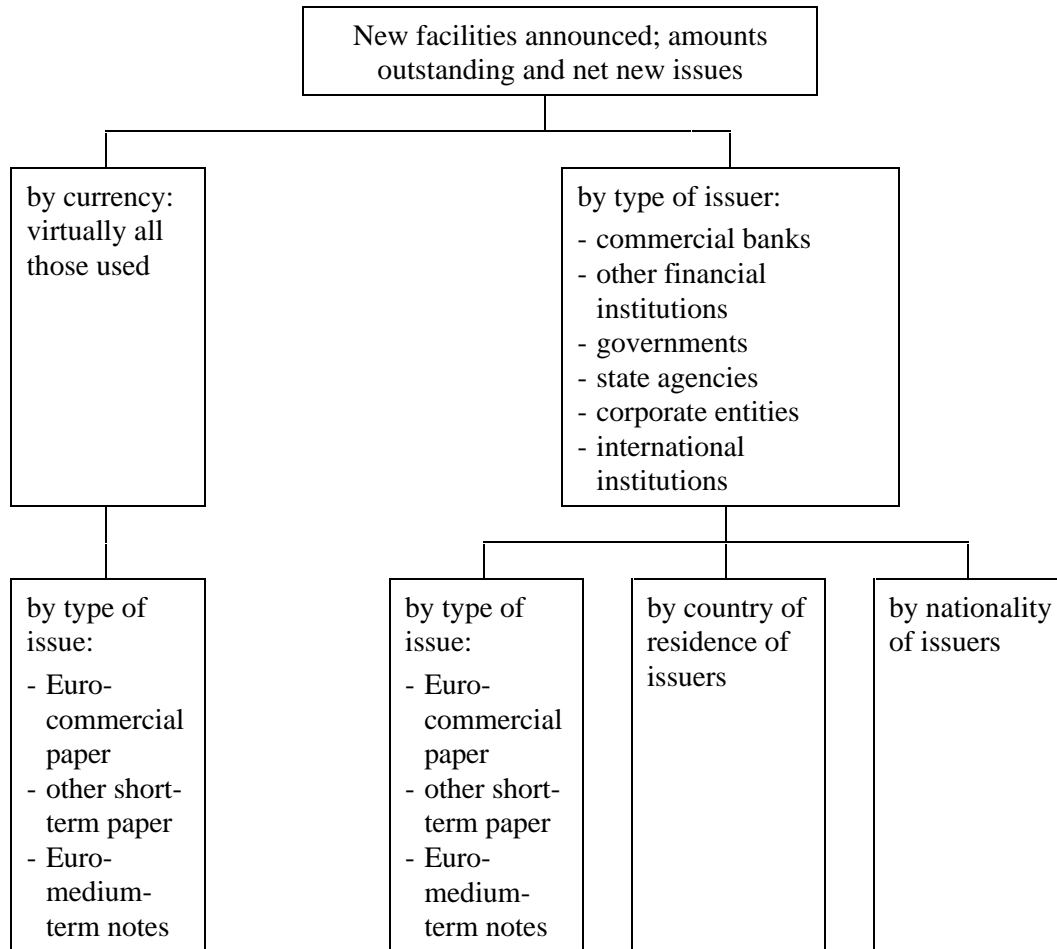
### **3.3 Disaggregation**

The five standard breakdowns of the Euro-note data - by currency, type of issuer, type of issue and country of residence and nationality of issuers - mirror those of the international bond database. In terms of types of issue, the main distinction made, however, is between short-term notes (Euro-commercial paper and "other short-term paper") and medium-term notes, although the option to issue short-term paper included in several medium-term note programmes is creating some overlap between the two market segments in terms of actual drawings.

In addition, the choice of the currency of drawing given to borrowers under multi-currency option programmes (an increasingly popular feature of EMTN facilities) means that the currency of denomination used in setting up a programme, generally the US dollar, may not provide an accurate guide to the currency denomination of the actual borrowing. In the case of

ECU-denominated Euro-notes, as with ECU-denominated international bonds, separate information is provided on the type of issue and type of issuer as well as on the country of residence and nationality of issuers, while for all other currencies a further breakdown is only available by type of issue.

### The Euro-note statistics



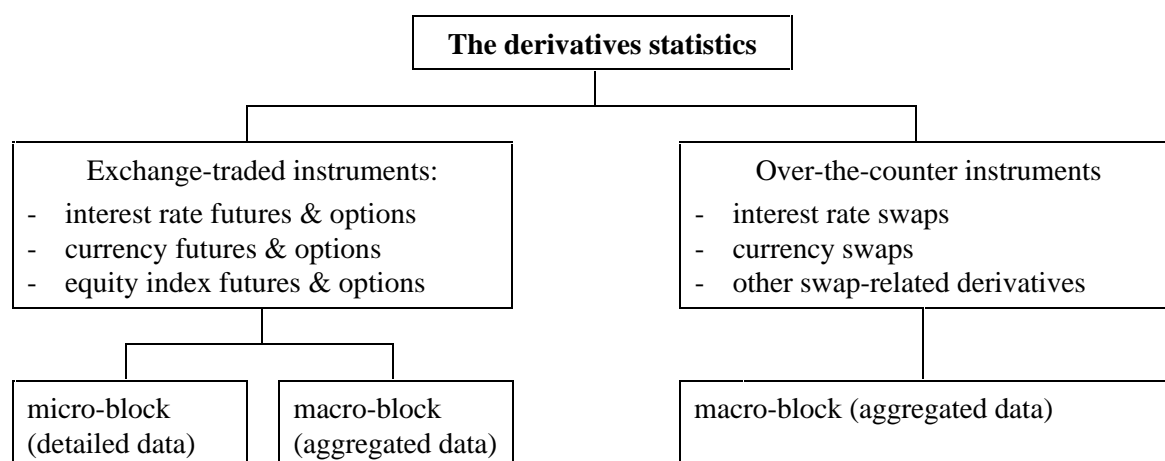
## IV.

### Derivatives and foreign exchange market statistics

Financial innovation has been one of the salient features of international financial market developments in recent years. Many of these innovations have taken the form of new financial instruments which do not appear on the balance sheets of banks and non-banks. Following the recommendations of a study group established by the Governors of the central banks of the Group of Ten countries in 1986, the BIS began to collect information from various sources on such off-balance-sheet derivatives activity in order to monitor developments in these markets. However, because of the lack of standard reporting procedures, reliance has so far had to be placed on information collected by organised exchanges (for exchange-traded instruments) and by market associations (for both exchange-traded and over-the-counter, or OTC, instruments). More recently, and following the G-10 central bank report on "Issues of measurement related to market size and macroprudential risks in derivatives markets" (February 1995), an initial survey of major bank and non-bank participants in derivatives markets was conducted in conjunction with the triennial Central Bank Survey of Foreign Exchange Market Activity in March/April 1995. The details as to how the results will be compiled and presented publicly have yet, at the time of writing, to be decided.

#### 1. Sources and structure of the derivatives statistics

As in the area of international securities (and in contrast to the international banking data), the BIS statistics on derivative instruments are composed of detailed data on individual contracts traded on exchanges (the micro-block) and aggregated data by type of instrument, type of contract, location of trade and, for interest rate contracts only, maturity (the macro-block). The information contained in the first block relates to exchange-traded instruments only and is obtained from the Futures Industry Association (FIA), the trade association of futures exchanges, as well as directly from exchanges (for non-FIA members). The FIA provides for each exchange and each individual instrument the number of contracts traded each month and the number of contracts outstanding at the end of each month, and this information is used by the BIS as the basis for calculating annual data on turnover and positions outstanding in notional amounts.



The macro-blocks consist of two separate sets of data on exchange-traded and OTC instruments. Information on exchange-traded instruments is derived by aggregating the information contained in the relevant micro-block. The data on OTC instruments are obtained directly from the International Swaps and Derivatives Association (ISDA), which is the only regular source of information on the volume of new and outstanding interest rate and currency swaps and other swap-related derivatives. ISDA has published information based on surveys conducted by Arthur Andersen since 1987; this comprises two separate reports on the notional principal value of swaps,

i.e. the underlying amounts on which swap payments are based. The first is prepared semi-annually and covers the volume of new swaps arranged by ISDA members during the first and second halves of each year. The second records the notional amounts of swaps outstanding at end-year. There is no regular data collection system for other OTC instruments, in particular forward rate agreements and forward foreign exchange transactions.

The degree of detail of the data in the macro-blocks is considerably lower than in the area of international securities and banking statistics owing to a shortage of adequate information, in particular on the residence of counterparties. It differs, moreover, as between the exchange-traded and OTC statistics in that the reporting frameworks are not wholly comparable, in contrast to those for international bonds and Euro-notes. Thus, while the availability of monthly data through the FIA allows in principle the development of quarterly and annual series for flows and stocks of exchange-traded instruments, the mixture of semi-annual and annual reporting by ISDA limits considerably the reporting frequency for swaps. As another example, ISDA reports provide a broad geographical breakdown of counterparties, but no such breakdown exists in the data provided for exchange-traded instruments.

## **2. Statistics on exchange-traded instruments**

### **2.1 Basic information**

There are two types of basic information included in the macro-block on exchange-traded derivatives:

- (i) monthly turnover in terms of the number of contracts, as reported by the FIA; and
- (ii) annual turnover in terms of both the number of contracts and the notional amount in dollars, as well as the notional amount of contracts outstanding (open positions) at year-end; while the turnover data on the number of contracts are directly derived from information available in the micro-block, notional amounts are calculated by the BIS itself, using information on the size of individual contracts and stock indices made available by individual exchanges and commercial data sources.

The annual data on exchange-traded instruments in notional amounts are available from 1986 onwards, the monthly data on the number of contracts from January 1992.

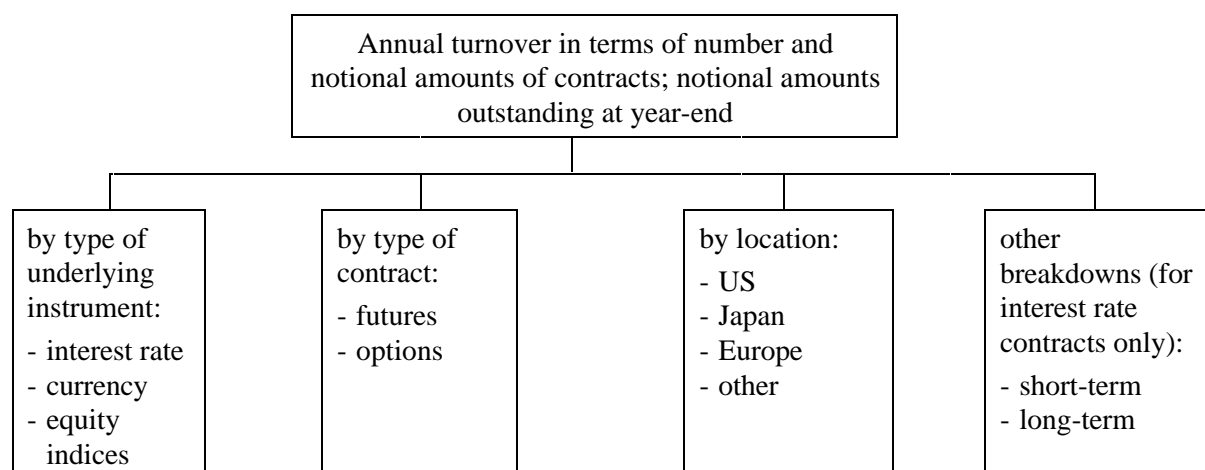
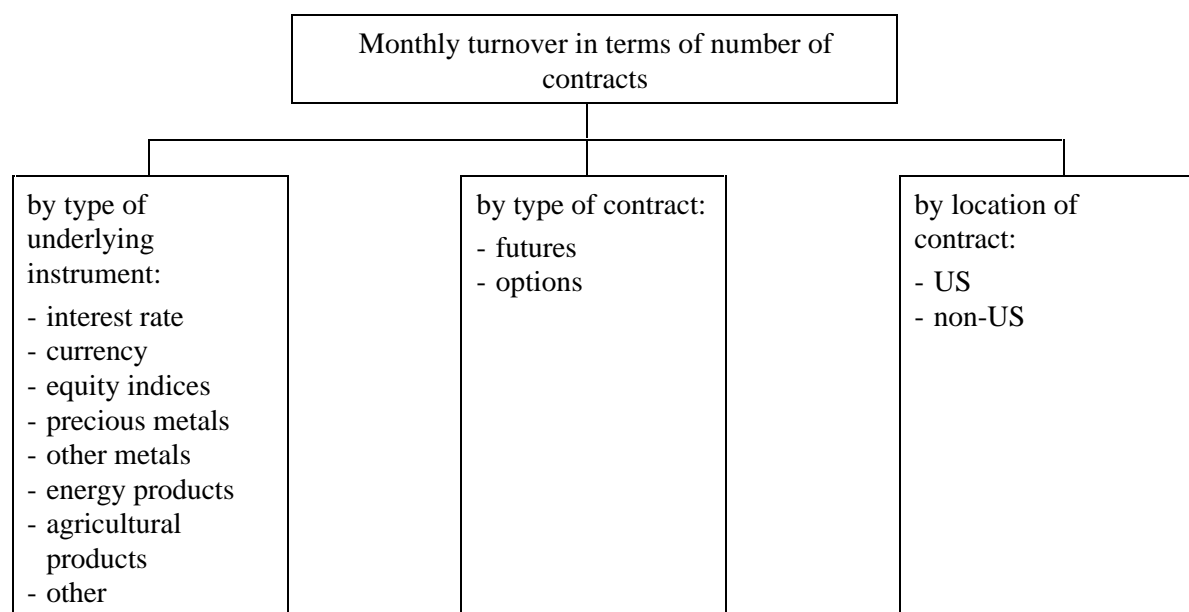
### **2.2 Disaggregation**

For the monthly and annual data, the following standard breakdowns are available:

- (i) type of instrument, limited to a distinction between interest rate, currency and equity indices for the annual data, but with a more detailed breakdown for the monthly data;
- (ii) type of contract, with a distinction between futures and options;
- (iii) location of trade, limited to a distinction between the United States and other markets for the monthly number of contracts, but with a more detailed geographical breakdown (United States, Japan, Europe and other) for the annual figures; and
- (iv) other breakdowns for the annual figures in the case of interest rate contracts (short and long-term contracts in individual currencies)



### The statistics on exchange-traded derivatives



## 3. Statistics on OTC instruments

### 3.1 Basic information

As already noted, regular reporting of OTC business is limited to swaps and is based on information provided by ISDA. There are two broad categories of swaps, namely interest rate and currency swaps, for which data on the volume of new transactions and outstanding positions are collected. Interest rate swaps are defined as transactions in which two counterparties exchange periodic interest rate streams in only one currency based on an underlying notional principal amount. Typically, one interest rate stream will be a fixed rate one while the other will be linked to a floating interest rate such as LIBOR. A currency swap is defined as a contract to exchange streams of interest payments and usually also principal amounts in two currencies at an agreed exchange rate. Information is also collected on certain swap-related transactions, such as caps, collars, floors and swaptions, but is available only in aggregated form, without the detailed breakdowns provided for interest rate and currency swaps.

The data on swaps are available from 1987 onwards.

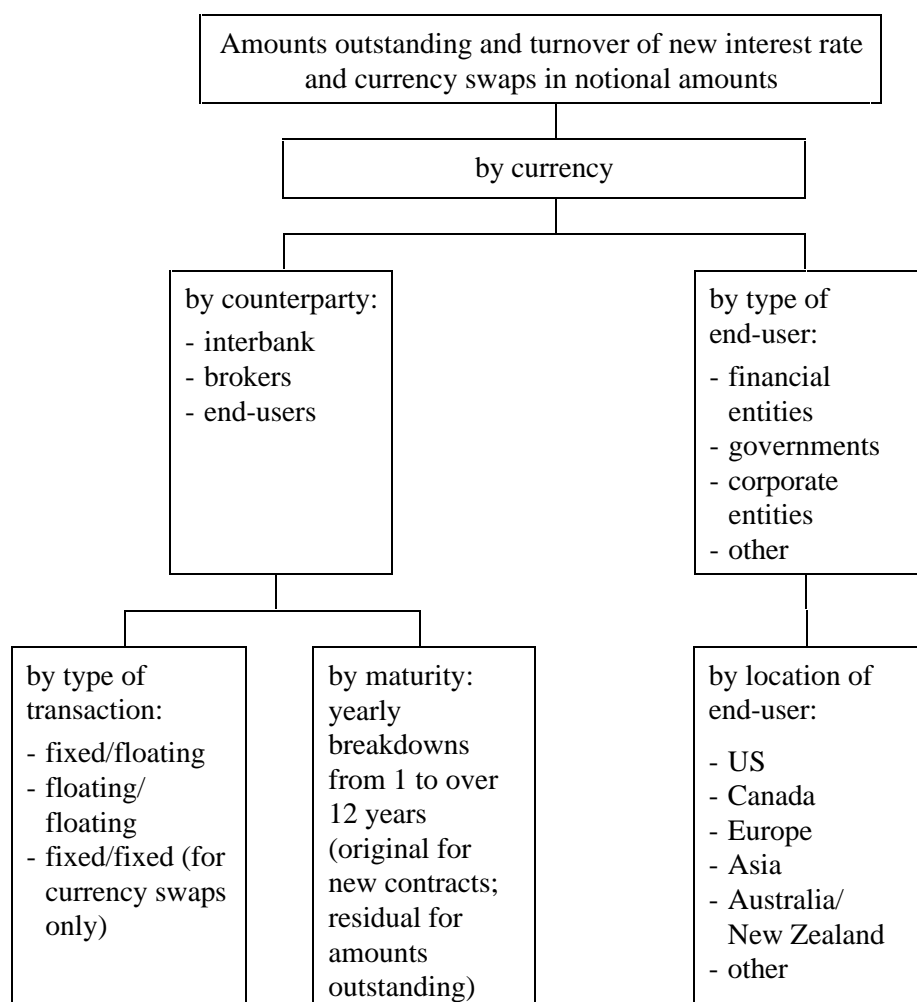
### 3.2 Disaggregation

The following breakdowns are available for the annual amounts of interest rate and currency swaps outstanding as well as for the semi-annual data on new swaps arranged:

- (i) by currency with a further breakdown by counterparty (interbank, brokers and end-users) and by type of end-user (financial entities, governments, corporate entities and other);
- (ii) by counterparty with a further breakdown by type of transaction (fixed/floating, floating/floating, fixed/fixed) and by maturity of contracts with annual bands from one to over twelve years (original maturity for new contracts; residual maturity for amounts outstanding); and
- (iii) by type of end-user with a further breakdown by location of end-user.

In providing such breakdowns, the BIS adjusts the original data provided by ISDA by eliminating the double-counting of currency swaps which are recorded twice under each separate currency.

#### The statistics on swaps



#### **4. Surveys of foreign exchange and derivatives market activity**

In April 1989 and again in April 1992 central banks and monetary authorities in twenty-one and twenty-six countries respectively conducted comprehensive surveys of the foreign exchange operations of dealers such as banks, brokers and other financial institutions active in this market and published national results. The results of these surveys were aggregated by the BIS and published as a global survey in February 1990 and March 1993 respectively.

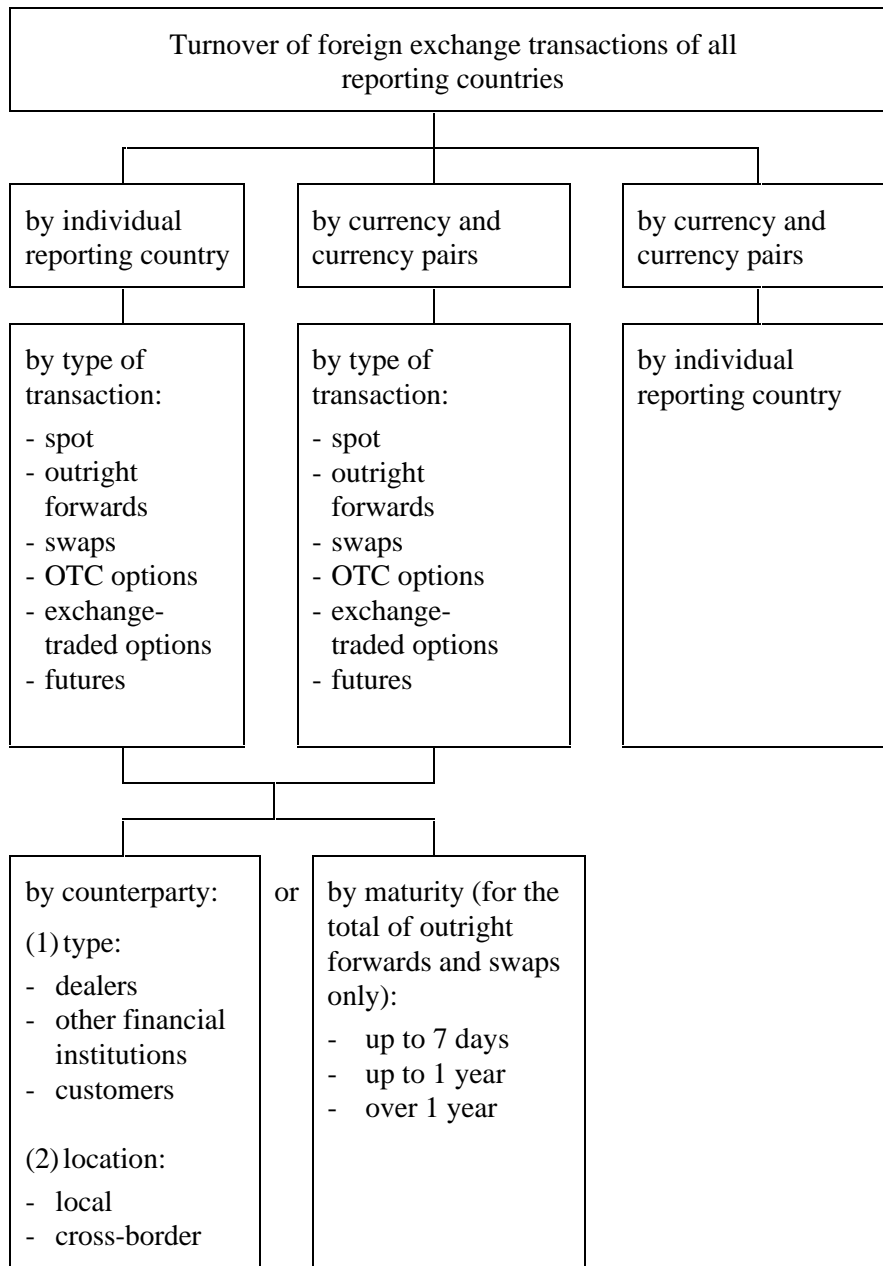
The 1992 foreign exchange market turnover survey provided a cross-section view of spot, forward and related derivative transactions in (i) various individual currencies and (ii) pairs of currencies concluded in one particular month (converted into daily averages, in millions of US dollars). In contrast, the 1989 survey was less detailed. It provided separate data on foreign exchange instruments and currencies but no cross-sectional view of the two breakdowns. In both surveys, data pertaining to individual reporting countries were provided net of local inter-dealer double-counting and gross of cross-border inter-dealer transactions. Global data were obtained by aggregating those for individual countries and adjusting for cross-border inter-dealer double-counting. The adjustments included an estimate of the volume of turnover between entities in non-reporting countries. The types of data which were available from the 1992 foreign exchange market survey are summarised in the following diagram.

Because of the lack of reasonably comprehensive and internationally consistent data on the size and structure of the derivatives markets, the Governors of the central banks of the Group of Ten countries agreed in May 1994 to a recommendation of the Euro-currency Standing Committee to sponsor an internationally coordinated survey among a broad group of intermediaries in derivatives markets.

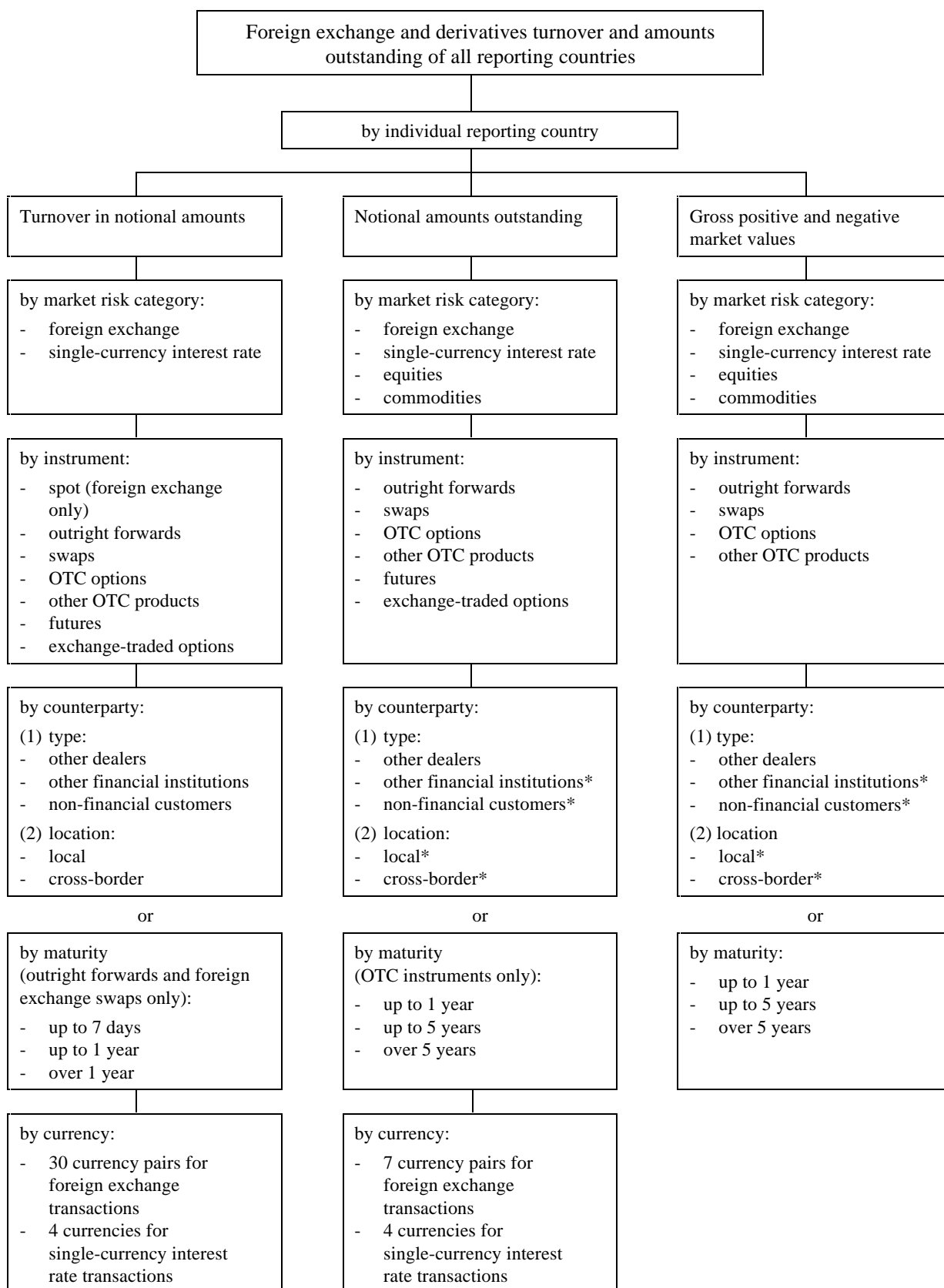
The survey was combined with the existing triennial Central Bank Survey of Foreign Exchange Market Activity and was conducted in March/April 1995. It covered, in addition to the turnover data on foreign exchange transactions which had been collected in the previous surveys, detailed data on turnover, notional amounts outstanding and gross market values of single-currency interest rate, equity and stock index and commodity derivatives, and notional amounts outstanding and gross market values of foreign exchange derivatives.

The detailed types of data which will, in principle, be available from the survey are indicated in the diagram on the following page.

**Spring 1992 Central Bank Survey of Foreign Exchange Market Activity**



## Spring 1995 Central Bank Survey of Foreign Exchange and Derivatives Market Activity



\* For foreign exchange and single-currency interest rate instruments only.