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Collecting Statistics on Financial Derivatives in UK

Prepared by the UK Office for National Statistics

COLLECTING STATISTICS ON FINANCIAL DERIVATIVES IN UK

Introduction

1. The paper describes the UK's initial experience in collecting statistics on financial derivatives to meet the new needs of the Balance of Payments and National Accounts. It provides details on the information being collected by the Bank of England and the Office for National Statistics (ONS) and the background to the methodology chosen. It also highlights some of the technical difficulties encountered.

Summary

2. The requirement to include statistical data on financial derivatives was first incorporated in the international manuals in SNA93 and BPM5. This was followed by ESA95, the European regulation corresponding to SNA93, which places a legal requirement on EU member states to collect data on derivatives. Subsequently, following an extended international debate, the IMF prepared revised additional guidance in their paper on "The Statistical Measurement of Financial Derivatives" in November 1997 and this is currently being incorporated into the BPM5 and the SNA93.

3. Existing data sources lacked suitable residency-based information to meet the needs of the new standards. For example the BIS data are compiled on a worldwide consolidated basis and provides insufficient sectoral detail for National Accounts purposes. New UK collection systems were necessary. These were designed while the IMF paper was being developed. Therefore the new data should be in line with any forthcoming agreement on the presentation of these figures in the Balance of Payments, IIP and National Accounts.

4. The UK data collection covers the principal market makers and users of financial derivatives within the financial corporations sector. Positions and transactions data are being collected quarterly. Detailed breakdowns are collected from banks and securities dealers - the major players in the UK derivatives market. Aggregate data only are collected from building societies and other financial corporations. Figures relating to non-financial corporations and other end users including non-residents' transactions will be estimated from counterpart detail.

5. Quarterly data collection began for Quarter 1 1998, with the first position data for end-December 1997. Response has been encouraging but some practical difficulties on valuation, globalisation , gross versus net recording, and volatility of data have been encountered.

Methodology: Banks

6. The Bank of England took the lead in developing the collection of statistics on derivatives in the UK banking sector. The requirement for a new survey of banks was initially drafted in 1995 following preliminary visits to a number of banks, active in the derivatives market. A Working Group with five other banks was formed which drew up a draft quarterly inquiry form (called Form DQ). This was agreed and finalised after detailed discussion with the British Bankers' Association. Form DQ is a large document, particularly with the accompanying notes for completion. Copies will be available at the Committee meeting, and the whole form can be viewed on the Bank of England internet website (www.bankofengland.co.uk/mfsd/defs).

7. The formal National Accounts requirements are limited to total derivative assets and total derivative liabilities positions and associated transactions data. However the form was designed to include the building blocks that make up these aggregate figures. For positions data breakdowns recording liabilities and assets for instrument type (Options, Futures/Forwards, Swaps, FRAs and Other) by risk category (Interest Rate, Foreign Exchange, Commodity/ Equity and Credit Derivative) and by full counterpart sectorisation are included. Transactions data are collected by instrument and risk. However, these are collected on a net basis rather than gross to ease reporting burdens. Counterpart detail on the transactions section is limited to a UK/non-resident split, as other breakdowns are not readily available within many banks (although these splits will be approximated using levels data). A detailed country breakdown of external liabilities and assets (claims) is also collected. All the data are collected with a sterling/euro/other currency split. Positions figures are shown separately for the trading book and banking book (see Para 18 below).

8. Form DQ is therefore very detailed (although less so than the first draft). It would appear to increase considerably the reporting burden of the banks. However, the Working Group discussions revealed that most of the trading book detail was readily available and that aggregate figures would anyway have to be compiled using a 'bottom up' approach. From our perspective, the additional information gave us increased flexibility at a time when international standards were still evolving and also gave us increased scope for validation of the data which would otherwise have been difficult. In addition, the extra detail is likely to be interesting to users concerned with issues of market risk and financial stability.

9. The Form DQ sample was chosen with the aim of achieving 95% coverage of the outstanding derivative positions by total marked to market value. This led to a sample of 45 banks reporting the Form DQ. The remainder report total derivative figures on their standard balance sheet forms only. The aggregate figures relating to the entire banking sector allow us to gross up the detailed breakdowns for derivatives positions but further work needs to be done on grossing of transactions data. In addition, the balance sheet totals are also being used to keep a check on possible revisions to the reporting panel.

10. In addition to recording the marked to market value of derivative contracts on the Form DQ and balance sheet returns, we also collect the total notional value of all outstanding derivative contracts on another standard form going to some 300 banks quarterly. Notional values provide a useful checking tool, eg to update the Form DQ reporting panel, and can be used for analytical purposes to see whether the ratio of market values to notionals varies over time. Note however that this area has caused some difficulties, both for the banks – which initially found this information difficult to produce - and for forms design as the figures are so large.

11. The Bank of England also collects six-monthly data on the consolidated exposure of UK registered banks and their branches/subsidiaries worldwide, for supervisory as well as statistical purposes. From end-1997 banks have been asked to record total marked to market values of all derivative instruments (OTC and exchange-traded contracts) included in the bank's trading book. Banking book derivatives are also included, but on a "best endeavours" basis: these data are still regarded as experimental.

Methodology: Securities Dealers

12. The new quarterly system developed by the ONS for securities dealers (ie non-bank securities dealing institutions classified to UK SIC 65.23/3) drew heavily on the approach and experience of the banking sector. A shorter version of the banking form was drafted, making full use of the layout and notes. A small number of dealers were consulted about the Form DQ and the shorter version, and asked to express a preference for their reporting. The shorter version was generally preferred. All contributors to ONS's existing quarterly inquiry to securities dealers were then sent the short form for comment. The form was finalised in the light of the feedback. It collects data on asset and liability positions by instrument type and by counterpart sector, with a sterling/other currency split. Net transactions data are collected for UK/non-resident counterparts by instrument type, again with a currency split. Copies of the form will be available at the meeting.

13. The new form is sent out to all existing contributors (nearly 50 securities dealers) as an annex to the standard quarterly inquiry form. Initial response rates to the new annex by smaller companies is encouraging. However, low response by the larger firms means that overall market coverage is insufficient, at present, to produce reliable grossed estimates for their derivatives activity. This will need to be resolved before a thorough assessment of data consistency can be made.

Methodology: Other Financial Corporations

14. For those remaining financial corporations covered by ONS inquires aggregate information on derivatives is also being collected. Extra questions have been included in the standard quarterly and annual inquiries for overall asset and liability positions in derivatives, and net

transactions. Net transactions data are split between UK and non-resident counterparties and within that by interest rate swaps, FRAs, and other contracts. For positions data counterpart information is also split between monetary financial institutions and other UK residents.

15. Detailed estimates for the UK as a whole will be deduced from the aggregates using the detailed information available from the banking and securities dealers forms.

Main issues

16. Many banks have indicated that they do not distinguish between unsettled spot and forward foreign exchange deals when marking their trading books to market. This conflicts with the new statistical guidance which places unsettled spot transactions outside the definition of a financial derivative. This problem is likely to be mirrored in other countries and it is possible that international manuals might have to acknowledge this difficulty. As a mitigating factor, we believe that the marked to market values of these spot positions are likely to be considerably smaller than those of forward positions.

17. International accounting standards agencies are currently debating the issue of **valuation** of derivatives. A move towards marked to market valuation seems likely at some point, at least for the major financial institutions. But at present, standard banking practice is to record only trading book positions on a marked to market basis, while derivatives held as hedges to investments in the banking book are valued on an accruals basis, ie in line with the valuation of the instruments against which they provide a hedge. This may present difficulties when producing whole economy data since counterpart information may be valued on a different basis.

18. The Form DQ is therefore split into two sections that allow the use of these different valuation methods. So far as is possible, banks are completing the banking book section of the form at market value but, because such information does not drop out naturally from management information systems it is recognised that this may involve a greater degree of approximation. An additional issue is that most reporters find marked to market reporting of banking book positions impossible on their monthly balance sheet returns, given the tighter deadlines.

19. One important issue is whether derivatives, which can move from being an asset to a liability within a reporting period, should be reported on a **gross or a net basis** (ie assets and liabilities reported separately or netted off). For levels, general international consensus is that gross recording is preferable as it gives a clearer indication of the size of different markets and total exposures. For transactions, the issue is rather more complex for a number of reasons:

- contracts can be closed out by entering into an equal but opposite transaction. Conceptually they can be seen as either a reduction in assets/liabilities or as an increase in liabilities/assets.

- a single payment, on for example an interest rate swap, might include an element that is a reduction of assets and an element that is an increase in liabilities.
- increasing use of netting agreements means that institutions will be settling on a net rather than a gross basis, making reporting even more difficult.
- many institutions have indicated that they cannot provide transactions on a gross basis.

20. The **location of booking** is an issue that appears to create problems that may be unique to derivative contracts. Several institutions, with a worldwide presence, have a single **global book** where all contracts are recorded, irrespective of where they were organised. One concern was to ensure that there is no possibility of either non-recording or double counting of contracts. A further concern was whether the location of a contract booked within an institution is transparent to the counterpart to the deal (for example would the counterpart know whether it was effectively dealing with a non-resident institution rather than a domestic one).

21. Further investigation revealed that the contracts specify who the legal counterpart is, and where it is located (eg not just Bank X, but Bank X in country Y). Contracts should therefore be recorded on the basis of contract specifications and data for consistent reporting should be available from institutions' internal reporting systems. Note that if a branch enters into a contract with an institution and then offsets it with an equal but opposite contract with its head office (so as to transfer market risk) then it should report both contracts on a gross basis.

22. One unavoidable consequence of **global booking** is that the National Accounts and Balance of Payments statistics on trading in derivatives are more complex to interpret. For example some institutions book some/all contracts initiated by non-resident branches on their UK balance sheets, while other institutions book all these contracts with the non-resident branch. Furthermore statistics on derivative contracts between UK non-financial corporations and UK branches may be missed if the non-resident head office operates a global book.

23. A related locational problem arises with **derivative exchanges**. The globalisation of financial markets may mean that non-resident institutions will be entitled to become clearing members of resident exchanges. The exchanges themselves may then have to provide statistical information to enable these cross border flows to be captured.

24. On the practical issues, resources need to be invested in **training** staff in a complicated area of data collection, and **developing** their expertise. ONS have drawn heavily on the experience of Bank of England colleagues and this cooperation has been very beneficial.

Early Data Assessment and Plans

25. Data collections stated as at end Q4 1997 for banks and end Q1 1998 for securities dealers. We found that the initial returns required close scrutiny, with perhaps the most common error being the recording of notional values of contracts rather than marked to market values.

However, data from the majority of institutions were reasonable and appear to have improved markedly in subsequent quarters.

26. Initial (levels) data were checked against the 1995 BIS derivatives survey, which was compiled on a similar location of business basis. Later BIS surveys are being compiled on a world-wide consolidated basis and are not as useful. Supervisory figures and information published in (some) institutions' annual accounts are also a useful check. However most of these sources can only indicate whether the general magnitude of an institution's figures is reasonable, and this may be inconclusive given the strong growth in the size of the derivatives markets over recent years. In addition, we have found that many institutions find reporting transactions rather more difficult than levels.

27. Data relating to more than one quarter have now been collected and it is now possible to compare figures from quarter to quarter. The degree of fluctuation from one quarter to the next makes assessing the plausibility of the data rather more difficult than with conventional instruments. For example, one institution indicated that its derivative figures had increased by around 30% as a result of recent turbulence in the world foreign exchange markets.

28. Checks that we have found useful include:

i. The size of (total assets - total liabilities): we have found that the difference is less than 10% of the size of total assets for most institutions with the difference being less than 3% for the largest institutions.

ii. Changes in total assets/total liabilities from one quarter to the next: although the degree of reasonable fluctuation is far larger than with standard instruments.

iii. The ratio "total assets:notionals" (if collected): this is a useful check and should be reasonably consistent across institutions and from quarter to quarter: we have found that this is typically between 2 and 3%.

iv. The magnitude of transactions.

v. The change in (assets - liabilities) from one quarter to the next minus total transactions over the quarter: this gives an indication of the realised plus unrealised profits over the quarter.

29. We have also found that the extra degree of detail on the banking returns has enabled us to spot errors that would not have been detected if totals only had been reported. In particular we have had cases where the majority of the return was correct but certain product types were being recorded in notionals because they had been compiled by a different part of the institution.

30. ONS and Bank of England have been working closely to overcome the initial problems such as dealing with queries, consulting with (and chasing) respondents and analysing the data.

The systems and procedures appear to be working smoothly. Both ONS and Bank of England have found that the number of queries received has decreased, although clarification on the meaning of a derivative asset and a derivative liability continues to be important. For non-banks we have found that the person who completes the forms may not necessarily know very much about the derivatives markets.

31. Monitoring and improvement of the data quality will continue to be a joint activity. There are still some concerns. For example some respondents appear to have difficulty separating out the gain and loss transaction elements from the delivery of the underlying asset - particularly with foreign exchange transactions where the pay and receive legs can sometimes be staggered. Generally securities dealers are having more difficulty than banks in providing the data.

32. Annex 1 gives a broad analysis of the overall positions of the banking sector by counterpart, instrument type and risk category, based on our figures so far. It also shows the security dealers positions by counterpart. We are in the process of preparing a full analysis and interpretation of all the figures. We plan to produce a data quality report soon to help decide whether, when and what we are able to publish. The aim is to publish end-year positions in March.

33. We will keep monitoring the size of the derivatives market and the involvement of the various institutions. Trade organisations will be consulted and the extension of detailed survey forms to other financial corporations will be considered as appropriate. The notes and form layout will be reviewed regularly, as our knowledge of the derivatives industry develops.

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- Total assets/liabilities of the banking sector are around £400 billion: securities dealers total perhaps around £100 billion. The split between assets and liabilities is very broadly 50/50

- The tables below give approximate breakdowns of the total figures:

BANKS

Economic Sector of Counterpart	Percentage
UK	25
Financial Corporations other than MFIs (including Securities Dealers)	15
Non-resident offices of reporting institution	10
Non-resident banks	30
Other non-residents	20
Other	1

Instrument Type	Percentage
Options	10
Futures	20
Swaps	70
FRAs	1

Risk Category	Percentage
Interest Rate	55
Foreign Exchange	35
Equity and Commodity	10
Credit Derivative	<0.2

SECURITY DEALERS

Economic Sector of Counterpart	Percentage
UK Banks	56
UK Building Societies	0
Other UK MFI's	5
Other UK residents	1
Non-residents	38