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Financial Derivatives
Framework for Discussion
Full Report on Conceptual Aspects
Full Report on Practical Aspects

Prepared by the Financial Flows and Stocks Task Force
European Central Bank

BOP FINANCIAL FLOWS AND STOCKS TASK FORCE

FINANCIAL DERIVATIVES

FRAMEWORK FOR DISCUSSION
APPROVED BY THE WORKING GROUP ON STATISTICS
- FEBRUARY 1996 -

FULL REPORT ON CONCEPTUAL ASPECTS
APPROVED BY THE WORKING GROUP ON STATISTICS
- OCTOBER 1997 -

BACKGROUND DOCUMENT TO FULL REPORT ON CONCEPTUAL ASPECTS: OPTIONS AND FUTURES

BACKGROUND DOCUMENT TO FULL REPORT ON CONCEPTUAL ASPECTS: INTEREST RATE INSTRUMENTS: SWAPS AND FRA'S

BACKGROUND DOCUMENT TO FULL REPORT ON CONCEPTUAL ASPECTS: COMMODITY AND EQUITY (INDEX) SWAPS; FORWARD FOREIGN EXCHANGE CONTRACTS; EMBEDDED DERIVATIVES AND CREDIT DERIVATIVES

FULL REPORT ON PRACTICAL ASPECTS
APPROVED BY THE WORKING GROUP ON STATISTICS
- APRIL 1998 -

FINANCIAL DERIVATIVES

FINANCIAL DERIVATIVES

Framework for discussions

(approved by the Working Group on Statistics in February 1996)

INTRODUCTION

1. The EMI Balance of Payments Financial Flows and Stocks Task Force has made proposals for harmonisation of the balance of payments Capital and Financial Account. However, these proposals do not cover all details of the balance of payments and the recording of financial derivatives at the European level is an important issue which is still to be discussed. This paper outlines a basis on which discussions on the treatment of *financial derivatives* could be conducted. Harmonisation of the recording of financial derivatives is essential if a consistent European extra Monetary Union balance of payments and the production of analytically useful data is to be achieved.

2. In contrast to the recommendations of the 4th edition of the IMF BOP Manual, the 5th edition recommends the separate recording of financial derivatives under Portfolio Investment. The growth of new financial instruments and new market participants has warranted this change of presentation and resulted in an expanded coverage of the Portfolio Investment account. The financial derivatives market is extremely complex and this is mirrored by the difficulties encountered when trying to reach conclusions on the appropriate balance of payments treatment for certain instruments. The IMF Manual (5th edition) deals explicitly with only a few types of financial derivatives and, as a result, the appropriate treatment of many other instruments is left unresolved.

3. Due to the growing significance of and public interest in financial derivatives, the treatment of them has been discussed within various other international organisations. In the December meeting of the Working Group on Statistics, it was suggested that the results of studies undertaken by other institutions should be taken into consideration as much as possible, even if their focus was not necessarily with regard to balance of payments aspects. In this context, a survey and study both undertaken by the BIS[1] are being considered.

[1] "Issues of measurement related to market size and macroprudential risks in derivatives markets - report prepared by a working group established by the central banks of the Group of Ten countries," Basle, February 1995. "Spring 1995 Central Bank Survey of Foreign Exchange and Derivatives Market activity".

4. **In this paper the Task Force proposes a framework for how discussions on the treatment of *financial derivatives* could be conducted, for approval by the Working Group on Statistics.** The paper is structured in five parts. Part 1 attempts to set out the *definition and coverage* of financial derivatives and to pinpoint particular areas which should be addressed. Part 2 highlights some of the issues that need to be addressed. Part 3 focuses on *data availability* of financial derivatives in EMU Member States. Part 4 discusses the use of *work undertaken by other international fora* on financial derivatives. Part 5 presents a *proposal* for how discussions within the Task Force could be structured.

PART 1 DEFINITION AND COVERAGE

5. For the discussion of the statistical treatment of financial derivatives, a definition of these instruments is not imperative and may even be too restrictive. However, it may be useful as a guide. The ESA describes financial derivatives as, "financial assets based on or derived from a different underlying instrument. The underlying instrument is usually another financial asset, but may also be a commodity or an index". The Group of Ten state that, "a financial derivative is a contract whose value derives from the value of an underlying asset but does not require any investment of principal in those assets. As a contract exists between two counterparties to exchange payments based on underlying prices or yields, any transfer of ownership of the underlying assets and cash flows becomes unnecessary. The return from a derivatives transaction can be tied to any observable price or performance feature of financial assets." (BIS, Group of Ten report, pages 6 and 7). The Task Force considered it helpful to describe financial derivatives on the basis of their functional characteristics, namely their role in unbundling and re-allocating risks associated with the holding of primary instruments.

6. The 5th edition IMF Manual (para 392) states that, "certain financial instruments give the holder the qualified right to receive an economic benefit in the form of cash, a primary financial instrument etc, at a future date. These instruments are referred to as derivatives or secondary instruments, in that they are linked to either specific financial instruments or indicators (foreign currencies, government bonds, share price indices, interest rates etc), or to particular commodities that may be purchased or sold at a future date. Derivatives may also be linked to a future exchange, according to a contractual arrangement, of one asset for another".

7. The IMF Manual (para 392) also lists some of the derivative instruments which are to be recorded: options, traded financial futures, warrants and arrangements such as currency swaps and interest rate swaps but this list is not exhaustive. For an understanding of the mechanics of settlements and the nature of cash flows, it is useful, however, to make a distinction between instruments which include over-the-counter (OTC) contracts (forwards, swaps) and instruments traded on organised markets (traded financial futures, options). Annex 1 provides a listing of these

instruments. This list serves only as an first indication of the instruments to be discussed; other groupings of financial derivatives can also be made. The grouping most suitable for the discussions within the Task Force will be developed in due course.

PART 2 ISSUES TO BE DISCUSSED

8. For each of the instruments mentioned above, complex issues need to be raised. In order to give an idea of the content of the further discussions, some of the more important issues are presented in this section of the report:

- When does a financial derivative give rise to a flow to be recorded in the balance of payments?
- When does a financial derivative give rise to a stock value to be recorded in the balance of payments?
- The treatment of margin and variation payments for futures and options.
- Forward rate agreements and interest swaps: the classification of net payments/receipts.
- Practical problems related to the valuation of financial derivatives (flows and stocks).

9. Member States do not see conceptual problems with the valuation of derivatives (market value) but some Member States do have related practical problems. In some Member States, it is standard practice for contracts within a trading portfolio to be "marked to market" for valuation on the balance sheet whereas contracts entered for hedging purposes are normally valued in the same way as the primary instrument against which the derivative is hedged (usually on an accruals basis). This may result in asymmetric reporting. In Member States where data collection is based on a settlement system, market values may be difficult to capture in case of, for example, the exercising of options and warrants (i.e. in a settlement system it is difficult to find the difference between the market price and the strike price).

10. Some of the difficulties arising from these issues are closely related to the practical limitations of the collection systems. This will be taken into account when discussing the topics.

PART 3 DATA AVAILABILITY

11. The separate recording of financial derivatives under Portfolio Investment is a new requirement of the IMF BOP Manual. Until recently, the recording of financial derivatives has been scattered throughout the balance of payments. However, meeting the requirements of the IMF is not merely a question of the rearrangement of existing data. It also necessitates clarification on some of the recommendations of the Manual, for example with regard to "margin payments".

12. Member States are aware of the need to collect data on financial derivatives but many of them have experienced problems because they are unsure of the requirements of the Manual. In some cases, Member States have started to collect data whilst others have chosen to wait for clearer guidance before embarking on this task.

PART 4 USE OF STUDIES UNDERTAKEN BY OTHER INTERNATIONAL FORA

13. Following the suggestion of the WGS, the Task Force made a first investigation into the usefulness of the BIS work undertaken in the field of financial derivatives, in particular the "Spring 1995 Central Bank Survey of Foreign Exchange and Derivatives Market Activity". The Task Force considered that the work undertaken by the BIS provided useful information on definitions and concepts of the derivatives market which would enhance the understanding of this topic. The results of the Survey were regarded as very useful for checking the current balance of payments information in terms of outstanding size and the composition of the (reporting) population. On the other hand, it was pointed out that the BIS work and, in particular the data, may be of limited use. For example, it is composed of consolidated world positions (end of March), is based on notional values, and has been carried out on a voluntary basis only once.

14. Given the complexity of the topic, the Task Force is keen to use in its further deliberations any work done by other fora. At the same time, it should be emphasised that the focus of the discussions in the Financial Flows and Stocks Task Force is on cross border financial derivative activity.

PART 5 PROPOSAL FOR THE FRAMEWORK OF THE DISCUSSION

15. The Task Force proposes the following framework for future discussions and briefly outlines the work that should be undertaken:

(i) **A general description of the financial derivatives market from a balance of payments viewpoint would be useful**. This means that Part 1 of this paper would need to be expanded upon in order to give a better overview of the international derivatives market.

(ii) **A summary of the work done previously i.e. recapturing past discussions held within the Task Force, for example with regard to the treatment of "options"**.

(iii) **Proposals should be made for the balance of payments treatment of individual instruments.** Certain issues are relevant to some instruments only and, therefore, groupings of type of instruments can be made (annex 1). It is intended to discuss the most common (groups of) financial derivatives first.

(iv) **On the basis of the results under (iii), entries for the Financial Terminology Database could be prepared.** As the practical limitation of data collection are very significant, priority will be given to a review of practical, rather than conceptual, data collection issues.

FOLLOW-UP

16. If the WGS is in agreement with the proposed framework of discussions within the Task Force, a more substantial report including guidelines for the BOP treatment of the most important and/or common derivative instruments will be prepared for the WGS meeting in June 1996.

Annex 1

FINANCIAL DERIVATIVES
LIST OF INSTRUMENTS
(as of February 1996 - not exhaustive)

Exchange traded derivatives (in organised markets)

Futures

- Interest rate futures
- Equity futures
- Currency futures
- Commodity futures

Options (traded)

Warrants (covered)

Over-the-counter (OTC) derivatives

Forwards

- Forward rate agreements
- Forward exchange agreements

Swaps

- Interest rate swaps
- Foreign exchange swaps
- Commodity swaps
- Equity index swaps
- Asset swaps
- Other

Options

THE RECORDING OF FINANCIAL DERIVATIVES IN THE BALANCE OF PAYMENTS AND THE INTERNATIONAL INVESTMENT POSITION

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CONCEPTUAL ASPECTS

(endorsed by the BOP Financial Flows and Stocks Task Force in September 1997 and approved by the Working Group on Statistics in October 1997)

INTRODUCTION

1. This full report to Working Group on Statistics (WGS) on Financial Derivatives aims to provide information about the work carried out regarding the conceptual harmonisation of the treatment of financial derivatives in the balance of payments and the International Investment Position by the BOP Financial Flows and Stocks (FFS) Task Force. The framework for discussion was approved by the WGS in February 1996 and a progress report was approved by the WGS in April 1997. The WGS approved the recommendations put forward by the BOP FFS Task Force. In addition the WGS was informed about the progress made in the examination of practical aspects of the recording of financial derivatives. The WGS was also informed about the co-ordination with other statistics, such as money and banking statistics and Financial Accounts statistics, and with other international statistical forums.

2. The paper is structured as follows. Part 1 addresses conceptual aspects of the recording of financial derivatives in the balance of payments and the International Investment Position. Part 2 deals with practical aspects of data collection on financial derivatives. Part 3 provides a summary of the reasoning behind the recommendations.

ASSESSMENT AND FURTHER WORK

3. The financial derivatives market is extremely complex and this is reflected in the difficulties encountered when trying to reach a conclusion about the appropriate treatment of certain instruments in the balance of payments and the International Investment Position. These rapid developments and the complexity of the market also explain some of the gaps in data availability in some Member States.

4. WGS approval of recommendations presented by the BOP FFS Task Force signifies a major step forward in preparing for the data collection on financial derivatives. These recommendations form the basic fundamentals of the treatment of financial derivatives in the balance of payments and the International Investment Position. The approval of the recommendations allows EU Member

States to start implementing the requirements regarding the data on financial derivatives and improving the comparability of data.

5. Future work on financial derivatives will include further guidance on the treatment of individual instruments. This will be carried out within the framework of the Financial Terminology Database (paragraphs 30-31). Valuation issues should also be addressed. Although all members of the Task Force agree with market valuation in theory, this poses a number of difficulties in practice. Practical aspects of the recording of financial derivatives and the reconciliation of flows and stocks, one of the most difficult aspects of the statistical treatment of derivatives, will be addressed by the Sub-group on Financial Derivatives (paragraphs 23-29).

6. The WGS supports the close monitoring of the implementation of proposals and data availability for financial derivatives. This could perhaps be carried out as part of the "Monitoring of Implementation Exercise".

PART 1 CONCEPTUAL ASPECTS

SECTION 1: General issues

7. The Task Force discussed the need to develop a definition of financial derivatives and concluded that:

(i) other forums had spent a considerable length time considering a definition;
(ii) such a definition was not essential for the statistical treatment of financial derivatives;
(iii) the issue of which instruments were to be regarded as derivatives and which were not was considered to be more relevant. This is in line with the discussion of the financial asset boundary held by the IMF Informal Group on Financial Derivatives.

8. The FFS Task Force recognises the importance of a reconciliation of flows and stocks for all derivative instruments. This is an extremely difficult area and further investigation will be needed.

9. It had also been suggested that it might be useful to study the quantitative impact of the inclusion of financial derivatives in the various accounts. However, the differences in data availability and the current methods used in Member States do not at present permit an investigation into the quantitative impact of the inclusion of financial derivatives in the various accounts. This will, however, be investigated at a later stage.

10. The financial derivatives market is extremely complex and this is reflected in the difficulties encountered when trying to reach a conclusion about the appropriate treatment of certain instruments in the balance of payments and the International Investment Position. The IMF Balance of Payments Manual (5th edition) (BPM5) deals explicitly with only a few types of financial derivatives and, as a

result, the appropriate treatment of many other instruments or specific issues is left unresolved. Markets and products have evolved rapidly over the past five years. In addition, since publication of the IMF's BPM5, further knowledge of the derivatives market has been acquired which challenges some of the assumptions underlying the recommendations made in the BPM5.

SECTION 2: Discussions held and recommendations presented by the BOP Task Force

11. The BOP FFS Task Force has discussed the characteristics of groups of derivative instruments in detail and has formulated recommendations on the treatment of those groups of derivative instruments in the balance of payments and the International Investment Position. The groups of derivatives instruments discussed are: options, futures, interest rate derivatives, commodity and equity (index) swaps, forward foreign exchange contracts, credit derivatives and embedded derivatives. A summary of the reasoning behind these recommendations is given in Part 3 of this report.

12. The IMF has also started to discuss the statistical treatment of financial derivatives. A paper entitled "The statistical measurement of financial derivatives" provides proposals for the recording of derivatives in the various statistics, including the balance of payments and the International Investment Position. A second draft of the paper will be discussed at the IMF BOP Committee meeting in October 1997. The IMF intends to include all proposals on the treatment of financial derivatives in the new Manual on Monetary and Financial Statistics. Should the BOP Committee approve the proposals in October 1997, balance of payments compilers would be able to go ahead and implement the changes required. The proposals on the treatment of financial derivatives are presented to the Inter-Secretariat Working Group on National Accounts at its meeting mid-October 1997. There are no differences between the recommendations put forward by the IMF in its most recent paper and those made by the BOP FFS Task Force.

13. The BOP FFS Task Force presents the following recommendations on the treatment of financial derivatives in the balance of payments and the International Investment Position. The reasons behind these recommendations are summarised in Part 4.

Recommendations approved by the Working Group on Statistics in April 1997

General

The Task Force proposes to present these agreements and recommendations to other international and European forums, i.e. the IMF and EUROSTAT (BOP Working Party, Working Party on Financial Accounts, Working Group on National Accounts/GNP Committee).

Recording of the premium (options)

The Task Force has concluded that the full premium (i.e. the purchase/sale price of the options and the implied service charge) should be recorded in the Financial Account as the acquisition of a financial asset by the buyer, and as the incurring of a liability by the seller for both over-the-counter and exchange-traded options (paragraph 35 of this report).

Valuation (options, futures and interest rate derivatives)

The Task Force agreed with the valuation on a market basis. Practical difficulties may arise in the application of this valuation principle. Valuation would be conducted on a marked-to-market basis as far as possible (paragraphs 36-41 and 48 of this report).

Recording of margin payments (options and futures)

In principle, initial margin payments should be regarded as changes in deposits and be recorded, if identifiable, under Other Investment, Other Payables/Receivables. The treatment of variation margin payments depends on the form of the variation margin: options-style variation margins should be regarded in principle as changes in deposits and should be recorded, if identifiable, under Other Investment, Other Payables/Receivables. Futures-style variation margin payments should be regarded, in principle, as transactions in derivatives and should be recorded under Financial Derivatives. Member States are encouraged to follow this recommendation.

In those Member States where it is impossible, at present, to make a distinction between the two types of margining, it may be possible to estimate the futures-style variation margin. Consideration could also be given to reporting the margin payments under a separate item until the recommended treatment is implemented (paragraphs 42-46 of this report).

Recording of net streams of settlement flows associated with interest rate derivatives

It is recommended that the net stream of settlement flows associated with interest rate derivatives should be recorded as Financial Derivatives in the Portfolio Investment Account. Transactions in interest rate derivative instruments, i.e. swaps (all transactions in interest rate swaps and the interest rate element of cross-currency swaps) and FRAs should be recorded under Financial Derivatives in the Portfolio Investment Account (paragraphs 49-58 of this report).

14. The following recommendations were approved by the WGS in October 1997:

Recommendations approved by the Working Group on Statistics in October 1997

Commodity swaps
It is recommended that commodity swaps should be recorded under Financial Derivatives in the Portfolio Investment Account of the BOP and IIP (paragraphs 59-60 of this report).

Equity (index) swaps
It is recommended that equity (index) swaps should be recorded under Financial Derivatives in the Portfolio Investment Account of the BOP and IIP (paragraphs 61-62 of this report).

Forward foreign exchange contracts
Transactions in forward foreign exchange contracts occur when the contract is exercised. The difference between the amount agreed at the time of the contract and the amount that would be paid at the spot rate prevailing at settlement should be allocated to transactions in Financial Derivatives (paragraphs 63-66 of this report).

Embedded derivatives
It is recommended that embedded derivatives should be recorded together with the underlying financial instrument and not be recorded and valued separately in balance of payments statistics and the International Investment Position (paragraphs 67-69 of this report).

Credit derivatives
In principle it is recommended that the classification of specific instruments of credit derivatives should be decided upon case by case (paragraphs 70-73 of this report).

SECTION 2: Compatibility with other statistics

(i) Money and Banking Statistics

15. The BOP FFS Task Force has carried out its work in close liaison with the Money and Banking Statistics Task Force. The secretary of the FFS Task Force is an observer at the meetings of the Money and Banking Task Force and the secretary of the Money and Banking Task Force of the FFS Task Force. The Money and Banking Task Force has dealt with the treatment of financial derivatives in money and banking statistics within the framework of the Compilation Guide. The recommendations made for balance of payments and International Investment Position statistics are compatible with the approach taken for money and banking statistics, even if the Money and Banking Task Force has not yet decided upon the classification of certain derivatives instruments.

(ii) European System of Accounts (ESA95)

16. For the statistical treatment of financial derivatives, the European System of Accounts (ESA95) is the major reference. All recommendations proposed by the BOP FFS Task Force are compatible with the ESA95 with the exception of the treatment of recording of net streams of settlement flows associated with interest rate derivatives. The Task Force recommends that the net streams of settlement flows associated with interest rate derivatives should be recorded as Financial Derivatives in the Portfolio Investment Account. The ESA95 (paragraph 4.47) states that these streams of settlement flows should be recorded in the Current Account. **This change would of course affect measures of GNP. The recommendation on interest rate derivatives therefore involves a change to the ESA95 regulations. EUROSTAT should be consulted on this issue.**

17. The Task Force recognises this difficulty and therefore proposes to present these agreements and recommendations to other international and European forums and to the European Commission (EUROSTAT). The BOP FFS Task Force also encourages the Task Force on Monetary Union Financial Accounts to investigate this matter.

(iii) International Monetary Fund

18. Since publication of the IMF's BPM5, further knowledge of the derivatives market has been acquired which challenges some of the assumptions underlying the recommendations made in the BPM5l. In the light of: (1) experience in applying the new balance of payments and SNA standards for financial derivatives, and (2) continuing innovation in the financial markets, the IMF set up an Informal Group on the Measurement of Financial Derivatives in spring 1997 which was asked to give advice on issues related to their implementation, with the objective of amplifying or clarifying the methodologies, as needed. A number of European Union Member States, the OECD and the EMI were represented within this informal group.

19. The Group's work was used as input into the research presented in the IMF discussion paper "The statistical measurement of financial derivatives" (April 1997). The paper aims to be a comprehensive document, whose intention is to clarify the text of the 1993 System of National Accounts (SNA93) and the BPM5. The paper makes some important recommendations for changes to the SNA93 standards. For instance, the paper recommends that net settlement payments associated with interest rate swaps, forward agreements and similar instruments should be treated as financial derivatives rather than as interest. Adoption of this recommended change would directly affect the financial accounts and national accounts estimates of interest income. A second draft of the paper will be discussed at the meeting of the IMF BOP Committee in October 1997. Any changes to the SNA93 standards must be approved by the Inter-Secretariat on National Accounts (ISWGNA), a group consisting of the United Nations, the International Monetary Fund, the World Bank, the Organisation

for Economic Co-operation and Development and EUROSTAT. The IMF presented the proposed changes to the ISWGNA at its meeting mid-October 1997. The outcome of this meeting will be reported to the IMF BOP Committee at meeting later in October.

20. It should be pointed out that there are ***no*** differences between the proposals made by the IMF in its paper entitled "The statistical measurement of financial derivatives" and the recommendations of the EMI's BOP FFS Task Force on the treatment of financial derivatives in the balance of payments and International Investment Position.

21. The IMF pointed out that there was general consensus, in particular on its proposal to include financial derivatives both as a separate instrument category of Financial Assets in the National Accounts and as a separate functional group in the balance of payments in order to reflect their distinct characteristics. This would be a presentational difference from the requirements of the EMI/ECB as presented in the Implementation Package. If this were to be adopted by the IMF and its Member States, the EMI/ECB may also wish to consider introducing this breakdown in due course. However, at this point no details are given concerning the IMF proposal.

PART 2 PRACTICAL ASPECTS

SECTION 1: Data availability

22. Data availability for financial derivatives varies widely among EU Member States. Few Member States have data on financial derivatives at present. A few EU Member States are currently introducing comprehensive reporting systems concerning data on flows and stocks for financial derivatives. Other EU Member States await the outcome of the work of the BOP FFS Task Force before starting to collect data on financial derivatives.

23. Preliminary investigations have shown that the availability of data on transactions in options and futures differs across the EU Member States. In many Member States data on these types of transactions are already collected, but in some instances these are recorded under a different item in the balance of payments. Other Member States are preparing to collect data on these transactions.

24. Data availability for swaps and FRAs also varies among EU Member States. These derivative instruments are often difficult to capture or to identify separately. It is suggested that the proposed Sub-group on Financial Derivatives should investigate the practical difficulties in collecting data on these instruments.

SECTION 2: Sub-group on Financial Derivatives

25. The Sub-group on Financial Derivatives was set up by the BOP FFS Task Force to investigate the practical aspects, particularly the difficulties, of collecting data on derivative instruments. Since its establishment, the Sub-group has met twice.

26. The Sub-group has started its discussions according to its mandate. The Sub-group will study both simple and complex practical examples of transactions in derivatives and will illustrate how they could be recorded in the balance of payments and International Investment Position, bearing in mind the current international standards and proposed changes to these standards and the availability of data. On this basis, it will investigate the feasibility of a reconciliation between flows and stocks. It will also examine the practical and statistical implications of implementing the current international recommendations for the periodic classification of positions and flows from assets to liabilities and vice versa for those derivative instruments which may "flip" from a positive to a negative value, or vice versa.

27. The Sub-Group on Financial Derivatives will base its work on the conclusions and agreements already reached within the BOP FFS Task Force, including agreements on Financial Terminology Database entries and the IMF Informal Group on the Measurement of Financial Derivatives[1].

28. The Sub-group has decided to discuss both instrument groups and general issues on the basis of examples. The use of examples will highlight the difficulties concerning a reconciliation of flows and stocks and the valuation and definition of assets and liabilities for the different instrument groups. More general statements (or conclusions) would also be derived from the detailed examples. *Therefore, examples of transactions and positions in options, futures, swaps and FRAs* will be discussed in great detail. These examples will initially be simple and may gradually become more complex. The examples included in the recent IMF paper would be taken as a starting-point.

29. In addition to the examples exercise, the Sub-group proposed to discuss the following topics:

(1) national experiences, for which the Sub-group would act as a forum for an exchange of information;
(2) investigation into methods of data quality assessment;
(3) investigation into the work carried out by the Bank for International Settlements (BIS) and the extent to which this would be useful for balance of payments purposes. The link between statistical data and prudential data could also be investigated.

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[1] The Sub-group will also take into account the recent IMF paper entitled "The statistical measurement of financial derivatives", April 1997.

30. The Sub-group has started to investigate practices in the Member States represented in the Sub-group. Descriptions of data collection systems for derivatives have been circulated as well as (draft and final) reporting forms. The Sub-group generally finds this to be a useful exercise. The Sub-group would consider the study of data on cross-border flows and stocks in derivatives as a useful exercise in the long term. Owing to data availability constraints, such an exercise can not yet be carried out.

31. The Sub-group presented a progress report to the BOP FFS Task Force in September 1997. A full report on the Sub-group's findings is foreseen for mid-1998.

SECTION 3: Financial Terminology Database

32. The Financial Terminology Database has been developed by the Bank of England under the direction of the BOP FFS Task Force. The main purpose of the database is to act as a reference tool for balance of payments compilers. Its special feature is that it combines capital market expertise with balance of payments methodology. The intention is that BOP compilers will be able to access the database, call up the description of an instrument and seek advice on how to treat the instrument in the balance of payments. The main focus of the database is on instruments falling within the Portfolio Investment category of the Financial Account. In compliance with the IMF standard components, instruments are split between equity, bonds and notes, money market instruments and financial derivatives.

33. To date, the BOP FFS Task Force has concentrated on the conceptual aspects of the statistical treatment of groups of derivative instruments. The findings and recommendations of the BOP FFS Task Force should form the basis for the individual entries of derivative instruments in the Financial Terminology Database. Entries (on options, futures and swaps) have been prepared and are pending approval by the BOP FFS Task Force. The entries are, however, unlikely to be finalised until the Task Force has evaluated the final report of the Sub-group. Additional entries will be prepared by the Bank of England in co-operation with the EMI in due course.

PART 3 SUMMARY OF THE CONSIDERATIONS UNDERLYING THE PROPOSALS

SECTION 1: Introduction

34. Part 3 of this report provides a summary of the reasoning behind the recommendations presented regarding the treatment of the following groups of derivative instruments in the balance of payments and International Investment Position: options, futures and interest rate derivatives (swaps and forward rate agreements (FRAs)), commodity and equity (index) swaps, forward foreign

exchange contracts, embedded derivatives and credit derivatives. Entries for the Financial Terminology Database should be prepared on the basis of these findings and recommendations.

35. *The Task Force notes that the current recommendations made by the IMF were based on assumptions and that views on those assumptions have since changed, mainly as a result of newly acquired knowledge. Markets and products have also evolved rapidly over the past five years.* The conceptual debate, compilers' understanding of markets and instruments, and market practice have changed since the IMF texts were first drafted. The recommendations made by the BOP FFS Task Force take into account discussions in other (international) forums as far as possible.

SECTION 2: Options and Futures

36. With regard to the treatment of options and futures, three aspects were considered to be problematic: (i) the separation of the purchase price and the service charge making up the option premium; (ii) valuation; and (iii) the treatment of margin payments. The reconciliation of transactions and positions was seen as an important issue still to be addressed.

(i) The separation of the purchase price and the service charge making up the option premium

37. For options, the BPM5 states that the option premium consists of two elements: the purchase price and the service charge. The modified Black-Scholes model, which forms the basis for (individual) option pricing and trading, does not include any service charge (unless the spread on volatility is included). Member States agree that, in practice, it would be very difficult and probably impossible to discern a service charge element within the premium. **The Task Force concluded that the full premium (i.e. the purchase/sale price of the option and the implied service charge) should be recorded in the Financial Account as the acquisition of a financial asset by the buyer and as the incurring of a liability by the seller.**

(ii) Valuation

38. Member States are faced with practical problems when following the IMF's recommendation to apply the market value for the recording of *flows and stocks* in options and futures contracts. These practical problems are outlined below.

Valuation of transactions in derivatives contracts

39. The value of an option depends on: (i) the difference between the strike price and the value of the underlying asset; (ii) current interest rates; (iii) the volatility of the price of the underlying asset;

and (iv) the time remaining to expiration affecting the expected future volatility of the price of the underlying asset.

40. At the EMU (and global) level, asymmetric reporting may arise as a result of different practices in the books of the two counterparties. It is standard practice for contracts within a trading portfolio to be "marked-to-market" for valuation on the balance sheet. Contracts entered into for hedging purposes are normally valued in the same way as the primary instrument, against which the derivative is hedged (usually on an accruals basis). However, *convergence* towards marked-to-market valuation seems to be taking place.

Valuation of the underlying instruments in the event of delivery (on a market basis)

41. In the event of delivery of the underlying securities in an options or futures contract, the underlying instruments should be valued on a market basis. In such cases, the actual value of the transactions is measured. Information on the market value of the underlying instruments may not be readily available. A number of Member States have indicated that they agreed with the conceptual recommendations regarding valuation, but would have difficulty in following them. Solutions to this problem or an estimation of discrepancies still have to be investigated.

(iii) Valuation of stocks

42. The problems encountered in performing the valuation of stocks are similar to those related to the valuation of flows. The IMF Informal Group on Financial Derivatives addressed the issue of stocks. The outcome of its discussion was as follows:

> *"Participants shared their experiences of measuring position data. It was found that, in general, there were not any serious problems in gathering data from banks on a market value basis. However, several participants experienced difficulty in obtaining data on a residency basis or by domestic sector. Extensive market value information was collected by means of the BIS survey of market activity conducted in spring 1995 among twenty-six participating countries."*

43. The availability of data on a residency basis is, of course, of critical importance for the balance of payments and International Investment Position.

(iii) The treatment of margin payments

44. With regard to *margin payments* associated with options and futures, although the IMF recommended in the BPM5 that all margin payments should be recorded under "deposits" in Other Investment, opinions continue to evolve. In co-operation with the IMF, an in-depth investigation was

carried out by the Task Force into the institutional arrangement of margins in the Member States. This investigation resulted in agreement that there are, in principle, *two distinct types of margining: "initial margining" and "variation margining", and that the practical administration of variation margining can take two forms: "options-style" and "futures-style"*. On this basis, the FFS Task Force proposes the following recommendation regarding the recording of margin payments:

> **"In principle, initial margin payments should be regarded as changes in deposits and be recorded, where identifiable, under Other Investment, Other Payables/Receivables. In addition, options-style variation margins should be regarded, in principle, as changes in deposits and should be recorded, where identifiable, under Other Investment, Other Payables/Receivables. Futures-style variation margin payments should be regarded, in principle, as transactions in derivatives and should be recorded under Financial Derivatives. Member States are encouraged to follow this recommendation.**
>
> **In those Member States where it is impossible, at present, to make a distinction between the two types of margining, it may be possible to estimate the futures-style variation margin payment. Consideration could also be given to reporting the margin payments under a separate item until the recommended treatment is implemented."**

45. In general terms, the different types and forms of margins can be described as follows (allowing for different practices in Member States). The initial margin covers the largest potential loss for the contract, given the risk parameters employed by a clearing house, and is held as a deposit (or by the posting of collateral) for the duration of the contract and returned when the contract expires. With futures-style variation margining, the premium is paid gradually along the life of the contract and is incorporated in the daily variation margin. The daily variation margin payment is usually collected by the clearing house from one party - and simultaneously paid to the other party - and provides the means for effecting a change in ownership. Under options-style margining, the writer posts margins to the clearing house in the form of cash, Treasury bills or a bank letter of credit. The clearing house retains this margin until the options are exercised or until they expire. For over-the-counter derivatives, variation margining, when it occurs, normally operates in a similar way to options-style exchange-traded variation margining. Ownership is transferred at the conclusion of the contract, if at all.

46. In most Member States the form of margining is the same for all contracts, regardless of the underlying instrument. In a few Member States the form of margining depends on either the contract type and/or the settlement medium. These forms of (variation) margins do not always appear in the market of a Member State.

47. All the members of the FFS Task Force agree, in theory, with this recommendation. However, The practical implementation of this recommendation may be difficult in some Member States. The Task Force has found that this recommendation can be followed relatively easily for transactions in derivatives carried out by banks on their own behalf. For transactions in derivatives carried out by banks on behalf of their customers, this recommendation is difficult to follow. It is proposed that issues relating to the practical implementation of this proposal should be studied in more detail. At present, only in a minority of Member States is the distinction made, thus making it possible to detect a change in ownership. A few Member States are in the process of introducing either new statistical regulations or new accounting rules to accommodate this distinction.

48. The proposal by the BOP FFS Task Force on the treatment of margin payments is compatible with the proposals made by the IMF in the paper entitled "The statistical measurement of financial derivatives". The proposals are also compatible with proposals made for the treatment of financial derivatives in the Money and Banking Statistics (refer to the "Money and Banking Compilation Guide", Money and Banking Task Force, 1997). Both the IMF and the Money and Banking Task Force distinguish between repayable and non-repayable margins. According to the recent IMF paper, repayable margin deposits should be recorded in Other Investment. Repayable margins equal initial margins and option-style variation margins. Payments of non-repayable margins should be recorded, according to the IMF paper under Financial Derivatives.

SECTION 3: Interest rate derivatives: swaps and forward rate agreements

49. The Task Force discussed the recording of interest rate derivatives (i.e. swaps and FRAs). There are three issues for discussion regarding these derivative instruments: (i) valuation; (ii) the classification of net streams of settlement flows/payments associated with interest rate derivatives; and (iii) the recording of positions in swaps (and all other derivative instruments which may "flip" from asset to liability, and vice versa).

(i) Valuation

50. In principle, swaps should be valued at market prices. In some Member States there is convergence towards valuation on a marked-to-market basis. However, swaps held on the banking book (usually for hedging and always to maturity) are not often marked-to-market. In Member States where data are collected via a settlement system, a swap arrangement may be difficult to detect or identify separately. In such a system, the valuation may also be based on real payments flows.

(ii) Classification of net streams of settlement flows/payments associated with interest rate derivatives

51. The FFS Task Force proposes the following recommendations regarding the recording of net streams of settlement payments associated with interest rate derivatives:

> **"The net stream of settlement flows associated with interest rate derivatives should be recorded as Financial Derivatives in the Portfolio Investment Account. Transactions in interest rate derivative instruments, i.e. swaps (all transactions in interest rate swaps and the interest rate element of cross-currency swaps) and FRAs, should be recorded under Financial Derivatives in the Financial Account of the balance of payments."**

52. International standards (SNA and ESA95) recommend the recording of streams of interest payments associated with swap transactions, on a net basis, in the Current Account, and the recording of streams of principal repayments in the Financial Account. The members of the Task Force are of the opinion that interest rate swaps and cross-currency interest rate swaps have a market value in practice and should, therefore, be regarded as financial assets/liabilities in the National Accounts and the balance of payments. The complexity and sophistication of inter-dealers' positions primarily account for both the apparent scale of the global market and the growth in cross-border settlement flows. The conceptual reason for the change is a critique of the cost of capital principle which underpins the current international standards. Interest is defined as one form of property income (i.e. the return on the use of capital). However, interest rate swaps do not provide any capital at their inception and, although cross-currency interest rate swaps notionally involve the exchange of principal amounts at the outset, no credit is provided.

53. Swaps may sometimes be used to change the cost of capital, but they are increasingly held and traded for other purposes. The expansion of inter-dealers' business and the associated decline in the proportion of trades directly involving end-users have broken the link between settlement payments and the cost of borrowing. For financial intermediaries, the holding of derivatives contracts is not associated with the provision or receipt of finance; it is simply the acquisition of a financial asset/liability for which the return will come in the form of trading gains and losses. Swaps, like various other financial derivatives, do not themselves involve the provision of capital at the time the instrument is created.

54. Another argument in favour of the change is to ensure consistency of treatment compared with other derivative interest rate products when assessing the use of the resulting data and their quality. A further advantage is that the proposed treatment will enable the analysis of Current Account data to improve as a result of the removal of a large erratic item. The inclusion of the settlement of interest rate swaps and cross-currency interest rate swaps as income may distort the balance of payments Current Account, given the significant impact of interest rate swaps on balance of payments statistics.

55. The majority of Member States are in favour of recording the settlement flows associated with interest rate derivatives as transactions in financial derivatives. A few Member States are of the opinion that interest transactions should be reflected in the income item in the Current Account, as this reflects the specific conditions on the capital markets in these Member States. This treatment would also ensure compatibility with current accounting practices. In addition, this issue affects the size of GNP and some of the Member States concerned would prefer to consult the GNP Committee on this matter. The Task Force also acknowledged that effecting the corresponding change to the ESA95 could be a lengthy and problematic procedure.

56. The IMF's proposals as presented in the recent paper entitled "The statistical measurement of financial derivatives" are in line with the proposals of the BOP FFS Task Force. The following is recommended in the IMF paper:

> *"Thus it is recommended that interest rate swaps and forward rate agreements, two of the most common over-the-counter instruments, be classified as financial assets, and net cash settlement payments associated with interest rate swaps and with FRAs be classified in the financial account rather than as interest. Such as change would affect recorded interest in the national accounts, and hence have implications for national income"(IMF paper, paragraph 61)*

(iii) The recording of positions in swaps and forward rate agreements

57. The Task Force recognises that a swap and an FRA transaction could give rise to a "position" vis-à-vis a non-resident. As swaps and FRA arrangements are examples of derivative instruments which tend to "flip" from being assets to liabilities, and vice versa, the Task Force acknowledges the need to examine this phenomenon further as well as its implications for the International Investment Position and the balance of payments.

58. The recording of positions of swaps and FRAs in the International Investment Position is closely related to their classification in the balance of payments. While these agreements are commonly established without the payment of a premium, market conditions do change and a contract will gain value for one party and become a liability for another. The value of a financial derivatives contract is derived from the difference between the agreed contract price and the prevailing market price, or that expected to be prevailing, which is discounted accordingly. Hence, the relationship between the agreed contract price and the prevailing market price is a crucial element in the valuation of the financial derivatives contract. If the agreed contract price and the prevailing market price are the same, the derivatives contract has no value. If the contract price and the prevailing market price differ, the derivatives contract does have a value, which can "flip" to being positive or negative at various points along the life of the contract. This would mean that the swap contract could be recorded at the end of a reporting period as an asset and at the end of the following reporting period as

a liability, requiring a restatement of positions with a balancing adjustment. The implications of these flips for the classification of the point-in-time valuations according to assets and liabilities needs to be fully examined. This is being carried out by the Sub-group on Financial Derivatives.

SECTION 4: Commodity swaps

59. Commodity swaps are contracts with one or both payments linked to the performance of a commodity price or a commodity index. These contracts involve the exchange of the return on one commodity or commodity index for another, and the exchange of a commodity or commodity index for a floating or fixed interest rate (see the BIS Reporting Forms for the Regular Derivatives Market Statistics).

60 The BOP FFS Task Force recommends that commodity swaps should be recorded under Financial Derivatives in the Portfolio Investment Account of the balance of payments and the International Investment Position.

SECTION 5: Equity (index) swaps

61. Equity (index) swaps are contracts in which one or both payments are linked to the performance of equities or an equity index. They involve the exchange of one equity or equity index return for another and the exchange of an equity index return for a floating or fixed interest rate (see the BIS Reporting Forms for the Regular Derivatives Market Statistics).

62. It is recommended by the BOP FFS Task Force that equity (index) swaps should be recorded under Financial Derivatives in the Portfolio Investment Account of the balance of payments and the International Investment Position.

SECTION 6: Forward foreign exchange contracts

63. This section of the paper describes forward foreign exchange contracts and proposes a draft recommendation regarding their treatment in the balance of payments and the International Investment Position.

64. The BPM5 does not mention forward foreign exchange contracts. In the IMF paper entitled "The statistical measurement of financial derivatives", forward foreign exchange contracts are defined as contracts in which two parties agree to transact a specified amount of foreign currencies at an agreed exchange rate and on an agreed date. The international manuals do not state how they should be handled, although implicitly they are regarded as non-traded forwards. As with other forward contracts, the value of the forward foreign exchange contract at inception is zero, but it acquires value

as market exchange rates change and the interest differential of the two currencies changes. Transactions in forward foreign exchange contracts occur when the contract is exercised. Although the two counterparties have agreed to exchange currencies at an agreed rate in the future, the market rate at expiry will usually be different. Foreign currency must be converted into the unit of account and recorded in the account at the exchange rate prevailing at the time of the transaction. Any difference between the amounts paid and received in the unit of account, using prevailing exchange rates, is allocated to transactions in financial derivatives.

65. For forward foreign exchange contracts, the BOP FFS Task Force recommends that the difference between the amount agreed at the time of the contract and the amount that would be paid at the spot rate prevailing at settlement should be allocated to transactions in financial derivatives. This recommendation is in line with the IMF recommendations contained in the recent IMF Paper entitled "The statistical measurement of financial derivatives" (paragraph 68) and accounting standards for off-balance-sheet instruments for the ESCB/ECB.

66. All the members of the Task Force agree in principle with this recommendation. Some members have pointed out, however, that it may be difficult to follow this recommendation in practice. In settlement systems in which amounts paid are reported, it may be difficult to identify and separate the market price component.

SECTION 7: Embedded derivatives

67. Some financial instruments include derivatives which are embedded within them. These are known as embedded derivatives or embedded options. The SNA93 and the BPM5 recommend that financial derivatives should be treated separately from the underlying transaction to which they may be linked as a hedge. By definition, an embedded derivative has the same two counterparties for both the underlying financial instruments and the financial derivatives. Some would argue therefore that the reasons for identifying and valuing financial derivatives separately do not apply in the case of embedded derivatives.

68. There are strong practical reasons for not identifying and valuing embedded derivatives separately. First, as indicated in the recent IMF paper entitled "The statistical measurement of financial derivatives", it is difficult to identify the embedded derivative itself as the counterparties are the same as for the underlying financial instrument. Second, the value of the financial derivative can not be identified separately. Third, it is practically impossible to identify the payment of the premium associated with the establishment of the embedded derivative. The IMF paper consequently proposes that embedded financial derivatives should not be recorded and valued separately in the National Accounts.

69. While it may theoretically be necessary to differentiate between the derivative element and the underlying security for classification purposes, the practical difficulties must be addressed. The FFS Task Force recommends that embedded financial derivatives should be recorded together with the underlying financial instrument, and not be recorded and valued separately in balance of payments statistics and the International Investment Position (i.e. if a primary instrument, such as a security or a loan, contains an embedded derivative, the instrument should be valued and classified according to its primary function, such as a security or a loan). This is in line with IMF recommendations contained in the recent IMF paper entitled "The statistical measurement of financial derivatives" (paragraph 79) and the ESA95 regulations.

SECTION 8: Credit derivatives

70. Those financial derivatives with the primary purpose of trading credit risk are known as credit derivatives. The types of contracts in question are the same as those involving market risk: option-type and forward-type contracts. Data on credit derivatives are included in the additional data requirements set up by the BIS for the first instalment of regular derivatives market statistics at end-June 1998. The BIS defines credit derivatives as "customised agreements between two counterparties in which the payout is linked primarily to some measure of credit worthiness of a particular reference credit. Contracts specify an exchange of payments in which at least one of the two legs is determined by the performance of the reference credit. Typical credit derivative instruments are credit-spread forwards and options, credit event or default swaps and total return swaps"[2].

71. The IMF paper states that there is no inherent reason why so-called credit derivatives should not be classified as financial derivative assets. The understanding is that these financial derivatives, like those involving market risk, are frequently drawn up under standard legal agreements and involve collateral and margining procedures, a procedure which leads to agreed valuation methods. However, credit derivatives could include arrangements which are on the dividing line between financial derivative instruments and insurance services. The IMF paper therefore suggests that classification depends upon the characteristics of the specific instrument in question.

72. In line with the IMF suggestion in the recent IMF paper entitled "The statistical measurement of financial derivatives" (paragraph 74), the classification of specific instruments of credit derivatives will be decided upon case by case. This could be done within the framework of the Financial Terminology Database. The Sub-group on Financial Derivatives may also wish to discuss this group of financial derivatives. The further monitoring of market developments and practices may be worthwhile as valuation methods become more sophisticated. No detailed breakdown of credit derivatives is intended.

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[2] Additional data requirements for the first instalment of regular derivatives market statistics at end-June 1998, Bank for I

CONCLUSION

73. The financial derivatives market is extremely complex and this is reflected in the difficulties encountered when trying to reach a conclusion about the appropriate treatment of certain instruments in the balance of payments and the International Investment Position. The approval and implementation of the recommendations presented by the BOP FFS Task Force in this report signifies a major step forward in preparing for the collection of data on financial derivatives. These recommendations form the basic fundamentals of the treatment of financial derivatives in the balance of payments and the International Investment Position. As a result, the comparability of data would be improved.

74. Future work on financial derivatives will include further guidance on the treatment of individual instruments. This will be carried out within the framework of the Financial Terminology Database. Valuation issues should also be addressed. Although all the members of the Task Force agree with market valuation in theory, this poses a number of difficulties in practice. Practical aspects of the recording of financial derivatives and the reconciliation of stocks and flows, one of the most difficult aspects of the statistical treatment of derivatives, will be addressed by the Sub-group on Financial Derivatives.

75. Work on financial derivatives, particularly practical issues, will continue. This full report provides a comprehensive overview of the conceptual work carried out by the BOP FFS Task Force.

THE RECORDING OF FINANCIAL DERIVATIVES IN THE BALANCE OF PAYMENTS

OPTIONS AND FUTURES

(background document to the full report on conceptual aspects)

1. In March 1996 the Working Group on Statistics approved the proposed framework for the discussion of financial derivatives. The framework included discussion about the treatment of individual derivative instruments in the balance of payments. Entries for the Financial Terminology Database should be prepared on the basis of this general discussion.

2. The BOP Financial Flows and Stocks Task Force has studied the general characteristics of options (exchange-traded and over-the-counter), warrants and futures (exchange traded only; the paper does not deal with instruments usually interbank with very similar characteristics to futures which appear on the OTC market in some countries) in detail with respect to their recording in the balance of payments. This paper gives a detailed account of the findings and recommendations are put forward.

PART 1 OVERVIEW OF INSTRUMENTS

SECTION 1: General remarks

3. The financial derivatives market is extremely complex and this is reflected in the difficulties encountered when trying to reach a conclusion about the appropriate treatment of certain instruments in the balance of payments. The IMF Manual (5th edition) deals explicitly with only a few types of financial derivatives and, as a result, the appropriate treatment of many other instruments or specific issues is left unresolved. Also, since the IMF Balance of Payments Manual was published, further knowledge of the derivatives market has been acquired which disputes some of the assumptions underlying the recommendations contained in the Manual. Markets and products have also evolved rapidly over the past five years. The conceptual debate, compilers' understanding of markets and instruments and market practice have changed since the IMF texts were first drafted.

4. Owing to the growing significance of and public interest in financial derivatives, their treatment has been discussed within various other international organisations. The results of studies undertaken by other institutions have been taken into consideration to the greatest possible extent while drafting this paper.

5. The BOP FFS Task Force recognises the importance of the reconciliation of flows and stocks for all derivative instruments. This is an extremely difficult area and further investigation will be needed.

SECTION 2: Description of options instruments

6. Options are contracts which give the purchaser of the option the right, but not the obligation, to buy (call option) or to sell (put option) a particular financial instrument or commodity at a predetermined price (the strike price) within a specific time span or on a specific date. There are in fact two types: "European" options, which can be exercised only at the date specified in the contract; and "American" options, which may be exercised at any time. The buyer of the option pays a premium (the option price) to the seller (writer or issuer of the option) in return for the latter's commitment to sell or purchase the specified amount of the underlying instrument or commodity or to provide appropriate remuneration.

7. Options can also be issued in the form of securities known as warrants. There are two basic types of warrants: equity warrants, which are options issued by enterprises entitling the holder to purchase an amount of ordinary shares at a stated price by a specified date; and debt warrants entitle the holder to purchase a security with a specified rate of interest, at a predetermined price and for a specific maturity. A warrant may be issued independently of a bond issue. Both types of warrants can be detached from the bond and traded separately. There is a secondary market for warrants. The treatment of warrants in the balance of payments recommended by the IMF is the same as that for options. Therefore, no specific reference to warrants is made here.

8. There are two main forms of options: 1) Exchange Traded options, which are traded via an exchange and have a standardised form; and 2) over-the-counter options, which are negotiated individually between two counterparties (i.e. a customer and a bank, or two banks). Within each group there are many different types. In addition, there are also securitised options traded on the securities exchange, which are referred to as *warrants*. *This paper deals with the general characteristics and recording issues of both standardised option contracts and over-the-counter options.*

SECTION 3: Description of futures instruments

9. A futures contract is the right to purchase or sell a specified quantity of an asset at a fixed price on a fixed future date. The essential feature of futures contracts is that they standardise the quantity of underlying assets to be delivered per contract (the contract size), the underlying financial instrument

or commodity, the minimum price movement for the contract (the tick size), and the period of the contract. Futures are traded only on the exchange markets.

10. Contracts are normally traded in a cycle for March, June, September and December delivery/settlement. As futures are exchange-traded instruments, the contract obligation is not between the two counterparties to the transaction (the buyer and the seller of the underlying instruments), but each transactor has a contract with the clearing house. The clearing house becomes the buyer to every seller and the seller to every buyer, effectively transferring counterparty credit risk from futures transactions. The creditworthiness of the clearing house is maintained by the setting of margins. A margin is a measure of the risk to any institution which is the counterparty to a contract. A margin has two main components: the initial margin, to provide cover against the risk of future adverse price movements; and the variation margin, to cover actual price movements.

SECTION 4: Availability of data on options and futures

11. *The availability of data on transactions in options and futures differs across the EU Member States.* In many Member States data on these types of transactions are already collected, but in some instances these are recorded under a different item in the balance of payments. Other Member States are in the process of collecting data on these transactions.

12. For options, as stated in the IMF Manual, the premium consists of two elements: the purchase price and the service charge. *The separation of the service charge, as recommended by the IMF, is impossible in almost all Member States.* As pointed out by one Member State, the modified Black-Scholes model, which forms the basis for (individual) option pricing and trading, does not include any service charge (unless the spread on volatility is included). Member States agree that, in practice, it would be very difficult and probably impossible to discern a service element within the premium. **The Task Force concluded that the full premium (i.e. the purchase/sale price of the option and the implied service charge) should be recorded in the Financial Account as the acquisition of a financial asset by the buyer and as the incurring of a liability by the seller for both over-the-counter and exchange-traded options..**

PART 2 RECORDING IN THE BALANCE OF PAYMENTS

SECTION 1: Summary of the recommendations made by the IMF for the treatment of options and futures instruments

13. The Task Force agreed in principle with the recommendations made by the IMF for the treatment of options and futures instruments. The recommendations are listed in Annexes 1 and 2 to this paper. It should be noted, however, that the recommendations made by the IMF were based on

assumptions and that views on those assumptions have since changed, mainly as a result of newly acquired knowledge. Therefore, the recommendations should be seen in this light. The current IMF recommendations contained in the BOP Manual, the BOP Compilation Guide and BOP Textbook are summarised in Annex 1 to this paper. It should be pointed out that the conceptual debate, compilers' understanding of markets and instruments, and market practice have all changed since these texts were drafted.

14. The Task Force encountered difficulties regarding the IMF recommendations for: (i) the separation of the purchase price and the service charge; (ii) the valuation of derivatives contracts; and (iii) the recording of margin payments. The issue of the separation of the purchase price from the service charge is dealt with in paragraph 12. The conclusions drawn on valuation and margin payments are presented below.

SECTION 2: Valuation

15. Member States are faced with practical problems when following the IMF's recommendation to apply the market value for the recording of *flows and stocks* in derivatives contracts.

(i) Valuation of transactions in derivatives contracts

16. The value of an option depends on: (i) the difference between the strike price and the value of the underlying asset; (ii) current interest rates; (iii) the volatility of the price of the underlying asset; and (iv) the time remaining to expiration affecting the expected future volatility of the price of the underlying asset.

17. At the EMU (and global) level asymmetric reporting may arise as a result of different practices in the books of the two counterparties. It is standard practice for contracts within a trading portfolio to be "marked-to-market" for valuation on the balance sheet. Contracts entered into for hedging purposes are normally valued in the same way as the primary instrument against which the derivative is hedged (usually on an accruals basis). However, *convergence* towards "marked-to-market" valuation seems to be taking place.

(ii) Valuation of the underlying instruments in the event of delivery (on a market basis)

18. In the event of delivery of the underlying securities in an options or futures contract, the underlying instruments should be valued on a market basis. This is difficult, in particular in Member States where data collection is based on a settlement system. In such cases, the actual value of the transactions is measured. Information on the market value of the underlying instruments may not be readily available. A number of Member States indicated that they agreed with the conceptual

recommendations regarding valuation, but would have difficulty in following them. Solutions to this problem or an estimation of discrepancies still have to be investigated.

(iii) Valuation of stocks

19. The problems encountered in performing the valuation of stocks are similar to those related to the valuation of flows. The IMF Informal Group on Financial Derivatives addressed the issue of stocks. The outcome of its discussion was as follows:

> *"Participants shared their experiences of measuring position data. It was found that, in general, there were not any serious problems in gathering data from banks on a market value basis. However, several participants experienced difficulty in obtaining data on a residency basis or by domestic sector. Extensive market value information was collected by means of the BIS survey of market activity conducted in spring 1995 among twenty-six participating countries."*

The availability of data on a residency basis is, of course, of critical importance for the balance of payments and International Investment Position.

SECTION 3: Margin payments associated with options and futures

20. With regard to *margin payments* associated with options and futures, although the IMF previously recommended that all margin payments should be recorded under "deposits" in Other Investment, opinions continue to evolve (see paragraphs 22 and 23). The members of the Task Force recommended a more differentiated approach. Different types of margins can be distinguished, i.e. *initial* margin payments and *variation* margin payments. Initial margin payments are very similar to deposits. Variation payments, on the other hand, represent the realisation of likely holding gains and losses. There is no change in the ownership of initial margin payments, but there may be a change in the ownership of variation payments.

21. An investigation was carried out by the Bank of England into the different margining systems operating in the United Kingdom and the statistical implications of the systems. The London Clearing House is the counterpart to all exchange trading in the United Kingdom. The clearing house charges an initial margin for all contracts. This initial margin covers the largest potential loss for the contract, given the risk parameters employed by the house, and is held as a deposit (or by posting collateral) for the duration of the contract and returned when the contract expires. The treatment of variation margining on UK exchange trades depends on the individual contract types. Individual equity and index options traded in the United Kingdom use "options-style" variation margining. All other futures and options use "futures-style" variation margining. With futures-style variation margining, the premium is not paid up front but gradually over the life of the option and is incorporated in the daily variation margin payment. This amount is collected by the clearing house from one party and

simultaneously paid to the other party and provides the means for effecting a change in ownership. Profits and losses are, therefore, made on a daily basis and the value of the contracts is returned to zero. Under options-style margining the writer posts margins to the clearing house in the form of cash, Treasury bills, or a bank letter of credit. The clearing house retains this margin until the options are exercised or until they expire. Thus profits or losses under options-style margining only become material BOP flows between residents and non-residents at the conclusion of the contract. For over-the-counter derivatives, the variation margining when it occurs normally operates in a similar way to options-style exchange traded variation margining. Ownership is transferred at the conclusion of the contract, if at all.

Over-the-counter contracts

Over-the-counter margining operates in a similar way to options-style margining with such payments (usually cash) held "on deposit" until the conclusion of the contract.

22. The issue was also discussed by the IMF Informal Group on Financial Derivatives. The outcome of the discussion was as follows:

> *"The Group reviewed the margining arrangements in national markets and concluded that, although these operations are complex and differ widely among countries,* ***the international standards are flexible enough to cover the different market practices.*** *However, the classification of margin payments was questioned by a number of participants. In particular, the inclusion of margin payments in deposits was seen as a problem because of market practices and the potential impact on the monetary aggregates. The Group recommended that the treatment of margins be reviewed after the EMI review of margining arrangements in Europe is completed."*

23. Most recently, the IMF Expert Group on Monetary and Financial Statistics addressed the treatment of margins at its meeting on 11-15 November 1996. As reflected in the paper "Final summary of conclusions and recommendations", the conclusions were as follows:

> *"The group agreed that in principle initial margins that were repayable should not be classified as derivatives. The nature of these positions was similar to deposits, but some speakers preferred to classify them as other receivables/payables as they restricted the use of the deposit category to monetary liabilities. It was also agreed that variation margin payments that give rise to change in ownership should be treated as transactions in derivatives."*

24. In co-operation with the IMF, an in-depth investigation was carried out by the Task Force into the institutional arrangements of margins in the Member States. A summary of the findings is presented in a separate document. The conclusions drawn from the investigation are the following:

(i) Agreement that there are, in principle two distinct types of margining: "initial margining" and "variation margining" and that the practical administration of variation margining can take two forms, "options-style" and "futures-style".

(ii) In most Member States the form of margining is the same for all contracts, regardless of the underlying instrument. In a few Member States the form of margining depends on either the contract type and/or the settlement medium. These forms of variation margining do not always appear in the market of a Member State.

25. Considering the results of the investigation, the following recommendation for the recording of margin payments in the balance of payments is proposed:

> **"In principle, initial margin payments should be regarded as changes in deposits and be recorded, where identifiable, under Other Investment, Other Payables/Receivables. In addition, options-style variation margins should be regarded, in principle, as changes in deposits and should be recorded, where identifiable, under Other Investment, Other Payables/Receivables. Futures-style variation margin payments should be regarded, in principle, as transactions in derivatives and be should recorded under Financial Derivatives. Member States are encouraged to follow this recommendation.**
>
> **In those Member States where it is impossible, at present, to make a distinction, it may be possible to estimate the futures-style variation margin payment. Consideration could also be given to reporting the margin payments under a separate item until the recommended treatment is implemented."**

26. All the members of the Task Force agree, in theory with this recommendation. In view of harmonised treatment, the proposal regarding the recording of margin payments will be presented to the members of the Money and Banking Task Force for their approval.

27. The practical implementation of this recommendation may be difficult in some Member States. The Task Force has found that this recommendation can be followed relatively easily for transactions in derivatives carried out by banks on their own behalf. For transactions in derivatives carried out by banks on behalf of their customers, this recommendation is difficult to follow. It is proposed that issues relating to the practical implementation of this proposal should be studied in more detail. At present only in a minority of Member States is the distinction made and is it possible to detect a change in ownership. A few Member States are in the process of introducing either new statistical regulations or new accounting rules to accommodate this distinction.

ANNEX 1 SUMMARY OF IMF RECOMMENDATIONS FOR THE TREATMENT OF OPTIONS INSTRUMENTS

This annex quotes the current recommendations for the treatment of options in the balance of payments contained in the IMF Manual (5th edition), the IMF Compilation Guide and the IMF Textbook.

WARNING: The conceptual debate, compilers' understanding of markets and instruments, and market practice have all changed since the quoted texts were drafted, as reflected in the main part of the document.

IMF Manual

> *"The premium consists of two elements: the purchase price of a financial asset and a service charge. These should be distinguished from one another. The service charge should be recorded under financial services (Current Account). The purchase price should be recorded in the Financial Account. If the two elements cannot be distinguished separately, the full premium should be recorded as the acquisition of a financial asset by the buyer and as the incurring of a liability by the seller (Financial Account)"* (paragraph 401).

The various transactions in options are to be recorded in the balance of payments as follows:

- Issue of options

  "Should be recorded in the Financial Account" (paragraph 401).

- Trading of options

  "Should be recorded in the Financial Account" (paragraph 402).

- Exercise of an option: delivery of the underlying asset

  "The acquisition or sale of the underlying financial asset should be recorded at the prevailing market rate in the appropriate balance of payments component (Financial Account). Offsetting this entry would be the actual amount payable or receivable. The difference between that amount and the prevailing market rate is reflected in an entry that extinguishes the option contract (Financial Account, Financial Derivatives)." (paragraph 402).

- Exercise of an option: settlement in cash

  "The cash settlement should be recorded under Financial Derivatives in Portfolio Investment" (paragraph 402).

- Expiration of options

No transactions should be recorded in the balance of payments.

> *"When initial margins and subsequent increases or decreases are payable by the parties (variation payments), the payments should be recorded as both assets and liabilities in the Financial Account under Other Investment Currency and Deposits. Payments into and withdrawals from these accounts may sometimes be reflected in transactions in traded options to which these accounts relate and, if so, should be recorded under option transactions in the Financial Account"* (paragraph 402).

- Valuation of options

  "Transactions in Portfolio Investment items are entered at market prices" (paragraph 409).

IMF Compilation Guide

(i) Flows

An example is included which should help to explain the treatment of options in the balance of payments. An extensive list of transactions is associated with options and the treatment of such transactions in the balance of payments is also presented.

(ii) Stocks (paragraph 751)

> *"For the International Investment Position (IIP), options should be valued on the basis of market prices prevailing on the dates on which the IIP statement is prepared. If no market exists for a particular type of option, market value can be approximated by using a financial formula known as the Black-Scholes formula. Most organisations with significant options operations use this or a similar formula to value their positions. Therefore, in practice, the compiler should accept the valuation of option positions provided by principals unless there is some serious doubt as to their validity in terms of market valuation principles"* (paragraph 751).

IMF Textbook (March 1995 draft)

The IMF Textbook contains two tables which provide an overview of the terminology associated with options and show the factors which determine the value of an option. These factors are: the difference between the strike price and the value of the underlying asset; the current interest rate; the volatility of the price of the underlying asset; and the time remaining to expiration. Examples on the treatment for these transactions in the balance of payments are included.

ANNEX 2 SUMMARY OF IMF RECOMMENDATIONS FOR THE TREATMENT OF FUTURES INSTRUMENTS

This annex quotes the current recommendations for the treatment of futures in the balance of payments contained in the IMF Manual (5th edition), the IMF Compilation Guide and the IMF Textbook.

WARNING: The conceptual debate, compilers' understanding of markets and instruments, and market practice have all changed since these quoted texts were drafted, as reflected in the main part of the document.

IMF Manual

> *"A futures contract is an agreement between two parties to exchange a real asset for a financial asset, or to exchange two financial assets on a specified date and at a predetermined rate. Traded financial futures, including those for interest rates, currencies, commodities, equities or other indices, are recorded in the Financial Account in a similar manner to options. Transactions associated with non-traded financial futures are likely to occur infrequently and are recorded under other assets or other liabilities components of Other Investment"* (paragraph 407).

IMF Compilation Guide

(i) Flows

- *"The fees paid to financial intermediaries to establish a futures contract (like all derivatives contracts) should be classified as financial services and be recorded in the services component of the Current Account"* (paragraph 753).
- *"Margin payments should be reflected in the Currency and Deposits item of Other Investment in the Financial Account"* (paragraph 754).

(ii) Stocks

"In the International Investment Position futures, like all financial derivatives except for options, should be valued by reference to market prices of similar instruments. If derivatives being valued are traded infrequently, they could be valued by calculating the Net Present Value (NPV) of future payments and receipts expected under the contract. If the NPV of futures transactions is positive, the derivatives contract should be shown as an asset. On the other hand, if net payments are expected, the contract should be shown

as a liability. Enterprises with significant positions in derivatives contracts will probably value their derivatives positions in a similar way" (paragraph 759).

IMF Textbook

"The transactions that should be recorded against derivative instruments include any trading in the futures contract and the net value of settlements made. No entry is required in the Balance of Payments when, establishing a futures contract, no payment is made by one party to the other. In these cases, the value of the transaction establishing the contract is nil" (page 293).

THE RECORDING OF FINANCIAL DERIVATIVES IN THE BALANCE OF PAYMENTS

INTEREST RATE INSTRUMENTS: SWAPS AND FRA's
(background document to the full report on conceptual aspects)

1. This paper sets out the general framework for the treatment of interest rate derivative instruments (in particular swaps and forward rate agreements (FRAs)) in the balance of payments. On the basis of the discussions to be held subsequently within the Task Force, the exact treatment of the different types of swaps and FRAs will be established and entered into the Financial Terminology Database.

2. Other international forums such as the IMF and the BIS are also currently addressing statistical aspects of interest rate derivative instruments. The IMF is addressing the treatment of these instruments in the various statistical accounts and the BIS is focusing on data collection for financial derivatives. The recent BIS report entitled "Central Bank Monitoring of Derivatives Market Activity: Report of the Yoshikine Group" (prepared by the Bank for International Settlements, Basle, July 1996) states that a third of notional amounts outstanding of foreign exchange contracts and single currency interest rate contracts are cross-border arrangements. According to the BIS report, this "points to the need for international co-ordination in the formulation of derivatives reporting systems" (page 17). This paper by the BOP FFS Task Force takes these ongoing discussions into account.

3. This paper is structured as follows: Part 1 sets out a general description of interest rate derivative instruments, i.e. swaps and forward rate agreements; Part 2 provides a summary of the current IMF recommendations for the treatment of these instruments in balance of payments statistics and International Investment Position (IIP) statistics; and Part 3 presents the points of discussion with regard to the current IMF recommendations. These points pertain to the classification of net streams of settlement flows associated with interest rate derivative instruments and the recording of positions of these instruments. Part 4 provides proposals for the treatment of interest rate derivative instruments in balance of payments and IIP data.

PART 1 DESCRIPTION OF INTEREST RATE DERIVATIVE INSTRUMENTS: SWAPS AND FRAs

SECTION 1: Swaps

4. Swaps are contractual arrangements between two parties who agree to exchange sets of cash flows for the same amount of indebtedness over time (which may be leveraged, but not necessarily). Two common and generic forms of swaps are: *cross-currency interest rate swaps (CCIRS)* and *cross-currency swaps*. A wide range of variations (e.g. swaptions, asset swaps, callable swaps, etc.) are available, which are tailored to meet specific needs regarding terms, conditions and the basis for calculations.

Iinterest rate swaps

5. Interest rate swaps are contractual agreements between two parties to exchange a sets of cash flows for a stated period of time, which are usually computed on the same notional principal amount and in the same currency using different interest rates. Leveraged deals are not unknown. This enables an institution to change the nature and cost of its borrowings

Important characteristics are:

- only payments resembling or corresponding to the interest payments on a notional amount are exchanged;
- the payments can be fixed for floating or floating for floating based on different indices;
- the swap has a specified notional amount and maturity and is in the same currency;
- when a swap is undertaken, interest payments are netted.

Cross-currency interest rate swaps

6. Cross-currency interest rate swaps (CCIRS) are contracts under which two counterparties undertake to exchange streams of payments related to fixed or floating interest rates in different currencies for an agreed period of time and to exchange principal amounts in different currencies at an agreed exchange rate at the end of the period. The payments are based on notional principal amounts which are fixed at the initiation of the swap. The exchange of principal may or may not take place. The risk is considered to be greater for cross-currency swaps than for interest rate swaps owing to the additional currency risk exposure. This has an impact on interest payments and the repayment of the principal.

7. These CCIRS are slightly a different instrument from those traded within the foreign exchange market which involve the sale of one currency for another against its simultaneous purchase in the

forward market. In the foreign exchange currency swaps, no periodic payments relating to interest are made, but the interest rate differential between the currencies is reflected in a premium or discount to the forward exchange rate.

Development of market practice

8. End-users use both interest rate and cross-currency swaps to reshape the exposure to both interest rates and exchange rates. There may be an intermediary, often a bank, which may charge a fee or, more often, take a spread on the rates in the swap. A "back-to-back" swap is created when a third party, usually a bank, is "inserted" between the two borrowers to act as an intermediary. According to recent studies, it is rare for both parties to a contract to be end-users. End-users usually enter a contract with a financial institution which, in turn, may hedge part or all of the resulting position elsewhere in the market. The BIS survey of derivatives markets revealed that in the global swap market the participation of banks and securities dealers is very significant in terms of positions and turnover. According to the BIS survey, 59% of the positions, in notional terms, of the interest rate swaps (which are the most important) are held by banks and securities dealers. Thus, swaps business is undertaken increasingly between dealers and in isolation from the issuance or receipts of credit.

SECTION 2: Forward rate agreements

9. A forward rate agreement (FRA) is an agreement between two parties to fix the interest rate to be paid on a notional deposit with a specified maturity on an agreed future date (usually within twelve months). On that date, the seller pays the buyer if rates have risen above the contracted rate and, conversely, the buyer pays the seller if rates have fallen. If the market rate on the settlement date matches the FRA rate, no payment is required. The commitment is limited to the amount which becomes due on settlement for the difference between the contracted rate of interest and the current market rate. FRAs are traded over the counter.

10. A FRA contract will specify the following:

- the notional principal, which will not be exchanged, but which will serve as the basis for calculating the interest. There is no payment or premium for an FRA, only a settlement amount;
- period covered;
- interest rate, i.e. the forward rate;
- benchmark, e.g. LIBOR etc.

PART 2 SUMMARY OF CURRENT IMF RECOMMENDATIONS

11. The current "official" IMF recommendations for the BOP treatment of swaps and FRA's are summarised below. The current recommendations are being reconsidered at present and the reasons for this are presented in Part 3.

SECTION 1: Recommendations in the IMF Manual

(i) Swaps:

> *"A swap is a contractual arrangement involving two parties who agree to exchange, over time and according to predetermined rules, streams of payments on the same amount of indebtedness. The two prevalent varieties of swaps are interest rate swaps and currency swaps. An interest rate swap involves an exchange of interest payments of different character (e.g. fixed and floating rate, two different floating rates, fixed rate in one currency and floating rate in another, etc.). A currency swap involves an exchange of specified amounts denominated in two different currencies and subsequent repayments reflecting principal and/or interest.*
> *Balance of payments entries for streams of interest payments associated with swap transactions are recorded, on a net basis, in the current account, and streams of principal repayments are recorded in the financial account. Although neither party to a swap arrangement is considered to be the provider of a service to the other, any payments to a third party involved in arranging the swap are recorded under financial services"* (paragraphs 405 and 406).

(ii) FRAs

> *"The payments (associated with FRA's) are recorded as interest income in the current account of the balance of payments. Because there is only a notional (not an actual) underlying asset, there are no entries in the Financial Account"* (paragraph 408).

SECTION 2: Recommendations in the IMF Compilation Guide

(i) Swaps

The IMF Manual's recommendations are also reflected in the IMF Compilation Guide. In addition, an example is given for the recording of currency swaps in the balance of payments

> *"an enterprise in country X enters into a currency swap with an enterprise in country Y. No money changes hands at the beginning of the contract. In six months, because of favourable movements in the exchange rates, the enterprise in country X receives a net settlement from the swap partner in country Y"* (paragraphs 757-759 inclusive).

12. In the International Investment Position, swaps should be valued at market prices.

(ii) FRAs

> *"FRAs and associated settlement payments should be recorded in the investment income account of the current account"* (paragraph 752)

13. The IMF Compilation Guide recommends that transactions in derivatives contracts should be recorded separately from any transactions involving the position that is being hedged. Were this not the case, serious asymmetries could arise in the recording of BOP transactions and distortions could occur in the analysis of BOP items.

SECTION 3: Rationale behind the current IMF recommendations

14. The rationale behind the current IMF (and SNA) recommendations is that interest rate swaps and FRAs are not seen as financial derivatives assets in their own right. The *tradability* of these instruments is a key criterion to determine whether instruments fall within the financial assets boundary. The SNA would treat instruments as a financial assets if they had value and were tradable. Tradability is a sufficient condition to demonstrate value but not a necessary condition. The European System of Accounts (ESA 1995) takes a broader view on this issue. It states that:

> *"Only those secondary instruments, which have market value because they are tradable or can be offset on the market, are financial assets in the system"* (paragraph 5.66.).

15. Swaps are considered as financial derivatives in the ESA 1995. The ESA 1995 states that the financial derivatives category includes swaps *"only if they have a market value because they are tradable or can be offset"* (paragraph 5.67.(d)).

PART 3 POINTS OF DISCUSSION

16. There are three issues for discussion regarding interest rate derivatives: (i) the classification of net streams of settlement flows/payments associated with interest rate derivatives; (ii) the recording of positions in swaps (and all other derivative instruments which may "flip" from asset to liability and vice versa); and (iii) valuation. A summary of the discussion is presented below.

SECTION 1: Classification of settlement flows

17. The issue of the classification of net streams of settlement flows has been raised within various international forums, including the meeting of the ad hoc IMF Expert Group on Monetary and Financial Statistics. Papers were produced on this question: "Measuring Financial Derivatives in the National Accounts (October 1994)" by Mr. C. B. Wright from the Bank of England; "Financial Derivatives, Conceptual Issues (October 1995)" by the International Monetary Fund; and "The

Classification of Interest Rate Swaps and Forward Rate Agreements within the Balance of Payments and National Accounts" by the Australian Bureau of Statistics, the Deutsche Bundesbank and the Bank of England. Please refer to the individual papers for details (copies have been distributed).

18. The latter paper recommends that current international standards should be changed. The classification of net streams of settlement flows in the Current Account is questioned for conceptual, analytical and practical reasons. It is argued that all transactions in financial derivatives should be recorded in the Financial Account and, conversely, that no transactions in financial derivatives should be recorded as property income flows. It is widely accepted and the authors also endorse the view that interest rate swaps and cross-currency interest rate swaps have a market value in practice and should, therefore, be regarded as financial assets/liabilities within the national accounts and the balance of payments. The complexity and sophistication of these inter-dealers' positions primarily account both for the apparent scale of the global market and for the growth in cross-border settlement flows. Precisely this has led to the present situation in which current international standards are being re-examined and challenged.

19. The conceptual reason for the change is a critique of the cost of capital principle which underpins the current IMF recommendations. Interest is defined as one form of property income (i.e. the return on the use of capital). However, interest rate swaps do not provide any capital at their inception and, although cross-currency interest rate swaps notionally involve the exchange of principal amounts at the outset, no credit is provided.

20. Swaps may sometimes be used to change the cost of capital, but they are increasingly held and traded for other purposes. The expansion of inter-dealers' business and the associated decline in the proportion of trades directly involving end-users have broken the link between settlement payments and the cost of borrowing. For financial intermediaries the holding of derivatives contracts is not associated with the provision or receipt of finance; it is simply the acquisition of a financial asset/liability for which the return will come in the form of trading gains and losses. Swaps, like various other financial derivatives, do not themselves involve the provision of capital at the time the instrument is created.

21. Another argument in favour of the change is to ensure consistency of treatment compared with other derivative interest rate products when assessing the use of the resulting data and their quality. Another advantage is that the new treatment will enable the analysis of Current Account data to improve as a result of the removal of a large erratic item. The inclusion of the settlements of interest rate swaps and cross-currency interest rate swaps as income may distort the balance of payments Current Account given the significant impact of interest rate swaps on balance of payments statistics.

22. These considerations were also discussed at the meeting of the IMF Expert Group on Monetary and Financial Statistics on 11-15 November 1996. The conclusion of this discussion is reflected in the document entitled "Final Statement of Conclusions and Recommendations" (distributed to members of the Task Force):

> *"A great majority of speakers supported changing the SNA/BPM recommendation that settlement payments on interest rate derivatives should be recorded as interest to record these flows as transactions in derivatives. No speaker advocated that the current recommendations should be retained, but one indicated that there was still some uncertainty in his country as to the appropriate treatment. As the strength of views favouring change was stronger than expressed at the recent meeting of the Balance of Payments Committee, the Fund would place this issue on the agenda of the proposed informal meeting of experts. It was recognised that no change could be made officially in the SNA without the concurrence of the Intersecretariat Working Group on National Accounts.* ***However, as the clear view of the experts was running in favour of the change, countries that needed to make decisions in the near future in order to design surveys could introduce plans for implementation".***

23. The majority of Member States are in favour of recording the settlement flows associated with interest rate derivatives as transactions in financial derivatives. This would, however, affect the size of GDP and GNP and some of the Member States concerned would prefer to consult the GNP Committee on this matter. The Task Force agreed that the recommendations were flexible enough to accommodate the specific conditions on the capital markets in the different Member States. The Task Force also acknowledged that effecting the corresponding change to the ESA 95 would be a lengthy and problematic procedure.

SECTION 2: Recording of positions in swaps and FRAs

24. The recording of positions of swaps and FRAs in the IIP is closely related to their classification in the balance of payments. While these agreements are commonly established without the payment of a premium, market conditions do change and a contract will gain value for one party and become a liability for another. The value of a financial derivatives contract is derived from the difference between the agreed contract price and the prevailing market price, or that expected to be prevailing, which is discounted accordingly. Hence, the relationship between the agreed contract price and the prevailing market price is a crucial element in the valuation of the financial derivatives contract. If the agreed contract price and the prevailing market price are the same, the derivatives contract has no value. If the contract price and the prevailing market price differ, the derivatives contract does have a value, which can "flip" to being positive or negative at various points along the life of the contract. The implications of these flips for the classification of the point-in-time valuations according to assets and liabilities need to be fully examined..

SECTION 3: Valuation

25. In principle, swaps should be valued at market prices. The valuation of swaps at market prices is applied as far as possible by Member States. In some Member States there is a convergence towards valuation on a marked-to-market basis. However, swaps held on the banking book (usually for hedging, and always to maturity) are not often marked-to-market. In Member States where data are collected via a ticket system, a swap arrangement may be difficult to detect or identify separately. In a ticket system the valuation may also be based on real payments flows.

PART 4 PROPOSALS FOR THE BOP TREATMENT OF INTEREST RATE DERIVATIVE INSTRUMENTS

26. The Task Force discussed three issues regarding interest rate derivatives (i.e. swaps and FRAs): (i) the classification of net streams of settlement flows/payments associated with interest rate derivatives; (ii) the recording of positions in swaps and FRAs; and (iii) valuation. This document provides an overview of the discussion. The conclusions regarding these three issues are the following:

(i) **The net stream of settlement flows associated with interest rate derivatives should be recorded as Financial Derivatives in the Portfolio Investment Account. Transactions in interest rate derivatives, i.e. swaps (all transactions in interest rate swaps and the interest rate element of cross-currency swaps) and FRAs should be recorded under Financial derivatives in the Portfolio Investment Account.**

(ii) **The Task Force recognised that a swap and FRA transaction could give rise to a "position" vis-à-vis a non-resident.** As swaps and FRA arrangements are examples of derivative instruments which tend to "flip" from being assets to liabilities, and vice versa, the Task Force acknowledges the need to further examine this phenomenon and its implications for the International Investment Position and balance of payments.

(ii) In principle swaps should be valued at market prices. This is performed by Member States as far as possible. There are some practical difficulties in the application of market prices.

27. The reasons behind these proposals are:

(i) the substitutability/"offsetability" of these instruments;
(ii) improved analytical content of statistics;
(iii) consistency of the treatment of derivative instruments in all statistics;

THE RECORDING OF FINANCIAL DERIVATIVES IN THE BALANCE OF PAYMENTS

COMMODITY AND EQUITY (INDEX) SWAPS; FORWARD FOREIGN EXCHANGE CONTRACTS; EMBEDDED DERIVATIVES AND CREDIT DERIVATIVES

(background document to the full report on conceptual aspects)

1. In March 1996 the Working Group on Statistics (WGS) approved the proposed framework for the discussion of financial derivatives. The framework included discussion about the treatment of individual derivative instruments in the balance of payments and the International Investment Position. Entries for the Financial Terminology Database should be prepared on the basis of this general discussion. In April 1997 the BOP Financial Flows and Stocks (FFS) Task Force presented a progress report to the WGS entitled "Options, futures and interest rate derivatives; the recording of financial derivatives in the balance of payments and the International Investment Position".

2. In this paper the FFS Task Force deals with the basic recording principles of the remaining groups of derivative instruments in the balance of payments and the International Investment Position. It intends to present a full report to the WGS in October 1997 addressing all aspects of the recording of financial derivatives in balance of payments statistics and the International Investment Position.

3. This paper is intended to conclude the conceptual discussions on financial derivatives within the FFS Task Force and deals with the remaining groups of derivative instruments. Use has been made of recommendations made in the 5th edition of the IMF Balance of Payments Manual (BPM5), the IMF Textbook and the IMF Compilation Guide. Extensive reference is made to the recent IMF paper entitled "The statistical measurements of financial derivatives" (April 1997). Reference is also made to the BIS Reporting Forms for the Regular Derivatives Market Statistics (May 1997). In addition, accounting standards for the ESCB/ECB have been taken into account as far as they have been set to date[1]. A draft recommendation on the treatment of derivatives in the balance of payments is given for each group of derivative instruments.

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[1] "Accounting for off-balance sheet and repo instruments by the ESCB/ECB - Report to the Council of the European Monetary Institute" EMI Working Group on Accounting Issues, July 1997.

PART 1 SWAPS

4. The progress report to the WGS addressed the recording of interest rate swaps and the interest rate element of cross-currency swaps. A wide range of variations are available in the market which are tailored to meet specific needs regarding terms, conditions and the basis for calculations. These variations will all be included in the Financial Terminology Database. In this paper two other groups of swap instruments are described: commodity swaps and equity (index) swaps. All swaps should be recorded under Financial Derivatives in the Portfolio Investment Account.

SECTION 1: Commodity swaps

5. Commodity swaps are contracts with one or both payments linked to the performance of a commodity price or a commodity index. These contracts can involve the exchange of the return on one commodity or commodity index for another, or the exchange of a commodity or commodity index for a floating or fixed interest rate (see the BIS Reporting Forms for the Regular Derivatives Market Statistics).

6. It is recommended that commodity swaps should be recorded under Financial Derivatives in the Portfolio Investment Account of the balance of payments and, accordingly in the International Investment Position as these instruments may acquire value.

SECTION 2: Equity (index) swaps

7. Equity (index) swaps are contracts in which one or both payments are linked to the performance of equities or an equity index. They can involve the exchange of one equity or equity index return for another or the exchange of an equity index return for a floating or fixed interest rate (see the BIS Reporting Forms for the Regular Derivatives Market Statistics).

8. It is recommended that equity (index) swaps should be recorded under Financial Derivatives in the Portfolio Investment Account of the balance of payments and, accordingly in the International Investment Position as these instruments may acquire value.

PART 2 FORWARD FOREIGN EXCHANGE CONTRACTS

9. In this part of the paper forward foreign exchange contracts are described and a draft recommendation regarding their treatment in the balance of payments and the International Investment Position is proposed.

IMF Balance of Payments Manual (5th edition) (BPM5)

10. The IMF BPM5 does not mention forward foreign exchange contracts.

IMF paper "The statistical measurement of financial derivatives"

11. Forward foreign exchange contracts are contracts in which two parties agree to transact a specified amount of foreign currencies at an agreed exchange rate and an agreed date. The international manuals do not state how they should be handled, although implicitly they are regarded as non-tradable. As with other forward contracts, the value of the forward foreign exchange contract at inception is typically zero but it acquires value as market exchange rates and the interest differential between the two currencies change. Transactions in forward foreign exchange contracts occur when the contract is exercised. Even if the two counterparties have agreed to exchange currencies at an agreed rate in the future, the market rate at the time of expiry will usually be different. Foreign currency must be converted into the unit of account and recorded in the account at the exchange rate prevailing at the time of the transaction. Any difference between the amounts paid and received in the unit of account, using prevailing exchange rates, is allocated to transactions in financial derivatives.

FFS Task Force draft recommendation

12. For forward foreign exchange contracts the difference between the amount paid at the contract date and the amount that would be paid at the spot rate prevailing at settlement should be allocated to transactions in financial derivatives. This suggestion is in line with current IMF recommendations (paragraph 68 of the recent IMF paper) and accounting standards for off-balance sheet instruments for the ESCB/ECB. Similarly, these contracts may acquire value and should be recorded in the International Investment Position.

13. All the members of the Task Force agree in principle with this recommendation. Some members have pointed out, however, that it may be difficult to follow this recommendation in practice. In settlement systems in which amounts paid are reported, it may be difficult to identify and separate the market price component.

PART 3 OTHER INSTRUMENTS

SECTION 1: Embedded derivatives

14. Some financial instruments include derivatives which are embedded within them. These are known as embedded derivatives or embedded options. The 1993 SNA and the BPM5 recommend that

financial derivatives should be treated separately from the underlying transaction to which they may be linked as a hedge. By definition, an embedded derivative has the same two counterparties for both the underlying financial instruments and the financial derivatives. Some would, therefore, argue that the reasons for identifying and valuing financial derivatives separately do not apply in the case of embedded derivatives.

15. There are strong practical reasons for not identifying and valuing embedded derivatives separately. First, as indicated in the IMF paper referred to in Section 3 above, it is difficult to identify the embedded derivative itself as the counterparties are the same as for the underlying financial instrument. Second, the value of the financial derivative can not be identified separately. Third, it is practically impossible to identify the payment of the premium associated with the establishment of the embedded derivative. In the IMF paper it is consequently proposed that embedded financial derivatives should not be recorded and valued separately in National Accounts.

FFS Task Force draft recommendation

16. While it may theoretically be necessary to differentiate between the derivative element and the underlying security for classification purposes, the practical difficulties must be recognised. The FFS Task Force recommends that embedded financial derivatives should be recorded together with the underlying financial instrument and not recorded and valued separately in balance of payments statistics and the International Investment Position, i.e. if a primary instrument (such as a security or a loan) contains an embedded derivative, the instrument should be valued and classified according to its primary function, for instance as a security or a loan. This is in line with current IMF recommendations (paragraph 79 of the recent IMF paper) and with the guidelines of ESA95 (e.g. paragraph 5.62.e).

SECTION 2: Credit derivatives

17. Those financial derivatives with the primary purpose of trading credit risk are known as credit derivatives. The types of contracts in question are the same as those involving market risk: option-type and forward-type contracts. Data on credit derivatives are included in the additional data requirements of the BIS for the first instalment of regular derivatives market statistics at end-June 1998. The BIS defines credit derivatives as "customised agreements between two counterparties in which the payout is linked primarily to some measure of credit worthiness of a particular reference credit. Contracts specify an exchange of payments in which at least one of the two legs is determined

by the performance of the reference credit. Typical credit derivative instruments are credit spread forwards and options, credit event of default swaps and total return swaps".[2]

18. The IMF paper states that there is no inherent reason preventing so-called credit derivatives from being classified as financial derivative assets. The understanding is that these financial derivatives, like those involving market risk, are frequently drawn up under standard legal agreements and involve collateral and margining procedures, a procedure which leads towards agreed methods of valuation. However, credit derivatives could include arrangements which are on the dividing line between financial derivative instruments and insurance services. The IMF therefore suggests that classification depends upon the characteristics of the specific instrument in question.

FFS Task Force draft recommendation

19. In principle, it is preferred by some members of the the Task Force to regard all credit derivatives as financial derivatives, but following the IMF suggestion (paragraph 74 of the recent IMF paper) the classification of specific instruments of credit derivatives will be decided upon case by case. This could be done within the framework of the Financial Terminology Database. The Sub-group on Financial Derivatives may also wish to discuss this group of financial derivatives. It may be worthwhile for market developments and practices to be monitored further as valuation methods become more sophisticated. No detailed breakdown of credit derivatives is intended.

PART 4 CONCLUSIONS

20. These recommendations as formulated by the BOP FFS Task Force on the treatment of commodity and equity (index) swaps, forward foreign exchange contracts, embedded derivatives and credit derivatives are in line with both the proposal made by the IMF in the paper entitled "The statistical treatment of financial derivatives" and ESA95 guidelines. The recommendations are also compatible with the accounting standards for off-balance sheet instruments for the ESCB/ECB.

21. The recommendations formulated by the FFS Task Force on the treatment within the balance of payments can be summarised as follows:

Commodity swaps:	To be recorded under Financial Derivatives in the Portfolio Investment Account of the balance of payments and International Investment Position;

[2] Additional data requirements for the first instalment of the regular derivatives market statistics at end-June 1998, Bank for International Settlements, May 1997.

Equity (index) swaps:	To be recorded under Financial Derivatives in the Portfolio Investment Account of the balance of payments and International Investment Position;
Forward foreign exchange contracts:	The difference between the amount paid at the contract date and the amount that would be paid at the spot rate prevailing at settlement should be allocated to transactions in Financial Derivatives and accordingly be recorded in the International Investment Position;
Embedded derivatives:	To be recorded together with the underlying financial instrument and not be recorded and valued separately in balance of payments statistics and the International Investment Position;
Credit derivatives:	Classification of specific instruments of credit derivatives will be decided upon case by-case.

22. A full report on the treatment of financial derivatives in the balance of payments and the International Investment Position is to be presented to the Working Group on Statistics in October 1997. The full report will summarise the findings and recommendations of the Task Force concerning the basic principles of the recording of derivative instruments in the balance of payments and the International Investment Position. The paper will also include an evaluation of data availability in Member States, an assessment of the work to be carried out by the Sub-group on Financial Derivatives with regard to the practical aspects of the recording of financial derivatives, the work conducted within the framework of the Financial Terminology Database and co-ordination with other international institutions, in particular the IMF.

FINAL REPORT BY SUB-GROUP 5 ON "FINANCIAL DERIVATIVES"

PRACTICAL ASPECTS

(endorsed by the BOP Financial Flows and Stocks Task Force in March 1998 and approved by the Working Group on Statistics in April 1998)

INTRODUCTION

1. The Sub-group on Financial Derivatives was set up by the Balance of Payments Financial Flows and Stocks (BOP FFS) Task Force to investigate the practical aspects, particularly the difficulties, of collecting data on derivative instruments. Since its establishment in June 1997, the Sub-group has met five times. A list of Sub-group participants and details of the Sub-group's mandate are provided in Annexes 1 and 2.

2. The Sub-group sought to fulfil the requirements set out in the mandate by holding detailed discussions on the practical aspects of specific instrument groups (options, futures, swaps and forwards) and by addressing some general issues, including: (i) the valuation and reconciliation of flows and stocks; (ii) the definition of assets and liabilities in financial derivatives at the practical level; and (iii) gross versus net settlements. The work was done within the framework of ECB requirements. It must be noted that national approaches to financial derivatives data collection may be more detailed than what is suggested by the Sub-group.

3. The Sub-group discussed both instrument groups and general issues on the basis of examples. The use of examples highlighted the difficulties inherent in both the reconciliation of stocks and flows and the valuation and definition of assets and liabilities for the different instrument groups.

4. In addition to the examples exercise, the Sub-group discussed national experiences, thus acting as a forum for the exchange of information. The members of the Sub-group submitted papers explaining their respective national collection systems as well as (draft) reporting forms. Furthermore, the Sub-group studied the work carried out by the Bank for International Settlements (BIS) and the extent to which this could be useful for balance of payments purposes. The link between statistical data and prudential data was also considered.

5. The report is divided into four main parts. Part 1 describes the general difficulties in recording financial derivatives in the balance of payments and International Investment Position. Part 2 reviews

general derivatives market characteristics and the conceptual framework, as approved by the EMI Council, which was taken as a starting-point for the Sub-group's discussions. Part 3, which is the most important part of the report, examines the practical aspects of recording financial derivatives. Conclusions and recommendations are presented in Part 4.

PART 1 GENERAL DIFFICULTIES IN RECORDING FINANCIAL DERIVATIVES IN THE BOP/IIP

6. The financial derivatives market has developed very rapidly since the 1970s and especially during the last decade. According to the BIS statistics, during the 1987-1996 period, the notional amounts in financial derivatives markets have multiplied by 13 on the organised markets and by 28 on the over the counter markets (OTC). As the financial innovation is very rapid and new instruments are being created continuously, the derivatives market has become extremely complex.

7. This progress is reflected in the difficulties encountered when trying to reach a conclusion on the appropriate and practical statistical treatment of these instruments in the balance of payments and the International Investment Position. The speed of development and the complexity of this market together with the increasing number of statistical requirements explain the gap existing in data availability in many Member States. In some countries many financial derivatives are relatively new instruments and the markets are still emerging for which reason comprehensive derivatives data collection systems are still under discussion in order to meet statistical requirements.

8. One of the main difficulties in collecting derivatives data is that the methodology applied for the balance of payments and International Investment Position compilation does not coincide with the respondents' existing balance sheet data or the prudential data requirements. Data based on residency criteria is not seen as the most important information in the case of major companies or financial institutions which have a network of branches and subsidiaries across the world. The global measurement of risks obliges them to consolidate all their positions despite the location.

9. Another related difficulty is the use of global booking systems. Some financial institutions book all their deals in the same location, regardless of the place of the trade and settlement. As well, the development of netting arrangements on both organised and OTC markets make it more and more difficult to obtain information on a gross level. All these kinds of arrangements have direct and practical implications on the balance of payments data collection.

10. Furthermore, marked-to-market valuation causes difficulties for some derivatives. The general problem with banks relates to the common practice that trading books are marked-to-market but banking books are not. The derivatives contracts in the banking books are usually used for hedging purposes and, therefore, they are not always valued according to fair market prices. This is often the case for example for contracts between a bank's main office and its foreign branches. For balance of payments reporting this leads to asymmetries in the valuations, which is extremely difficult for respondents to correct. Additionally, the reporting institutions do not necessarily apply similar accounting practices since the current accounting standards in many countries allow different treatments for financial derivatives. However, it must be pointed out that international accounting standards will probably move towards marked-to-market valuation for all derivatives positions in the near future.

11. In many countries, collection of comprehensive balance of payments and International Investment Position data would require setting up a new statistical survey or at least making significant changes in the current reporting system. Practical experience suggests that the implementation of new surveys for statistical purposes is very burdensome for banks especially when keeping in mind that they usually have to give priority to their own risk measurement and to demands of prudential authorities. Moreover, in view of the preparation for EMU, which involves the banks making costly changes in their internal systems, new statistical requirements would be difficult to impose before the year 2000.

Table 1. Summary of the general difficulties in collecting financial derivatives data for BOP and IIP.

Market structure and development:	1. Increasing complexity and the rapid expansion of the derivatives markets =>development of data collection systems is lagging behind,
	2. Growing use of netting arrangements.
Methodological and practical problems:	1. Considerable number of different reporting requirements; differing compilation methodologies for BOP and IIP compared to balance sheets and prudential data,
	2. Lack of data based on residency criteria and use of global booking systems,
	3. Difficulties in marked-to-market valuation for some instruments (e.g. swaps),
	4. Difficulties in identification of derivatives transactions in case of delivery of the underlying instrument,
	5. Classification of the instruments which may flip from a positive to negative value (e.g. swaps and forwards).

Existing derivatives data sources

12. The Sub-group discussed potential existing sources of information for the compilation of financial derivatives in the balance of payments and International Investment Position. In particular, the possibilities of using data from the Bank for International Settlements (BIS), prudential data and exchange-traded market statistics were studied. The general conclusion was that, owing to the methodological differences, the potential sources reviewed could not be used as a substitute for the implementation of a consistent reporting system which could meet the BOP and IIP requirements. However, these sources could be used for checking purposes to provide a crude assessment of the plausibility of BOP data when they are first received. It was noted that it is very important to minimise the increase in the respondent's reporting burden. In this sense it is essential that efforts should be made towards achieving the harmonisation of statistical requirements between the various institutions collecting data on financial derivatives as far as possible, although we must obviously rigorously enforce a strict residency criteria.

13. The Sub-group reviewed the results of the 1995 BIS derivatives market survey and found that the global results gave a good overview of the size and structure of the derivatives market. Even though the usefulness of BIS data for the compilation of the EMU balance of payments is limited, it was noted that the Member States can use their own national survey results for quality checking purposes at the national level. For the next derivatives market survey in 1998 and the regular derivatives reporting, the BIS has made the choice to collect the outstanding positions on a consolidated basis[1], which is unfortunately not very helpful for BOP and IIP needs.

PART 2 DERIVATIVES MARKET CHARACTERISTICS AND THE CONCEPTUAL FRAMEWORK

14. The conceptual framework for the recording of financial derivatives in the balance of payments and International Investment Position was approved by the EMI Council in November 1997. The Sub-group took the conceptual agreements as a starting-point and prepared detailed summary tables for each instrument category in order to identify the practical problems in recording financial derivatives in the balance of payments and International Investment Position. The tables in this part of the report

[1] This is because the BIS is more interested in risk measurement

present the possible types of transactions within each instrument category and intend to clarify the recommended conceptual treatment in the balance of payments.

15. The Sub-group also examined the IMF discussion paper "The Statistical Measurement of Financial Derivatives", which received general agreement from the participants.

SECTION 1: FUTURES

General characteristics

16. A futures contract is a form of forward contract in that it conveys the right to purchase or sell a specified quantity of an asset at a fixed price on a fixed future date. The most important characteristics of a futures contract are that the terms of the contract are standardised, that trading must be conducted upon, and regulated by, a centralised exchange, and that futures are subject to regular margining. The contracts usually state the quantity to be delivered, and they are normally traded in a cycle of predetermined delivery dates (e.g. March, June, September and December). The trading of futures contracts takes the form of "open outcry" in trading pits or via Automated Trading Systems, with price movements being expressed in "ticks"; one tick represents 0.01% of the nominal value of the trading unit (e.g. 0.01% of a US cent, or 0.0001% of a US dollar).

17. Exchanges use the services of a clearing house to match and settle all transactions between members. Futures contracts are marked-to-market daily, which involves the buyer/seller paying/receiving the difference between the rate at the close of business of the day and the rate of the previous day. In order to operate on an exchange, a trader must have a margin account, into which he/she must pay initial margins (repayable) and variation margins (non-repayable) when they are required. The initial margin requires each party in a contract to deposit a fixed sum with the clearing house as soon as the contract is executed. This amount is set at a level which the exchange considers sufficient to cover the anticipated scale of daily price movements and is used to ensure that each counterparty can meet its potential obligations in the case of losses. Whilst the initial margin can be a cash payment, it is often met by the posting of collateral. The initial margin is returned to the depositors once the contract is closed out. The variation margin, however, reflects actual profit and loss realised on the contract from a daily marked-to-market valuation and, over the life of the contract, is used to fund the effective transfer of the asset from one counterparty to the other. Owing to the fact that the transfers to and from both counterparties' accounts takes place daily, the contract starts each day at a risk neutral position. Some exchanges, however, choose to retain this daily variation margin

until the end of the contract rather than passing it on each day. In many cases the margining position of each counterpart is calculated on a net basis (netting purchased and sold contracts) by the clearing house. In practice there might be only one margining account, which makes separating initial margin and variation margin payments more difficult.

18. In all futures deals, the clearing house itself becomes a legal counterparty to the contract. Hence, the creditworthiness of any counterparty is not a factor in exchange traded contracts, as the clearing house will settle all accounts if one counterparty defaults. When establishing a futures contract, a counterparty will have to pay commission to a broker for carrying out a transaction, as well as to the clearing house itself.

19. There are two main ways of liquidating a futures contract, the most common being to take up an offsetting futures position prior to the value date in order to net off the existing obligation on the clearing house's books. If the contract is allowed to expire, the buyer can sometimes take physical delivery of the commodity or instrument (where it exists) or choose to accept the cash equivalent. In the most active and developed markets such as short term interest rate futures markets, usually only cash settlement is authorised (e.g. 3 month contracts on LIFFE, MATIF, or DTB). However, long term contracts (e.g. 10 year contracts) may involve delivery of the securities.

Conceptual BOP treatment of futures

20. At the start of a futures contract, no transaction is recorded under financial derivatives in the balance of payments. The futures-style variation margin payments that are made during the life of the contract are non-repayable in nature and should be recorded as transactions in financial derivatives. Similarly, as in the case of exchange-traded options with futures-style margining, the initial margin payments, which are repayable to the payer, should be recorded as transactions in the Other Investment Account.

21. In principle, the market values of futures contracts should be recorded as financial derivatives assets and liabilities in the International Investment Position. In practice, however, the market values of futures with daily margining are close to zero at the end of each day, and, as mentioned earlier, are not necessarily cost effective to collect. The outstanding amounts of initial margins paid are recorded as assets in the Other Investment Account and the outstanding amounts of initial margins received are recorded as liabilities in the Other Investment Account.

Table 2. Conceptual framework for recording futures

FUTURES	
BOP transactions Assets: debits/credits, Liabilities: debits/credits	**Stock value in the IIP** Assets/Liabilities
Non-repayable margins: **Futures-style variation margin payments** =>Amounts paid or received during the period are recorded **under financial derivatives** in the Portfolio Investment Account. • The inflow of cash is regarded as a credit (decrease in assets) and the outflow of cash is regarded as a debit (decrease in liabilities). **Repayable margins:** **Initial margin payments** =>Amounts paid or received during the period are recorded **under loans/currency and deposits**** in the Other Investment Account. • The inflow of cash is regarded as a credit (decrease in assets or increase in liabilities) and the outflow of cash is regarded as a debit (increase in assets or decrease in liabilities).	**Assets:** • The sum of contracts with a positive market value at the end of the period is recorded in the Portfolio Investment Account.* • Outstanding amount of initial margins paid is recorded in the Other Investment Account. **Liabilities:** • The sum of contracts with a negative market value at the end of the period is recorded in the Portfolio Investment Account.* • The outstanding amount of initial margins received is recorded in the Other Investment Account.

* In practice, in the case of daily margining, the value of a futures contract is zero at the end of each day.

** In money and banking statistics repayable margin payments are considered as deposits only if they are paid to or received by a MFI.

SECTION 2: OPTIONS

General characteristics

22. Options can be either exchange-traded or over-the-counter (OTC) instruments. Exchange-traded options are packaged in fixed quantities and have a fixed range of dates. Options can be margined options style (where there is an exchange of the initial premium, and daily variation margins may be

covered by collateral rather than cash) or futures style (where there is no initial premium and variation margins are cash settled) OTC options, on the other hand, are tailor-made to the customer's requirements, and are therefore less suitable for trading on the secondary markets.

23. At the inception of the contract, the purchaser of the option usually pays a premium to the seller. At maturity, the holder (buyer) of the option has the right to exercise the contract. If the right is not exercised, the option expires worthless (a loss for the buyer is equal to the premium paid). If the option is exercised on the due date (or within the specified range of dates), then a net payment (representing the difference between the market price and the contractually agreed strike price) is usually made by the writer to the option holder. However, in some cases, instead of a net payment, a delivery of the underlying instrument or commodity takes place. The percentage of the contracts reaching maturity (i.e. contracts which are not closed out prior to the expiry date), and the percentage of those that go to delivery of the underlying, vary considerably from market to market.

24. Different types of margin payments are made in the exchange traded markets. Margin is a measure of risk to an institution who is counterparty to a contract. Margining takes two forms; initial margin, to cover potential future adverse price movements, and variation margin, to cover actual past price movements since the previous variation margin settlement. The initial margin is held as a deposit (or by the posting of collateral) for the duration of the contract and returned when the contract expires. Variation margining is carried out either in options style or in futures style. The choice depends on the instrument type and the practice applied by the exchange. For example, equity options are often margined option style, while interest rate options are usually margined futures style.

25. In options style margining, the purchaser of the option pays a premium to the seller and the writer posts initial margin to the clearing house. Daily variation margin payments are made to the buyer only in proportion of the net liquidation value, since the clearing house covers itself against potential future price changes in favour of the writer. Buyer's margin account can be fully realised only when the deal is closed out or exercised. With futures style variation margining, there is no premium and this is reflected in the price that the contract is quoted at; options that are margined futures style can be looked as being similar to futures, except the downside risk for the buyer is capped. Both the buyer and the seller are required to deposit initial margins. The daily variation margin payment is usually collected by the clearing house from one party - and simultaneously paid to the other party - and provides the means for effecting a change in ownership.

Conceptual BOP treatment of OTC options and exchange traded options with options-style margining

26. OTC options and exchange-traded options with options-style margining involve a payment of the premium up front. The full premium should be recorded under financial derivatives as the acquisition of a financial asset by the buyer, and as the incurring of a liability by the seller. At the close of the contract the net payments that reflect the difference between the underlying price and the strike price should also be recorded under financial derivatives. This difference should be recorded under financial derivatives even if the underlying instrument is delivered. Any actual delivery of the underlying instrument should be treated as a separate entry in the Financial Account and the transaction should be recorded at the prevailing market price. Both the premium at the start of the contract and net payments at the close of the contract are non-repayable to the payer (buyer or seller).

27. Initial margin payments, options-style variation margin payments or other collateral-type payments related to option contracts should be recorded as transactions under the Other Investment Account, currency and deposits. In principle, these are all repayable to the payer and should not therefore be regarded as transactions in financial derivatives. If repayable margin is made in the form of securities or other non-cash assets there will be no transaction recorded in the balance of payments since no change of ownership takes place.

28. The market values of the option contracts at the end of the reference period should be recorded in the International Investment Position. Purchased options are regarded as financial derivatives assets and written options are regarded as financial derivatives liabilities. The outstanding amounts of initial margins paid are recorded as assets in the Other Investment Account and the outstanding amounts of initial margins received are recorded as liabilities in the Other Investment Account.

Table 3. Conceptual framework for recording OTC options and exchange-traded options with options style margining.

OPTIONS: Options-style (including OTC options)	
BOP transactions Assets: debits/credits, Liabilities: debits/credits	**Stock value in the IIP** Assets/Liabilities
Full premium and **Net payments at the close of the contract** (difference between the underlying price and the strike price) =>Amounts paid or received are recorded **under financial derivatives** in the Portfolio Investment Account. • The purchase of an option is regarded as a debit (increase in assets, reduction in liabilities) and the sale of an option is regarded as a credit (increase in liabilities, reduction in assets). **Repayable margins (exchange traded options):** **Initial margin payments (writer only)** or **Options-style variation margin payments** =>Net amounts paid or received during the period are recorded **under loans/currency and deposits**** in the Other Investment Account • The inflow of cash is regarded as a credit (decrease in assets for the buyer of an option or increase in liabilities for the writer of an option) and the outflow of cash is regarded as a debit (increase in assets for the buyer of an option or decrease in liabilities for the writer of an option).	**Assets:** • The market value of the purchased options at the end of the period is recorded in the Portfolio Investment Account. • The outstanding amount of initial margins paid is recorded in the Other Investment Account. **Liabilities:** • The market value of the written options at the end of the period is recorded in the Portfolio Investment Account. • The outstanding amount of initial margins received is recorded in the Other Investment Account.

** In money and banking statistics repayable margin payments are considered as deposits only if they are paid to or received by a MFI.

Conceptual BOP treatment of exchange-traded options with futures-style margining

29. In the case of exchange-traded options with futures-style margining, payment of the premium does not take place at the start of the contract, and there is therefore no transaction in financial derivatives at the start of the contract. Initial margin payments, which are repayable to the payer, should be recorded as transactions in the Other Investment Account. The futures-style variation margin payments that are made during the life of the contract (usually daily) are non-repayable in nature and should be recorded as transactions in financial derivatives.

Table 4. Conceptual framework for recording exchange-traded options with futures-style margining.

OPTIONS: Futures-style options	
BOP transactions Assets: debits/credits, Liabilities: debits/credits	**Stock value in the IIP** Assets/Liabilities
Non-repayable margins: **Futures-style variation margin payments** =>Amounts paid or received are recorded **under financial derivatives** in the Portfolio Investment Account. • The inflow of cash is regarded as a credit (decrease in assets) and the outflow of cash is regarded as a debit (decrease in liabilities). **Repayable margins:** **Initial margin payments** =>Amounts paid or received during the period are recorded **under loans/currency and deposits**** in the Other Investment Account. • The inflow of cash is regarded as a credit (decrease in assets or increase in liabilities) and the outflow of cash is regarded as a debit (increase in assets or decrease in liabilities).	**Assets:** • The market value of the purchased options at the end of the period is recorded in the Portfolio Investment Account.* • The outstanding amount of initial margins paid is recorded in the Other Investment Account. **Liabilities:** • The market value of the written options at the end of the period is recorded in the Portfolio Investment Account.* • The outstanding amount of initial margins received is recorded in the Other Investment Account.

* In the case of daily margining, the market value of an option contract is, in practice, zero at the end of each day.

** In money and banking statistics repayable margin payments are considered as deposits only if they are paid to or received by a MFI.

30. In principle, the market values of exchange-traded options should be recorded as financial derivatives assets and liabilities in the International Investment Position. In practice, however, the market values of exchange-traded options with frequent margining are close to zero at the end of each day. (The market value of a futures style margined contract can be argued to be equivalent to any unsettled variation margin payments, although this may be difficult in practice to report for many institutions. However, as the figures will be relatively small, their collection is of limited value.) The outstanding amounts of initial margins paid are recorded as assets in the Other Investment Account, and the outstanding amounts of initial margins received are recorded as liabilities in the Other Investment Account.

SECTION 3: SWAPS, FORWARDS AND FRAs

General characteristics

31. Swaps are contractual agreements between two parties who agree to exchange sets of cash flows. Contracts are negotiated by the counterparts themselves and, in principle, the payment arrangements can be tailored to the wishes of the counterparts. However, in the most active swap markets standard conventions are followed, thus helping the balance of payments compiler to set out instructions for reporting. In many markets, such as in the interest rate swap market, the principal is never exchanged at the inception of the contract. On the other hand, e.g. in the case of cross currency interest rate swaps the principal is often exchanged at the inception of the contract. Interest payments are usually carried out on a net basis. Swaps are mainly OTC contracts, but exchange traded contracts can also exist.

32. A forward contract is an agreement between two parties to purchase/sell something at a predetermined price at a later date. Forwards are always OTC contracts (by definition, a future is a forward that is traded on an exchange). Forward Rate Agreements (FRAs) are the pure interest rate variety of forward contracts. Whilst the instruments pose the same problems, differing market practices create unique practical issues. For example, most FRAs are settled via a net cash payment at the end of the contract, whereas forward foreign exchange deals usually result in delivery of the underlying instrument.

33. Swaps and forwards almost invariably go to maturity. The only way to offset a position is to enter into a new contract reversing the original, although it is rare that contracts are formally closed out. Swaps, forwards and FRAs are instruments whose value can flip from positive to negative and vice-versa during all the life of the contract.

Conceptual balance of payments treatment

34. The net payments related to swaps (including net interest) and forwards are recorded as transactions under financial derivatives. Depending upon the contract specifications, net payments relating to swaps can be made during the life of the contract or only when it reaches maturity. If principal is exchanged in a swap (especially cross currency swaps), the possible difference between the two legs revalued in the base currency should be recorded under financial derivatives. Transactions relating to forward contracts invariably occur at expiry. Collateral payments are only

rarely made from one counterpart to other, but when there are such cash payments, they should be recorded in the Other Investment Account.

35. For forward foreign exchange contracts, it is recommended that the difference between the amount paid on the contract date and the amount that would be paid at the spot rate prevailing at settlement should be allocated to transactions in financial derivatives. In settlement data collection systems in which amounts paid are reported, it is however difficult or impossible to identify and separate the market price component. A survey data collection system is more feasible but it implies a heavy burden for the respondents.

36. The market values of swap and forward contracts should be recorded in the International Investment Position. Although the contract is usually negotiated so that it has zero marked to market value at inception, market values do change, and a contract will gain value for one party and become a liability for the other. The value of swap and forward contracts is derived from the difference between the agreed contract price and the prevailing market price, or the expected market price, which is discounted accordingly. Hence the relationship between the agreed contract price and the prevailing market price is a crucial element in the valuation of the swap and forward contracts. If the agreed contract price and the prevailing market price are the same, the contract has no value. If the contract price and the prevailing market price differ, the derivatives contract does have a value, which can "flip" to being positive or negative at various points along the life of the contract.

Table 5. Conceptual framework for recording swaps, forwards and FRAs.

SWAPS, FORWARDS and FRAs[2]	
BOP transactions Assets: debits/credits, Liabilities: debits/credits	**Stock value in the IIP** Assets/Liabilities*
Net payments on swaps, forwards and FRAs: Swaps and FRAs: **Net payments during the period or at the close of the contract.** Forwards: **The difference between the agreed contract price and the market price at the close of the contract.** => Amounts paid or received during the period are recorded **under financial derivatives** in the Portfolio Investment Account. • The inflow of cash is regarded as a credit (decrease in assets or increase in liabilities) and the outflow of cash is regarded as a debit (increase in assets or decrease in liabilities).	*Assets:* The sum of contracts with a positive market value at the end of the period. *Liabilities:* The sum of contracts with a negative market value at the end of the period.

* The value of a contract is derived from the difference between the agreed contract price and the prevailing market price or the expected market price (discounted value).

PART 3 PRACTICAL ASPECTS OF RECORDING FINANCIAL DERIVATIVES

SECTION 1: BALANCE OF PAYMENTS TRANSACTIONS

37. The Sub-group recognised several practical difficulties in recording financial derivatives transactions. Some of the problems are distinct for certain type of instruments but many appear with various instrument categories. The Sub-group approached the problems with practical recording examples which are presented in Annex 3. Examples 1, 2 and 3 cover different kinds of options (OTC, exchange-traded with option style margining and exchange-traded with futures style margining). Example 4 presents recording of a forward contract. Examples 5 and 6 introduce the recording of swaps (interest rate swaps and cross-currency interest rate swaps). Finally, example 7

[2] The treament in the table is in line with publication " The Statistical Measurement of Financial Derivatives", IMF November 1997. As the implementation timetable concerning the recording of flows related to interest rate derivatives (IRS and FRAs) is still open for different statistical areas, the relevant flows may have to be collected separately as long as the corresponding change will be made also in the national accounts compilation.

reviews the treatment of a futures contract. The most problematic areas as regards the practical issues are highlighted below with reference to the examples.

RECORDING OF ASSET AND LIABILITY FLOWS

38. In addition to potential conceptual difficulties, the Sub-group identified serious practical problems in recording asset and liability flows separately. Difficulties in recording transactions in exchange traded derivatives relate in many cases to clearing and settlement procedures in organised markets. The practical and theoretical problems inherent in the gross recording of swap and FRA-transactions are related to the flipping of the value of contracts from positive to negative or vice versa and to the necessary reconciliation between flows and stocks.

39. The Sub-group agreed that the asset/liability classification of option premium payments is more clear cut for OTC options than for exchange-traded options. For OTC contracts the distinction between asset and liability transactions is relatively clear because the writer has transactions in liabilities whilst the buyer has transactions in assets. However, for exchange traded contracts margined option style then there are greater complications because contracts can be closed out by entering into an equal and opposite contract, e.g. buying an option can be equivalent to a reduction in liabilities or an increase in assets. Note that exchange traded options that are margined futures style do not have premium payments.

40. In futures or option contracts under futures-style variation margining, the counterparts either receive or pay the settlement amount reflecting the day's price movement. In principle, if a counterpart receives cash, the transaction is regarded as a reduction in assets and, if cash is paid out, the transaction is regarded as a reduction in liabilities. However, most clearing institutions located in the Member States calculate the margin requirement on a net sell position, i.e. clearing house determines the net value of each portfolio by summing up all open positions counterpart by counterpart. Consequently, only a single daily net settlement is made with the exchange by each counterpart. This means that respondents are unlikely to be able to record gross flows in either a survey or a settlement data collection system. If asset and liability flows had to be reported separately, the respondents would face an enormous extra reporting burden because all contracts would have to be tracked down individually. The Sub-group considers that this would be practically impossible.

41. Additionally, when contracts can flip between being an asset and being a liability, there is actually no theoretical way that proper gross asset and gross liability flows can be determined. For

example, in case of futures, over the day the price might fluctuate between being an asset and a liability several times. By only recording the transactions on a daily basis the fluctuations between an asset and a liability positions will have been netted already.

42. In a settlement data collection system separation asset and liability flows related to swap transactions appears in practice absolutely impossible, and in a survey system the separation is impractical, even if theoretically possible. As illustrated by the examples given in Annex 3, a separate reporting of assets and liabilities would be extremely burdensome for respondents. In the case of swaps, the cash inflow could represent an increase in liabilities or a reduction in assets or even both depending on the circumstances. In order to distinguish between asset and liability flows, respondents would have to track down each contract, check whether the marked-to-market value is positive or negative and then assign the flows accordingly. Additionally, increasing use of netting agreements makes capturing gross flows even more difficult. Recording the gross figures would require in many cases that the net payment (or receipt) would have to be split into two parts, i.e. a reduction in liabilities (assets) and an increase in assets (liabilities).

43. Every time market conditions change so that the value of a swap contract flips from one sign to another, a reconciliation would have to be registered in the following manner: when the value of the swap flips from positive to negative, the assets would first have to be set to zero and then, second, the liabilities would have to be set to the level of the new market value. If the value of the swap were to flip back to positive in the next period, the recording procedure would be reversed. Respondents would have to do this contract by contract, which would be extremely laborious. The Sub-group feels that the value of the reclassifications for the purposes of the balance of payments and economic analysis, owing to the flipping of values, would not outweigh the extra burden generated for reporting institutions.

44. The gross recording of forward transactions does not lead to the same conceptual difficulties as it does with some other derivatives products. When a net cash settlement is made on the expiry of a forward contract, a cash inflow will always represent a reduction in (derivative) assets, whilst a cash outflow will always represent a reduction in liabilities. When the contract goes to delivery, the difference between the market price at expiry and the contract price will represent a decrease in assets for one institution and a decrease in liabilities for the other. However, in practice, the collection of gross flows would be difficult or even impossible for many reporting institutions because of the use of bilateral or multilateral netting agreements. According to these arrangements settlement is not

undertaken on a gross basis. The popularity of netting agreements is in general increasing as institutions attempt to minimise settlement risk.

45. One further example of the practical difficulties involved in making a separation between asset and liability flows relates to offsetting previous contracts. When a liabilities position is closed out by entering into an offsetting contract, it is not obvious how this net payment/receipt should be classified, since it could be recorded either as a decrease in liabilities or as an increase in assets. Therefore, also from this point of view, an asset/liability distinction is not a realistic proposal.

46. In some countries flows related to financial derivatives are classified into asset and liability flows according to the direction of payments. All incoming flows are regarded as a reduction in assets and all outgoing flows are regarded as a reduction in liabilities. This method offers a way of fulfilling the requirement that there should be separate flows for assets and liabilities, but the approach is not in line with the conceptual framework. As described above and also in the tables in Part 2, an inflow of cash can represent either a decrease in assets or an increase in liabilities. A straightforward classification of transactions into assets and liabilities based on the direction of payment is therefore impossible.

47. An alternative to gross recording would be to collect net data, in which case the respondents would only have to add together all derivative flows, without tracking down the contracts individually. This approach would be practically feasible for reporting agents. The Sub-group felt that the additional analytical value of separate asset and liability transaction data is of minor significance and does not justify the extra burden imposed on respondents when collecting gross data.

48. On the basis of the examples and the above observations, the ***Sub-group considered that net recording seemed to be the only meaningful and feasible way to record flows related to financial derivatives. Even though it might be possible to separate asset and liability flows for some instruments (e.g. most OTC options), the Sub-group felt, in general, that it would be advisable from a practical point of view to collect the flow data in a consistent manner across all kinds of derivative instruments.***

REPAYABLE MARGIN PAYMENTS

49. On the basis of practical experience in Member States, the Sub-group recognised that some problems may arise with the recording of repayable margin payments connected with exchange-traded derivatives. The problem relates to distinguishing between initial and variation margin payments. In some cases it is possible for the repayable margin not to be repaid in full, since a part of the margin is used for settling the contract. According to the conceptual guidelines, only the non-repayable part should be recorded under derivatives.

50. Under options-style margining the option premium is paid up front to the writer of the option, who is then liable to post the collateral to cover the net liquidation value of the option. The collateral can be in the form of either securities or cash and it is held by the clearing house until the contract is closed out or exercised. If the writer of an option has posted the collateral in the form of cash and the option is exercised while being in the money for the holder, it is possible that the cash posted as collateral would be used to settle the contract. In such cases, the non-repaid part of the margin payment should be recorded as a transaction in derivatives. In practice, these problems can arise only in those derivatives exchanges for which options-style margining is applied. The impact of possible misrecording is difficult to evaluate, but, generally, options-style margining is not the most commonly used margining practice in Europe.

CLOSE OF CONTRACT AND DELIVERY OF THE UNDERLYING INSTRUMENT

51. The Sub-group recognised particular problems in recording net payments at the close of derivatives contracts. Correct balance of payments recording is especially difficult when a contract (e.g. option or forward) is exercised and the underlying instrument is delivered. In principle, the transaction in the underlying instrument should be recorded under the relevant balance of payments item at market price, and the difference between the market price and the contract price should be recorded as a transaction in financial derivatives. In practice, the transaction in the underlying instrument is often recorded at the contract price of the derivative instrument, since the correct market price and the counterpart transaction in derivatives have not been captured. In net terms, the capital flows between residents and non-residents are measured correctly if the underlying delivery is recorded at the strike price and nothing is recorded under derivatives. However, this is not satisfactory from a conceptual point of view, since the correct classification of transactions is not achieved, and therefore some analytical value is lost. In many cases the exercise and settlement of an option or a forward is not recorded at all, since this cannot be recognised within the compilation system used.

52. In a settlement data collection system, in particular, it is impossible for the compiler to determine whether a transaction has an derivatives contract behind it or not. For example, when an equity option is exercised and the relevant shares are delivered to the holder of an option, the BOP-compiler only observes a transaction in equity securities. The equity security flows connected to the option deliveries are mixed with other "normal" equity security flows and the information on the derivatives transaction cannot be captured. If the settlement data collection system would be combined with a specific survey for directly capturing the relevant gains or losses, the compiler would have to be extremely cautious with the possibility of double counting.

53. In a survey data collection system the successful recording of the relevant derivatives transaction depends, in most cases, on the internal information systems of the respondents. Some are able to capture deliveries of the underlying instrument separately, whereas for others this is impossible. Even though the compiler can have a vague idea of the volume of deliveries by means of bilateral discussions with respondents, it is, however, difficult to estimate the missing data accurately.

54. In assessing whether delivery is likely to have a notable impact on the figures, one must determine what proportion of the contracts are settled by delivery rather than by net payment, and what proportion of institutions are unable to record the transactions in derivatives. Anecdotal evidence suggests that the vast majority of forwards go to maturity and that delivery is the norm, at least on the forward foreign exchange market.

55. The high incidence of delivery with forward foreign exchange contracts (which, according to the BIS 1995 Survey, comprise approximately 85% of the forward market[3]) is easy to understand as their main purpose is to move the date of delivery/purchase of the foreign currency to make it as optimal as possible. Settlement at the end of the contract also avoids the difficulty of agreeing the value of the contract partway through. In example 4 given in the annex, the net present value (NPV) of the forward midway through the contract was calculated at an assumed interest rate of 10%. The use of a different interest rate would alter its NPV and, therefore, the early settlement value. It would of course be possible for institutions to stipulate netting arrangements in the original contract.

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[3] In the BIS survey forwards were divided in to two categories: outright forwards and foreign exchange swaps. Foreign exchange swap is a transaction which involves the actual exchange of two currencies (principal amount only) on a specific date at a rate agreed (short leg), and a reverse exchange of of the same two currencies at a date further in the future at a rate (generally different from the rate applied to the short leg) agreed at the time of the contract (the long leg). Both spot/forward and forward/forward swaps were included.

56. The most common types of options that involve delivery of the underlying instrument are equity options, bond options and currency options. The exact magnitude of the problem is difficult to gauge, but, in general, the use of cash settlement is more common than the delivery of the underlying instrument. In the United Kingdom one reporting bank had provided the Bank of England with an estimate that about 85% of the exercised options were settled with cash and only 15% were closed with the delivery of the underlying instrument. On the French exchange-traded equity option market (MONEP) the latter proportion can reach 35%.

57. The Sub-group concluded that recording financial derivatives transactions at the close of contract and when the underlying instrument is delivered is very problematic. Possible solutions need to be evaluated from the perspective of national data collection system. The Sub-group felt in general that a survey data collection system offers better possibilities in solving the problem.

TRANSACTIONS WITH DERIVATIVES EXCHANGES

58. Since the original counterparts of the contracts are not known in the organised derivatives markets and the clearing house is the legal counterpart to each contract, ***the Sub-group suggests that the residency of the derivatives exchange should be used in order to identify which flows should be recorded in the balance of payments.*** As all trades are conducted against the clearing house, it is impossible to know which contracts are in principle concluded between residents and non-residents and which ones are concluded between two non-residents. Therefore, all exchange-traded contracts that involve a non-resident counterpart, i.e. trade conducted by residents in foreign derivatives exchanges and trade conducted by non-residents in domestic derivatives exchanges, should be recorded in the balance of payments.

59. However, it was noted that sectoral treatment of the derivatives exchanges or clearing houses might cause problems when aggregating derivatives transactions to EMU balance of payments. In some Member States clearing houses are classified as Monetary Financial Institutions (MFIs) and in some they are regarded as financial auxiliaries (non-MFIs).

60. Rapid development is currently taking place in the structure of the organised derivatives markets. Exchanges in different countries are cooperating very closely. Activities have been merged so that cross-border access between market places has become easier. For example, it may be possible to use services of a resident exchange for entering contracts in non-resident exchanges. These kinds of

transactions seem to be very difficult to capture for the balance of payments unless the exchanges or clearing houses are surveyed directly.

OTHER POTENTIAL PRACTICAL PROBLEMS

61. The Sub-group noticed a further potential difficulty related to collection of data on forward foreign exchange contracts. Although outright forwards are defined as having a maturity of more than two days until delivery, all reporting institutions do not necessarily make this distinction in their own accounts. Given that spot and forward foreign exchange markets are of comparable size, this could be a major problem. As a mitigating factor, spot deals are likely to generate much smaller levels and flows figures than "genuine" forwards which have a longer maturity.

SECTION 2: EXTERNAL POSITIONS

62. In practice, the external positions will mostly include OTC instruments (options, swaps, forwards and options that are margined option style). The Sub-group considers that an instrument breakdown, even though it is not required in the conceptual framework approved by the EMI Council, would be very useful additional information for analysing stock data and validating the reconciliation with flows.

63. The Sub-group is of the opinion that providing a meaningful distinction between asset and liability positions is feasible for all derivative instrument categories. For options, an asset position would consist of the sum of the market values of options held at the end of the period, and a liability position would consist of the sum of the market values of written options at the end of the period. For swaps, FRAs and forwards, an asset position would consist of the sum of the market values of the contracts with positive market value at the end of the period, and a liability position would consist of the sum of the market values of the contracts with negative market value at the end of the period.

64. Likewise, the positions would, in principle, be defined similarly for futures. However, in practice, when using daily margining, the values of the futures contracts are zero at the end of each day and no entry in the International Investment Position is needed. Therefore, allocating resources to the collection of stock data on financial futures subject to daily margining is not seen as very useful given the probable significance of the figures. If margining takes place more infrequently the likelihood of accumulation of market value grows.

65. The amounts of deposits made in the form of initial margins or other collateral payments should be recorded under the Other Investment Account, cash and deposits. The asset position equals the sum of all collateral deposits made and the liabilities position equals the sum of all collateral deposits received.

66. Respondents are likely to have problems in valuing some of their OTC contracts. As mentioned in Section 1 of this part of the report, valuation of forward foreign exchange contracts depends on the interest rate used for discounting the net present value of the contract. A lot of different discounting rates could be used across the reporting institutions. The Sub-group felt that this potential problem is bigger with non-financial companies than with banks. However, also banks have problems in marking to market some of their derivatives contracts. Difficulties arise especially with the contracts that are made for hedging purposes. These are usually in the banking book which is not always valued according to the prevailing market rates. The Sub-group concluded that use of different valuation methods for positions, in general, effects the reliability of the reconciliation between flows and stocks and creates asymmetries in the opposite positions recorded by the two counterparties of the same contract.

67. The Sub-group is of an opinion that there are many advantages in recording asset and liabilities positions separately. In general, the reliability of gross position statistics can be assumed to be better. Gross data is also required for supervisory purposes. Separate positions are necessary if a measure of country risk is wanted, since in the risk analysis the gross assets need to be taken into account instead of the net level after deduction of liabilities.

68. The Implementation Package states that the breakdown of the annual EMU IIP would be based on the standard components defined by the International Monetary Fund (IMF). This means that asset and liability positions would be shown separately. However, since the Sub-group is suggesting due to practical reasons that the relevant flow data would be recorded on a net basis, the principle guiding the collection of position data also needs to discussed. Therefore, ***the Sub-group concluded that the value of separate asset and liability positions would have to debated by the BOP FFS Task Force.***

SECTION 3: RECONCILIATION BETWEEN FLOWS AND STOCKS

69. Reconciliation between flows and stocks reflects the valuation changes that have occurred during the recording period. Practical examples on reconciling financial derivative flows and stocks are presented in the Annex 3. Reconciliation is often calculated as a residual from the positions at the

beginning, the transactions during the period and the position at the end of the period. However, some respondents may not be able to monitor flows as such, but have the information available for the stocks at the beginning and at the end of the period and also for the relevant price changes. The valuation item can then be used with positions to derive the amount of transactions.

70. Collecting stock data on a gross basis and flow data on a net basis, as the Sub-group suggests, would affect the reconciliation between stocks and flows. If the relevant flow data were to be collected on a net basis, then the reconciliation could only be made on a net basis. The Sub-group feels that, at least in some cases, the reconciliation of derivatives on a net basis could work as a data quality check. On the other hand, if the balance of payments compiler can calculate the changes in valuation item only as a residual between the flows and stocks, the quality of this item is very hard to assess without any instrument and risk category breakdowns. Even though the valuation item for financial derivatives cannot be validated similarly as in case of other securities, it could be used in the long run as an overall plausibility check.

71. The Sub-group was of an opinion that the meaningfulness of the reconciliation item depends on the data collection system used. If the flows and stocks are collected together at the same time from the same source, the reconciliation item is seen useful for quality control and for analytical purposes. The national compiler is then able to check the reconciliation on individual respondent level and observe in detail how the overall BOP reconciliation is aggregated. On the other hand, if the flows and stocks are collected from different data sources, usefulness of the reconciliation item is more questionable. Consequently, the Sub-group noted that the analytical usefulness of reconciliation on financial derivatives on the EMU BOP level will not be significant.

PART 4 CONCLUSIONS AND RECOMMENDATIONS

72. The Sub-group approached the balance of payments recording of financial derivatives by studying practical examples. Several difficulties were discovered. The most problematic issue relates to recording asset and liability transactions separately. The Sub-group is of the opinion that, owing to the practical and theoretical problems inherent in recording financial derivatives, *the requirements of the Implementation Package are extremely difficult to meet.* Whilst the collection of separate asset and liability flows is generally recommended for national accounts purposes, the economic value of such a classification for derivatives that can switch between asset and liability positions would be questionable, even if the data would be collected. Owing to the insurmountable practical problems

involved in separating the asset and liability flows in a meaningful way, ***the Sub-group suggests that all transactions in financial derivatives should be recorded on a net basis***. In practice, the recommended net recording means that only one figure would be entered for financial derivatives, this figure being the net of inflows and outflows (for assets and liabilities) and the net of credits and debits (assets and liabilities).

73. The Implementation Package states that separate flows on financial derivatives assets and liabilities should be collected. Recording financial derivatives on a net basis would therefore have an impact on the presentation of the Portfolio Investment Account. Transactions on financial derivatives could not be shown in a similar way as other items in the Portfolio Investment Account because only one figure, the net flow, would be available. From 1999 onwards, when the EMU-asset/EMU-liability split is required, financial derivatives flows would have to be treated differently from other Portfolio Investment items. Furthermore, a decision on the aggregation method for financial derivatives from 1999 onwards needs to be taken. In principle, two options appear as possible solutions for calculating extra-EMU transactions in financial derivatives. Firstly, derivatives transactions for the EMU BOP could be derived by aggregating the extra-EMU transactions, which means that Member States would have to report extra-EMU data for financial derivatives from 1999 onwards. Secondly, derivatives transactions could be calculated by aggregating national derivatives transactions and assuming that intra-EMU transactions would cancel out. In the light of data availability, the second option is more feasible in practice and therefore ***the Sub-group suggests that national data should be used for the aggregation of the EMU BOP transactions on financial derivatives.***

74. The Sub-group recognised that capturing financial derivatives transactions for balance of payments is particularly problematic when a contract is exercised and the underlying instrument is delivered. This is especially difficult in a settlement data collection system, where derivatives transactions are often recorded as a part of the transaction in the underlying instrument. The Sub-group felt in general that a survey data collection system offers better possibilities in solving the problem, but even then the success of capturing transactions correctly is depending on the systems of the respondents. The Sub-group also recognised potential recording difficulties with repayable margin payments. Due to practical settlement arrangements in derivatives exchanges, the separation of repayable and non-repayable margins may be difficult. Furthermore, the Sub-group also considered that growing co-operation between the exchanges might make the capturing cross-border transaction more complex in future. Also, growing use of global booking systems and netting arrangements pose a challenge to balance of payments compilers. The Sub-group feels that all these issues should be

taken into account when designing the future data collection of financial derivatives in Member States.

75. The Sub-group agreed that recording separate financial derivative asset and liability positions is practically feasible. Collecting gross positions is analytically more meaningful but is somewhat more burdensome for respondents. The Implementation Package states that asset and liability positions should be recorded separately. Regardless whether derivatives positions are recorded on a net or on a gross basis, the reconciliation between flows and stocks can only be done on a net basis if the transactions are recorded on a net basis. Sectoral breakdown of positions was considered to be feasible. The Sub-group noticed that even though not required in the Implementation Package, further breakdowns (such as risk category, instrument etc.) of derivatives position are extremely interesting from the analytical point of view.

76. The Sub-group noted that the suggestions above are consistent with the treatment of financial derivatives in the money and banking statistics.[4] Also, the suggestions made by the Sub-group are independent of the account where they are recorded. The Working Group on Statistics should be aware that the reorganisation of the BOP Financial Account structure, in particular moving financial derivatives out of the Portfolio Investment Account and recording them separately, has been considered by the IMF.

[4] For details see draft "Compilation Guide" on money and banking statistics to be approved by the EMI Council.

77. Finally, the practical recommendations for recording of financial derivatives transactions in the balance of payments are summarised in the following table:[5]

Summary table of the Sub-group's practical recommendations.

Flows to be recorded under *financial derivatives* in the *Portfolio Investment Account*:

OPTIONS:

- Premium payments: net amount paid or received during the period.
- Net payments related to the exercise of an option: net amount paid or received during the period.
- Futures-style variation margin payments: net amount paid or received during the period.
- If the underlying instrument is delivered the difference between the strike price and prevailing market price is recorded as transaction in derivatives.

FUTURES:

- Futures-style variation margin payments: net amount paid or received during the period.

SWAPS, FORWARDS AND FRAs:

- Payments during and at the close of the contract: net amounts paid or received during period.
- If the underlying instrument in a forward contract (e.g. currency) is delivered, the difference between the contract price and prevailing market price is recorded as transaction in derivatives.

=> ***All these net flows are aggregated into one figure reflecting the net financial derivative transactions.***

Flows to be recorded under *loans/currency and deposits* in the *Other Investment Account*:

ALL RELEVANT INSTRUMENTS:

- Initial margin payments
- Options-style variation margin payments
- Possible collateral deposits on OTC contracts

[5] The Sub-group has made these recommendations for the compilation of EMU balance of payments and it is recognised that individual countries may wish to collect more detailed information for their own purposes.

ANNEXES

ANNEX 1

Participants in the Sub-group on Financial Derivatives of the Balance of Payments Financial Flows and Stocks Task Force

Mr. Laurent Paul	**Banque de France (Chairman from December 1997 meeting onwards)**
Ms Barbara Mazzetta (until August 1997 meeting) Mr. Luca Serrai (from November 1997 meeting onwards)	**Ufficio Italiano dei Cambi**
Mr. Pedro Silva	**Banco de Portugal**
Mr. Harri Kuussaari (until August 1997 meeting) Mr. Jarmo Kariluoto (from November 1997 meeting onwards)	**Suomen Pankki - Finland's Bank**
Mr. Mikael Holmberg	**Sveriges Riksbank**
Mr. Nick Parish (until November 1997 meeting) Mr. Robert Hamilton (from November 1997 meeting onwards)	**Bank of England**
Mr. Michael Connolly	**Central Statistics Office**
Mr. Wilfried Masseling (until November 1997 meeting) Mr. Matthias Ludwig (from December 1997 meeting onwards)	**Deutsche Bundesbank**
Mr. Thomas Anker	**Danmarks Nationalbank**
Ms Carin Pronk	**European Monetary Institute (Chairman until November 1997 meeting)**
Mr. Paolo Poloni	**European Monetary Institute (Money and Banking Statistics Section)**
Mr. José-Carlos Moreno	**European Monetary Institute (General Economic and Financial Statistics Section)**
Mr. Jesús Pérez Bonilla	**European Monetary Institute (Balance of Payments and External Reserves Statistics Section)**
Mr. Harri Kuussaari	**European Monetary Institute (Secretary, Balance of Payments and External Reserves Statistics Section)**

ANNEX 2

SUB-GROUP ON FINANCIAL DERIVATIVES

Mandate

The Sub-group on Financial Derivatives will investigate the practical aspects, particularly the difficulties, of collecting data on derivative instruments. The Sub-group will study both simple and complex practical examples of transactions in derivatives and will illustrate their recording in the balance of payments and International Investment Position, bearing in mind the current international standards and proposed changes to these standards. On this basis, it will investigate the reconciliation between flows and stocks. It will also examine the practical and statistical implications of implementing the current international recommendations for the periodic classification from assets to liabilities, and vice versa, of positions and flows for those derivative instruments which may "flip" from a positive to a negative value, or vice versa.

The Sub-Group on Financial Derivatives will base its work on the conclusions and agreements already reached in the EMI BOP Financial Flows and Stocks Task Force, including agreements on Financial Terminology Database entries.

ANNEX 3

Practical examples of recording financial derivatives in the BOP and IIP

I OPTION-TYPE INSTRUMENTS

OTC options

e.g. Foreign exchange options,
Interest rate options (including caps, floors, collars),
Equity options,
Commodity options,
Swaptions,
Exotic options (ladders, barrier options, spread options, ratchet options, etc.).

Transactions to be recorded in the **balance of payments**:

Under *financial derivatives* in the *Portfolio Investment Account*:

- Premium payments: net amount paid or received during the period.
- Net payments related to the exercise of an option: net amount paid or received during the period.
- If the underlying instrument is delivered the difference between the strike price and prevailing market price is recorded as transaction in derivatives.

Under *loans/currency and deposits* in the *Other Investment Account*:

- Possible initial collateral deposits: amounts paid and received during the period.

Amounts outstanding to be recorded in the **International Investment Position**:

- Assets: market value of options held at the end of the period.
- Liabilities: market value of written options held at the end of the period.

Example 1 (OTC-options):

An Irish resident purchases a European call option from a US bank to buy USD 1 million at a strike rate of IEP/USD 1.60 on 1 January 1997, to mature in nine months' time. The contract details are as follows:

Start date: 1 January 1997
Spot rate: IEP/USD 1.6921
Strike price: 1.60
Volatility: 12%
Maturity: 31 September 1997
Premium: IEP 12,748
Amount: USD 1,000,000

The exchange rates at quarter ends were as follows:

Q1- IEP/USD 1.5742
Q2- IEP/USD 1.5137
Q3- IEP/USD 1.4556

The market valuations of the option at quarter ends were:

Q1- IEP 28,249
Q2- IEP 40,328
Q3- IEP 62,006

In this example there are two transactions in financial derivatives:

- The payment of the premium by the buyer results in a transaction recorded as a debit (increase in assets of IEP 12,748 in the balance of payments of Ireland in the first quarter of 1997. For the seller of the option, there is a transaction recorded as a credit (increase in liabilities) of IEP 12,748 in the balance of payments of the United States in the first quarter of 1997.
- The second transaction occurs when the option is exercised, as the option is in the money, on 31 September 1997. For the buyer of the option there is a transaction recorded as a credit (reduction in assets) of IEP 62,006 in the balance of payments of Ireland for the third quarter of 1997. For the seller of the option there is a transaction recorded as a debit (reduction in liabilities) of IEP 62,006 in the balance of payments of the United States in the third Quarter of 1997.

- The underlying currency transaction of USD 1,000,000 is recorded separately under Other Investment.

Balance of payments recording - Ireland (the buyer of the call option):

Portfolio Investment, Financial derivatives	1997Q1	1997Q2	1997Q3
Debit	12.7		
Credit			62
Other Investment, Banking transactions	**1997Q1**	**1997Q2**	**1997Q3**
Debit			687
Credit	12.7		625

International Investment Position - reconciliation of flows and positions; financial derivatives (on a net basis, assets have a positive closing position and liabilities a negative closing position):

Quarter end	Opening position	Payments	Receipts	Market value changes	Closing position
31/03/97	0	12.7	0	15.5	28.2
30/06/97	28.2			12.1	40.3
30/09/97	40.3		62	21.7	0

The balance of payments recording for the United States (the seller of the call option) would be similar but with opposite signs.

Exchange-traded options

e.g. Options on futures,
Options on securities,
Options on cash/foreign currency,
Equity options,
Commodity options.

Transactions to be recorded in the **balance of payments**:

Under *financial derivatives* in the *Portfolio Investment Account*:

- Premium payments: net amount paid or received during the period.
- Futures-style variation margin payments: net amount paid or received during the period.
- Net payments related to the exercise of an option: net amount paid or received during the period.

Under *loans/currency and deposits* in the *Other Investment Account*:

- Initial margin payments and options-style variation margin payments: amounts paid and received during the period.

Amounts outstanding to be recorded in the **International Investment Position**:

- Assets: market value of options held at the end of the period.
- Liabilities: market value of written options held at the end of the period.

Example 2 (Options, options-style margining):

Two cases: A Dutch resident a) purchases or b) sells a European equity call option for 1,000 ELF AQUITAINE shares from the Paris exchange-traded equity market (MONEP). The contract details are as follows:

Start date: 5 April 1995
Market price: FRF 370
Strike price: FRF 380
Maturity: 31 December 1995
Premium: FRF 5 x 1,000 = FRF 5,000

The market price of the ELF AQUITAINE shares: 30.6.1995: FRF 380
30.9.1995: FRF 395
30.12.1995: FRF 400

a) In this example, there are two transactions in financial derivatives:

- The payment of the premium by the buyer results in a transaction recorded as a debit (increase in assets) of FRF 5,000 in the balance of payments of the Netherlands in the second quarter of 1995. For the seller of the option, there is a transaction recorded as a credit (increase in liabilities) of FRF 5,000 in the balance of payments of France in the second quarter of 1995.
- The second transaction occurs when the option is exercised, as the option is in the money, on 28 December 1995. For the buyer of the option, there is a transaction recorded as a credit

(reduction in assets) of FRF 20,000 in the balance of payments of the Netherlands for the fourth quarter of 1995. For the seller of the option, there is a transaction recorded as a debit (reduction in liabilities) of FRF 20,000 in the balance of payments of France in the fourth quarter of 1995.

The underlying transaction in shares is recorded separately under equity securities.

Balance of payments recording - the Netherlands (the buyer of the call option):

Portfolio Investment, Financial derivatives	1995Q2	1995Q3	1995Q4
Debit	5,000		
Credit			20,000
Portfolio Investment, Equity securities	**1995Q2**	**1995Q3**	**1995Q4**
Debit			400,000
Credit			
Other Investment, Banking transactions	**1995Q2**	**1995Q3**	**1995Q4**
Debit			
Credit	5,000		380,000

International Investment Position - reconciliation of flows and positions; financial derivatives (on a net basis, assets have a positive closing position and liabilities a negative closing position):

Quarter end	Opening position	Payments	Receipts	Market value changes	Closing position
30/06/95	0	5,000		3,000	8,000
30/09/95	8,000			6,000	14,000
31/12/95	14,000	380,000	400,000	6,000	0

b) Situation is slightly different in case of the writer of the option because when there is a risk of loss for the seller, MONEP requires a margin adjusted daily and representing the most unfavourable liquidation value of the position. This margin is retained by MONEP in the case of default and paid back to the seller at the expiry of the option.

It is important to notice that the margin is calculated on a net sell position. MONEP takes together all positions opened by each counterpart and determines the net value of the resulting portfolio. As a consequence, recording on gross basis is impossible.

For the sake of simplicity it is considered that the amount of margin paid by the writer corresponds exactly to the gain for the buyer:

	Market price	Strike price	Deposit to be paid
April 5	370	380	0
June 30	380	380	-8
September 30	395	380	-14
December 28	400	380	-20

Balance of payments recording - the Netherlands (the writer of the call option):

Portfolio Investment, Financial derivatives	1995Q2	1995Q3	1995Q4
Debit			20,000
Credit	5,000		
Portfolio Investment, Equity securities	**1995Q2**	**1995Q3**	**1995Q4**
Debit			
Credit			400,000
Other Investment, Banking transactions	**1995Q2**	**1995Q3**	**1995Q4**
Debit	5,000		380,000 +20,000
Credit	8,000	6,000	6,000
Other Investment, Loans/cash and deposits	**1995Q2**	**1995Q3**	**1995Q4**
Debit	8,000	6,000	6,000
Credit			20,000

International Investment Position - reconciliation of flows and positions; financial derivatives

Quarter end	Opening position	Payments	Receipts	Market value changes	Closing position
30/06/95	0		5,000	-3,000	-8,000
30/09/95	-8,000			-6,000	-14,000
31/12/95	-14,000	400,000	380,000	-6,000	0

- In practice, the overall liability position of the seller is reduced to zero because of the existence of a margining system. The margin payments and the relevant outstanding amounts are reconciled in Other Investment account.

International Investment Position - reconciliation of flows and positions; Other Investment

Quarter end	Opening position	Payments	Receipts	Market value changes	Closing position
30/06/95	0	8,000		0	8,000
30/09/95	8,000	6,000		0	14,000
31/12/95	14,000	6,000	20,000	0	0

Example 3 (Options, futures-style margining):

A non-resident buys a short sterling option for 0.20 (the tick size is 0.01 and the tick value is GBP 12.50). The maturity of the contract is five days and it expires worthless. The daily price moves and the variation payments and receipts are as follows (for the seller):

Date	Price at which contract is traded	Closing price	Price movement	Variation margin (cash flow) in GBP
1	Bought at 0.20	0.19	-0.01	-12.50
2		0.21	+0.02	+25.00
3		0.20	-0.01	-12.50
4		0.15	-0.05	-62.50
5	Lapses worthless	0.00	-0.15	-187.50
Total			-0.20	-250.00

- The buyer pays a total cumulative margin of GBP 250 (20 x GBP 12.50), which equals the premium for an option priced at 0.20. No further payments are made.

International Investment Position - reconciliation of flows and positions; financial derivatives

Day	Opening position	Payments	Receipts	Market value changes	Closing position
1	None held	12.50		-12.50	0
2	0		25.00	+25.00	0
3	0	12.50		-12.50	0
4	0	62.50		-62.50	0
5		187.50			None held

- Statistically, the option has no value at the end of the day because the variation margin covers the daily price movements.

II FORWARD-TYPE INSTRUMENTS

Forwards

e.g. Forward rate agreements (FRAs),
Forward exchange agreements,
Equity forwards,
Commodity forwards,
Foreign exchange swaps

Transactions to be recorded in the **balance of payments**:

Under *financial derivatives* in the *Portfolio Investment Account*:

- Payments at the close of a forward contract: net amounts paid and received
- If the underlying instrument (e.g. currency) is delivered the difference between the contract price and prevailing market price is recorded as transaction in derivatives.

Under *loans/currency and deposits* in the *Other Investment Account*:

- Initial collateral deposits (if any): amounts paid and received during the period.

Amounts outstanding to be recorded in the **International Investment Position**:

- Assets: sum of forward contracts with a positive market value at the end of the period.
- Liabilities: sum of forward contracts with a negative market value at the end of the period.

Example 4 (Forward contract):

A resident enters into a forward foreign exchange contract with a non-resident institution to buy a quantity of currency at a price of GBP 100. The contract details are as follows:

Start date: 10 June 1997
Market price of the forward contract: GBP 100
Delivery date: 25 August 1997
Amount: GBP 100
Initial margin: 3% of the contract = GBP 3

The market price of a similar forward contract:
30 June: GBP 104
31 July: GBP 97.86
25 August: GBP 98

In this example, there is one transaction in financial derivatives:

- At the end of the contract the net settlement payment by the resident counterpart agreeing to buy pounds sterling results in a transaction recorded as a debit (reduction in liabilities) of GBP 2 in the balance of payments of the resident country in August 1997.

  The initial margin posted at the start of the contract is repaid at the close of the contract. These transactions are recorded under the Other Investment Account.

Balance of payments recording - resident country (the counterpart agreeing to buy GBP 100):

Portfolio Investment, Financial derivatives	1997M6	1997M7	1997M8
Debit			2
Credit			
Other Investment, Banking transactions	**1997M6**	**1997M7**	**1997M8**
Debit			101
Credit	3		100
Other Investment, Loans/cash and deposits	**1997M6**	**1997M7**	**1997M8**
Debit	3		
Credit			3

International Investment Position - reconciliation of flows and positions; financial derivatives (on a net basis, assets have a positive closing position and liabilities a negative closing position):

Quarter end	Opening position	Payments	Receipts	Market value changes	Closing position
30/06/97	0			3.974	3.974
31/07/97	3.974			-5.974	-2.0
31/08/97	-2.0	2.0			0

Swaps

e.g. Interest rate swaps
(single currency interest rate swaps, interest exchange agreements, callable swaps, capped swaps, yield curb swaps, step-up swaps, collar swaps, etc.).
Cross-currency interest rate swaps/currency swaps
Commodity swaps.
Equity index swaps.
Asset swaps.

Transactions to be recorded in the **balance of payments**:

Under *financial derivatives* in the *Portfolio Investment Account*:

- Payments during and at the close of the contract: net amounts paid or received during period.

Under *Loans/currency and deposits* in the *Other Investment Account*:

- Initial collateral deposits (if any): amounts paid and received during the period.

Amounts outstanding to be recorded in the **International Investment Position**:

- Assets: sum of swap contracts with a positive market value at the end of the period.
- Liabilities: sum of swap contracts with a negative market value at the end of the period.

Example 5 (Interest Rate Swap, IRS):

A French bank agrees a ten-year IRS for FRF 100 million with a non-resident on 7 December 1993. The bank pays the indexed rate (average of daily overnight settings for the relevant period) and receives the fixed rate of 6.2%. The contract details are as follows:

Agreement date: 7 December 1993
Notional amount: FRF 100,000,000
IRS start date: 1 January 1994
IRS maturity date: 1 January 2004
Interest paid annually on 31 December

The flows on the swap are as follows:

Principal 100,000,000.00		Fixed rate: 6.20%			
	Remaining maturity	Market fixed rate	Index rate	Capital value	Flows
07/12/93		6.20%			
31/12/93	10 years	5.85%		2.59	
30/06/94		7.75%	6.23%	-10.22	
31/12/94	9 years	8.20%	5.93%	-12.39	0.27
30/06/95		7.65%	7.01%	-8.89	
31/12/95	8 years	6.55%	6.64%	-2.13	-0.44
30/06/96		6.36%	4.19%	-0.98	
31/12/96	7 years	5.42%	3.86%	4.45	2.34
30/06/97		5.04%	3.27%	6.26	

Balance of payments recording for the years 1994-96 - France

Portfolio Investment, Financial derivatives	1994H1	1994H2	1995H1	1995H2	1996H1	1996H2	1997H1
Debit				0.44			
Credit		0.27				2.34	
Other Investment, Banking transactions	1994H1	1994H2	1995H1	1995H2	1996H1	1996H2	1997H1
Debit		0.27				2.34	
Credit				0.44			

International Investment Position - reconciliation of flows and positions; financial derivatives (on a net basis, assets have a positive closing position and liabilities a negative closing position):

Half year end	Opening position	Payments	Receipts	Market value changes	Closing position
31/12/93	0			2.59	2.59
30/06/94	2.59			-12.81	-10.22
31/12/94	-10.22		0.27	-1.9	-12.39
30/06/95	-12.39			3.5	-8.89
31/12/95	-8.89	0.44		6.32	-2.13
30/06/96	-2.13			1.15	-0.98
31/12/96	-0.98		2.34	7.77	4.45
30/06/97	4.45			1.81	6.26

In this reconciliation of positions and flows, there are two important points:

- Accrued interest is included in the valuation.
- All positions are treated throughout as assets with a negative or positive sign reflecting the marked-to-market value of the swap. This appears to be in conflict with the BPM5 recommendations regarding the flipping of derivative positions from assets to liabilities. If the IRS were to be treated as flipping from asset to liability throughout its life, the implication for the respondent would be that each contract would have to be tracked and, in practice, recorded on a contract-by-contract basis. Therefore, a separate recording of assets and liabilities and the relevant reconciliation would impose a heavy burden on the respondent.

Example 6 (Cross-Currency Interest Rate Swap, CCIRS):

An Irish resident arranges with a US bank to swap IEP 100 million at a fixed rate of 9.46% to floating US dollars. The Irish resident will receive fixed Irish pounds and pay floating US dollars. The contract details are as follows:

Start date: 31 December 1991
End date: 31 December 1996
Exchange of principal at IEP/USD 1.6506
Half-yearly payments beginning at 30 June 1992

The interest rates and exchange rates are as follows:

	5 years %	6m USD %	IEP/USD
contract	9.460	4.31	1.6506
1992H1	9.210	3.84	1.7507
1992H2	10.710	3.38	1.6252
1993H1	6.840	3.25	1.4343
1993H2	6.260	3.31	1.4066
1994H1	9.000	4.62	1.5221
1994H2	8.740	6.44	1.5481
1995H1	8.430	5.94	1.6376
1995H2	6.600	5.53	1.6008
1996H1	6.760	5.47	1.5978
1996H2	6.000	5.53	1.6921

Balance of payments recording - Ireland

Portfolio Investment, Financial derivatives	92H1	92H2	93H1	93H2	94H1	94H2	95H1	95H2	96H1	96H2
Debit										
Credit	2.92	3.01	2.86	2.79	2.22	1.29	1.74	1.88	1.9	4.49
Other Investment, Banking transactions	92H1	92H2	93H1	93H2	94H1	94H2	95H1	95H2	96H1	96H2
Debit	2.92	3.01	2.86	2.79	2.22	1.29	1.74	1.88	1.9	4.49
Credit										

International Investment Position - reconciliation of flows and positions; financial derivatives (on a net basis, assets have a positive closing and liabilities a negative closing position):

Half year end	Opening position	Payments	Receipts	Market value changes[1]	Fx-valuation[1]	Closing position
1992H1	0.00	1.81	4.37	3.82	5.72	6.62
1992H2	6.62	1.72	4.37	-1.87	-7.28	-5.55
1993H1	-5.55	1.87	4.37	14.87	-13.52	-7.05
1993H2	-7.05	1.94	4.37	3.39	-2.27	-8.72
1994H1	-8.72	2.51	4.37	-5.4	8.91	-7.43
1994H2	-7.43	3.44	4.37	1.58	1.82	-5.33
1995H1	-5.33	2.99	4.37	1.89	5.83	0.63
1995H2	0.63	2.85	4.37	3.18	-2.32	-0.39
1996H1	-0.39	2.83	4.37	0.49	-0.19	-2.00
1996H2	-2.00	100.24	104.73	3.18	3.30	0.00

[1] Market and foreign exchange-valuation changes have been separated in this example purely for the sake of clarity.

- The CCIRS flips in H2 1992 from asset to liability. It flips again in H1 1995 to an asset and flips again to a liability in H2 1995. As with the IRS this method of reporting would require the respondent to follow its portfolio of derivative contracts on a contract by contract basis. This would impose a serious burden on the respondents.

Futures

e.g. Interest rate futures
(three-month interbank rate (PIBOR, LIBOR, MIBOR, etc.), futures, three-month Euro-dollar rate futures, ten-year government bond futures, three-year Treasury bond futures, etc.)
Equity futures.
Stock index futures (FTSE 100 futures, CAC-40 futures, IBEX-35 futures, etc.).
Share futures (on individual shares of companies).
Currency futures.
Commodity futures.

Transactions to be recorded in the **balance of payments**:

Under *financial derivatives* in the *Portfolio Investment Account*:
- Futures-style variation margin payments: net amount paid or received during the period.

Under *Loans/currency and deposits* in the *Other Investment Account*:
- Initial margin payments: amounts paid and received during the period.

Amounts outstanding to be recorded in the **International Investment Position**:
- Assets: sum of futures contracts with a positive market value at the end of the period.
- Liabilities: sum of futures contracts with a negative market value at the end of the period.

In practice, the market values of futures contracts are likely to be insignificant from an IIP perspective. In the case of daily margining, the values of the contracts are zero at the end of each day. In the case of less frequent margining (weekly/monthly), futures contracts have a market value at the end of the trading day, but the amounts are, in most cases, modest compared with the market values of OTC contracts.

Example 7 (Futures contract):

A non-resident enters into a futures contract at 91.89. The tick value is GBP 12.50. The contract is held for four days before being closed out on the fourth day. The daily price moves and the variation payments and receipts are as follows:

Date	Price at which contract is traded	Closing price	Price movement	Variation margin (cash flow)
1	Bought at 91.89	91.90	+0.01	+12.50
2		91.88	-0.02	-25.00
3		91.99	+0.11	+137.50
4	Sold at 92.63		+0.64	+800.00
Total			+0.74	+925.00

International Investment Position - reconciliation of flows and positions; financial derivatives

Day	Opening position	Payments	Receipts	Market value changes	Closing position
1	None held		12.50	12.50	0
2	0	25.00		25.00	0
3	0		137.50	137.50	0
4	0		800.00	800.00	None held

- Statistically, the future has no value because it is marked-to-market daily.