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The Dollar Position of the Non-U.S. Private Sector, Portfolio Effects, and the Exchange Rate of the Dollar

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NO. 76: THE DOLLAR POSITION OF THE NON-U.S. PRIVATE SECTOR, PORTFOLIO EFFECTS, AND THE EXCHANGE RATE OF THE DOLLAR

by

Bixio Barenco

Balance of Payments Division

February 1990

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This paper measures the net dollar position of the non-U.S. private sector and a few other international positions -- notably the net foreign-currency position of the U.S. private sector. These currency positions provide the basis for a discussion of portfolio effects which are especially relevant for questions related to the future financing of U.S. current-account deficits. A special feature of this exercise is the explicit identification of the non-U.S. public sector as a potential source of dollar assets for the non-U.S. private sector.

* * *

Cette étude mesure la position nette en dollars du secteur privé hors Etats-Unis ansi que d'autres positions internationales, notamment la position nette en devises étrangères du secteur privé des Etats-Unis. Ces positions en devises servent de base à une discussion sur les effets de portefeuilles qui sont spécialement importants dans les questions relatives au financement futur des déficits de la balance courante americaine. Une particularité essentielle de cette analyse est l'identification explicite du secteur public hors Etats-Unis comme source potentielle d'avoirs en dollars du secteur privé hors Etats-Unis.

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I. SUMMARY AND CONCLUSIONS

1. The main purpose of this paper is to measure the dollar position of the non-U.S. private sector. This position is a necessary element in the computation of the share of dollar assets in non-U.S. private portfolios which may determine the "risk premium" on such assets. The dollar position of the non-U.S. private sector and its projected evolution is thus especially relevant for questions related to the future financing of U.S. current-account deficits.

2. On a more academic level, data on international positions in terms of currencies -- like the dollar position of the non-U.S. private sector and the foreign-currency position of the U.S. private sector -- are essential for the empirical testing of structural models of exchange-rate determination which include a risk-premium variable dependent on the relative supply of assets denominated in different currencies. So far these models have performed rather poorly, and have provided little or no evidence for the existence of a risk premium. But due to lack of data on the currency composition of private portfolios they had to rely on very crude proxies.

3. The methodology and computation of the dollar position of the non-U.S. private sector and various other international positions represent the core of the paper (Section II). A special feature of this exercise -- based on the OECD data bank on liabilities issued by public borrowers -- is the explicit identification of the non-U.S. public sector as a potential source of dollar assets for the non-U.S. private sector. This compares with the usual approach of treating the cumulated U.S. current-account position (net of official intervention) as representing the stock supply of dollar assets to the non-U.S. private sector. But the limitations of the present exercise should also be stressed. Although based on a coherent accounting framework, it relies on a number of rather strict assumptions, simplifications and judgmental interpretations of available data. Hence, the results must be interpreted with great care.

4. Bearing in mind these caveats, the computations suggest that the net dollar position of the non-U.S. private sector, which was negative and rather

stable until the late-1970s, has grown very rapidly in the 1980s, exceeding $600 billion at end-1988 (Section III). As a percentage of GNP/GDP of OECD countries excluding the United States, this position has progressed from practically zero in 1978 to nearly 11 per cent in 1988. These and other considerations point to a likely increase in the share of dollar assets in private non-U.S. portfolios over the last decade or so. On the other hand, the foreign-currency position of the U.S. private sector has progressed only moderately, reaching a little over $50 billion at end-1988. As a proportion of U.S. GNP this position has remained remarkably stable at around 1 per cent, suggesting a decline of the share of foreign-currency assets in U.S. private portfolios.

5. These stock positions of the U.S. and non-U.S. private sectors provide the basis for estimating a notional "constant portfolio composition effect", that is, the net demand for new financial assets denominated in dollars ("dollar assets") that would be forthcoming if the dollar share of private-sector portfolios remained constant as the value of these portfolios increases (Section IV). While no attempt is made in this paper to formally test whether or not this effect has explanatory power in a model of exchange-rate determination, it is argued that comparing this demand for dollar assets with the exogenous supply of new dollar assets proxied by such balance-of-payment flows as the U.S. current account, U.S. direct investment (net) and compensatory finance in dollars, seems to offer a few insights into the year-to-year variations in the position of the dollar in exchange markets. More specifically, this approach shows that the remarkable underlying strength of the dollar in 1989, in the face of a strongly adverse evolution of interest differentials, large co-ordinated official intervention to cap it, and events in Eastern Europe which strengthened the Deutschemark, coincided with a sharp decrease in the exogenous supply of dollar assets relative to the constant-portfolio-composition demand.

6. Looking to the future, this flow approach suggests that the confluence of underlying factors favourable to the dollar noted in 1989 may prove only temporary (Section V). The exogenous supply of dollar assets may increase again as a result of both a new widening of the U.S. current-account deficit and a tapering-off of net direct investment inflows into the United States. While the constant portfolio composition effect could continue to play an

important role, it will probably not fully cover the expected financing need. Furthermore, this notional effect requires a good general economic climate, a high level of confidence, and fairly well anchored exchange-rate expectations. It remains to be seen how investors would react if the international adjustment process were indeed to reverse and they faced the prospect of a seemingly endless stream of large U.S. external deficits.

7. Hence, even under rather optimistic assumptions full financing of the projected exogenous supply of dollar assets at constant expected yield differentials would seem to require further spontaneous portfolio diversification into dollars. While in the near future portfolio diversification, on balance, could remain favourable to the dollar, over the longer-term it could become more neutral and even turn against this currency. As financial markets outside the United States become more liquid and open, investment in European currencies and yen could represent a more attractive alternative to dollar investment, leading non-U.S. investors to diversify more broadly their international portfolios. These considerations could also work to boost progressively the desired share of foreign-currency assets in U.S. private portfolios, thus further eroding the portfolio balance effects currently underpinning the demand for dollars.

II. THE DOLLAR POSITION OF THE NON-U.S. PRIVATE SECTOR

A. Introduction

8. For a better understanding of some of the questions raised by the large and persistent U.S. current-account deficit and its financing several "positions" in terms of stocks of international assets and liabilities are analytically useful. Among these the net dollar position of the non-U.S. private sector is especially relevant since it is a necessary element in the computation of the share of dollar assets in non-U.S. private portfolios. This share and its evolution may be an important factor determining on what terms future U.S. current-accounts deficits will be financed. If the financing will not require the share of dollar assets in private portfolios to rise significantly above present levels it may take place rather smoothly at around existing interest rates and exchange rates. On the other hand, if the

financing implied a higher share of dollar assets this would normally entail a larger "risk premium", requiring a correspondingly higher expected return on these assets relative to assets in other currencies.

9. Unfortunately, the computation of international positions is beset by major statistical as well as conceptual problems, and very little work has been done so far (1). To reach even broad, tentative conclusions rather drastic assumptions and simplications must be introduced. Different approached are possible, notably a "gross approach" and a "net approach". Neither seems entirely satisfactory or clearly superior, each one offering distinct advantages and disadvantages. Hence, they should be seen as being essentially complementary.

10. A "gross approach" -- focusing on the share of gross U.S. assets in non-U.S. asset portfolios -- is attractive from a statistical viewpoint since, despite the many problems involved, it allows to estimate the size of relevant portfolios and their share of U.S. assets. However, because of the existence of the Eurodollar and Eurobond markets and the near-impossibility -- on the basis of published data -- of estimating gross positions of non-U.S. private investors in these markets, a gross approach must largely restrict itself to an analysis in terms of "claims on the United States": it can hardly perform the same analysis in terms of "claims denominated in U.S. dollars". Given the size of dollar liabilities issued by the non-U.S. public sector and held by the non-U.S. private sector, the two perspectives are quite different not only conceptually but also in practical terms.

11. From a theoretical point of view, a "net approach" is certainly more appealing. True, decisions concerning foreign assets and liabilities often may be made by different agents. But with the progressive liberalisations and integration of world capital markets and the introduction of new financial instruments and techniques this distinction may have become less-relevant, especially when the analysis -- like the one in this paper -- is restricted to financial transactions. For instance, in some cases and most notably in Japan, gross investment in foreign financial assets at times seems to represent merely one side of a process of international financial intermediation with little or no impact on exchange rates and the financing of current-account imbalances. More important perhaps, for an assessment of exchange-rate exposure -- which is

a central issue in any discussion of the financing of future U.S. payments deficits -- not only net positions are superior and gross positions can be downright misleading, but these positions should be "dollar positions", rather than "positions vis-à-vis the United States".

12. Thanks to the OECD databank of dollar denominated liabilities issued by the non-U.S. public sector, a net approach allows to estimate the overall net dollar position of the non-U.S. private sector -- that is, its position vis-à-vis the United States as well as vis-à-vis the non-U.S. public sector. This is a distinct step forward compared to the usual approach of treating the U.S. current-account deficit (net of official intervention) as representing the net supply of dollar assets to the rest of the world, and failing to recognise explicitly the non-U.S. public sector as a potential source of dollar assets for the non-U.S. private sector. The problem with a net approach, however, is that the quantification of relevant portfolios and their dollar share may be even more difficult than with a gross approach. Hence this share and its evolution will not be estimated directly. The focus of this paper being on financial portfolio decisions, the analysis is restricted to stock positions in terms of financial assets and liabilities. Foreign direct investment is excluded, even though the dividing line between positions in real and financial assets is admittedly quite blurred and any precise distinction is inevitably somewhat arbitrary (2).

B. Computation

13. Due to the paucity of data, it is impossible to calculate directly the net dollar position of the non-U.S. private sector, and it is necessary to reinterpret and calculate this position largely as the mirror image of various components of the U.S. external position. But a major feature of this analysis is the explicit identification of the non-U.S. public sector as a potential source of net dollar assets to the non-U.S. private sector -- as a result of official dollar borrowing in financial markets outside the United States, net of official dollar reserves held outside the United States. The aim of this section is thus to show how, starting from the international investment position of the United States (Table 1, line 1) (3), through several sets of adjustments and the derivation of various intermediate "positions" it is

possible to identify and calculate the net dollar position of the non-U.S. private sector (Table 1, line 10) (4).

14. The U.S. international investment position, with sign reversed, represents the position of the rest of the world vis-à-vis the United States (Table 1, line 2). A first set of adjustments (Table 1, line 3) applied to this position aims at defining the position of the non-U.S. private sector vis-à-vis the United States (Table 1, line 4). For this purpose it is necessary to exclude the net position of the non-U.S. public sector vis-à-vis the United States, that is, seen from the U.S. perspective, the net position of the United States vis-à-vis the non-U.S. public sector. It is thus necessary to exclude all claims of the U.S. public and private sectors on the non-U.S. public sector (5), and all liabilities of the U.S. public and private sectors towards the non-U.S. public sector.

15. More specifically, the first set of adjustments requires the exclusion of:

a) All U.S. official reserves assets -- under the assumption that none of them are claims on the non-U.S. private sector, i.e. foreign-currency deposits with foreign commercial banks -- and all other foreign assets of the U.S. government which are (or are estimated to be) claims on foreign official or public institutions;

b) Holdings by the U.S. private sector of bonds issued by the non-U.S. public sector in the United States and U.S. banks lending to the non-U.S. public sector ("compensatory finance" in the United States) (6); and

c) Foreign official assets (reserve and non-reserve assets) held in the United States.

16. A second set of adjustments (Table 1, line 5) leads from the position of the non-U.S. private sector vis-à-vis the United States to the dollar position of the non-U.S. private sector vis-à-vis the United States (Table 1, line 6). In general terms, the purpose of this adjustment is to exclude the non-dollar position of the non-U.S. private sector vis-à-vis the United States, that is,

seen from the U.S. perspective, the net foreign-currency position of the United States vis-à-vis the non-U.S. private sector. If the necessary data were available, this would imply the exclusion of the foreign-currency component of claims of both the U.S. public sector and the U.S. private sector on the non-U.S. private sector, as well as the foreign-currency component of liabilities of both the U.S. public sector and the U.S. private sector towards the non-U.S. private sector. In practice, the foreign-currency components of these items is not always available and in a few cases it was estimated (Annex A). Another limitation of this analysis is that it considers only the spot foreign exchange positions of the United States vis-à-vis the non-U.S. private sector, and hence, by implication, only the spot dollar position of the non-U.S. private sector. Largely because of the inexistence or unreliability of data, it does not cover positions in terms of forward/futures contracts, options and currency swaps, either between private and public sectors or between the U.S. and the non-U.S. private sector. To the extent that these net positions are large, the "dollar positions" defined and calculated here would not be a valid approximation of the overall exchange rate exposure.

17. More specifically, this second adjustment, on the side of U.S. external assets, excludes: all foreign corporate stocks; foreign bonds in foreign currencies; U.S. banks' and non-banks' claims on foreigners in foreign currencies; U.S. government assets (other than official reserve assets) denominated in foreign currencies and which are claims on the non-U.S. private sector; and U.S. foreign direct investment. And on the side of U.S. external liabilities it excludes: U.S. corporate bonds in foreign currencies; U.S. Treasury securities in foreign currencies ("Carter bonds"); and U.S. banks' and non-banks' liabilities to foreigners in foreign currencies.

18. A third set of adjustments (Table 1, line 7) leads from the dollar position of the non-U.S. private sector vis-à-vis the United States to the dollar position of the non-U.S. private sector -- vis-à-vis the United States as well as vis-à-vis the non-U.S. public sector (Table 1, line 8). Broadly speaking, the purpose of this adjustment is to include the net dollar position of the non-U.S. private sector vis-à-vis the non-U.S. public sector. More specifically, it includes compensatory finance in dollars carried out outside the United States, net of official dollar reserves held outside the United

States (assumed to represent essentially dollar liabilities of the non-U.S. private sector towards the non-U.S. public sector). Compensatory finance -- i.e. dollar liabilities of the non-U.S. public sector -- represents a feature of official financing that has generally not been treated systematically in financial accounts and analysis. Its estimates used here are based on relatively detailed issuance data collected by the OECD Secretariat, but rather ad hoc judgements concerning redemptions (Annex B). As for official dollar reserves held outside the United States reliable data are practically non-existent and had to be estimated (Annex C). Hence, while these estimates fill a major gap and allow the analysis to be pushed forward in one crucial aspect, they must be regarded as a first step and subject to a significant margin of error.

19. A fourth and final set of adjustments (Table 1, line 9) provides a refinement of the dollar position of the non-U.S. private sector. By excluding foreign direct investment in the United States it narrows the focus on the position in financial assets (7). Also, U.S. official data on the international investment position totally ignore the cumulated impact on stock positions of the errors and omissions item of the U.S. balance of payments, even though there is a large degree of agreement that this item primarily reflects unrecorded capital flows. Over the last decade or so it has been typically quite large and positive, pointing to a sizeable net inflow of foreign funds and a build-up of U.S. liabilities towards foreigners which is not reflected in official data. The addition of the errors and omissions item of the U.S. balance of payments cumulated since 1960, while a rather crude approach, may nonetheless provide a better approximation of the true dollar position of the non-U.S. private sector than its total exclusion (Table 1, line 10).

20. The exact order and nature of the various adjustments discussed above can of course be varied somewhat, depending on which intermediate positions are to be emphasised. An alternative approach, emphasising the counterparts of the dollar position of the non-U.S. private sector is summarised in Table 2 and shown in Chart A. Starting again from the U.S. international investment position (Table 2, line 1), the first step here is to define and estimate the "true" financial position in dollars of the United States vis-à-vis the rest of the world ("U.S. international investment position, adjusted" (Table 2, line 2). This adjustment (Table 2, line 6) entails:

a) Excluding the U.S. net position with respect to foreign direct investment;

b) Including the cumulated errors and omissions item of the U.S. balance of payments;

c) Excluding the U.S. net position in foreign currencies (in terms of financial assets).

21. More specifically, item (c) covers:

-- The foreign-currency position of the U.S. public sector that is, its official reserve assets and other official assets in foreign currencies net of its foreign-currency borrowing (mainly "Carter bonds" but also some nonmarketable U.S. Treasury bonds and notes payable in foreign currencies and sold to foreign official institutions);

-- The foreign-currency position of the U.S. private sector, that is, its holdings of foreign corporate stocks and foreign-currency bonds, U.S. banks' claims on foreigners in foreign currencies and U.S. non-banks' claims on foreigners in foreign currencies net of U.S. corporate and other bonds in foreign currencies, U.S. banks' liabilities in foreign currencies and U.S. non-banks" liabilities to foreigners in foreign currencies.

22. The U.S. international investment position, adjusted and with sign reversed is the dollar position of the rest of the world (Table 2, line 3) which, in turn is the sum of the dollar position of the non-U.S. public sector and the dollar position of the non-U.S. private sector. The dollar position of the non-U.S. public sector (Table 2, line 4) is the sum of its net position vis-à-vis the United States and vis-à-vis the non-U.S. private sector. The former includes all official dollar assets held in the United States net of the dollar liabilities of the non-U.S. public sector vis-à-vis both the U.S. public sector and the U.S. private sector (compensatory finance in dollars, in the United States). The latter position, includes all official dollar

reserves held outside the United States net of the dollar liabilities of the non-U.S. public sector vis-à-vis the non-U.S. private sector (compensatory finance in dollars, outside the United States). Since all these items have already been used in Table 1 (and Table 5), these calculations do not entail any new difficulty.

23. Finally, the dollar position of the non-U.S. private sector (Table 2, line 5) can be derived either by difference (the dollar position of the rest of the world less the dollar position of the non-U.S. public sector) or by adding up its components that is, the net dollar claims of the non-U.S. private sector on the United States, and its net dollar claims on the non-U.S. public sector. The first item has an "identified" component which is derived from Table 5 (lines 8 and 11), and a "non-identified" component which is the errors and omissions item of the U.S. balance of payments cumulated since 1960 (Table 2, line 6b, with sign reversed). The second item represents the non-U.S. private sector's holdings of dollar securities issued by the non-U.S. public sector (compensatory finance in dollars outside the United States) net of its dollar liabilities vis-à-vis the non-U.S. public sector (essentially official dollar reserves held outside the United States). This second item is thus line 4b of Table 2, with sign reversed. The dollar position of the non-U.S. private sector so identified and calculated is of course exactly the same as that identified and calculated in Tables 1 and 5.

24. While these international positions can be combined and rearranged in various patterns according to the purpose of the analysis, from a theoretical viewpoint the most relevant "composite product" may be the net dollar position of the non-U.S. private sector less the net foreign-currency position of the U.S. private sector, which can be seen as representing the net position of the global private sector vis-à-vis the dollar. Changes in this position represent the global private sector's demand for new dollar assets stemming from the desire of the non-U.S. private sector to increase its holdings of such assets in exchange for domestic currency, net of the desire of the U.S. private sector to increase its holdings of foreign-currency assets in exchange for dollars. It is this global position which, in Section IV, will provide the theoretical underpinning of a portfolio balance effect ("constant portfolio composition effect") and will allow its magnitude to be roughly estimated.

III. THE HISTORICAL EVOLUTION OF THE DOLLAR POSITION OF THE NON-U.S. PRIVATE SECTOR AND THE SHARE OF DOLLAR ASSETS IN PRIVATE PORTFOLIOS

A. Historical overview

25. This section briefly looks at the historical evolution of the dollar position of the non-U.S. private sector and its counterparts, and its implications for the composition on non-U.S. private portfolios as between dollars and other currencies.

26. It is clear from Chart A that, over the last 15 years or so, the net dollar position of the non-U.S. private sector has been broadly the mirror image of the international investment position of the United States. But this relationship has been quite loose. The other counterparts portrayed in Chart A -- the adjustment item and the net dollar position of the non-U.S. public sector -- have also played an important role, especially over periods of only a few years. Hence, at end-1988, the net dollar position of the non-U.S. private sector was nearly $100 billion or 20 per cent larger than the (negative) international investment position of the United States, and in 1987 the former changed little while the latter deteriorated by over $100 billion.

27. The most important single factor accounting for the large and growing difference in size between the dollar position of the non-U.S. private sector and the U.S. international investment position has been the cumulated errors and omissions item of the U.S. balance of payments -- $160 billion at end-1988 (Chart A II). The U.S. net direct investment position and the U.S. net foreign-currency position -- together represented some $100 billion at end-1988. These three factors, while quite large, have displayed a remarkable degree of stability over time, and have consistently represented a positive counterpart of the dollar position of the non-U.S. private sector, raising it well above the level implied by the U.S. international investment position. On the other hand, the net dollar position of the non-U.S. public sector has exhibited a pronounced cyclical pattern, fluctuating around zero (Chart A III). Hence, this item has been alternatively a positive and a negative counterpart of the dollar position of the non-U.S. private sector. At end-1988, it represented a negative counterpart of some $170 billion. Occasionally, the evolution of the dollar position of the non-U.S. private sector has primarily

reflected the evolution of the dollar position of the non-U.S. public sector, notably in 1980-82 and even more so in 1987. In that year, the deterioration of the U.S. international investment position was more than matched by the strengthening of the dollar position of the non-U.S. public sector, and the position of the non-U.S. private sector actually declined somewhat.

28. These figures strongly support the widely held view that the U.S. current-account deficit is practically all financed in dollars. Indeed, the U.S. private sector has consistently had a positive, albeit modest, net position in foreign currencies (in terms of financial assets, that is excluding direct investment abroad). This position has progressed rather regularly over the years, despite the sharp fluctuations of the dollar. On the other hand, the size and year to year changes in compensatory finance invalidate the corollary view that the U.S. current-account position is an acceptable proxy for the supply of new dollar assets to the rest of the world -- to be absorbed either by the non-U.S. private sector or by central banks through official intervention. In fact, as it will be discussed below (Table 3), until the mid-80s, changes in compensatory finance often outweighed U.S. current-account deficits and surpluses.

29. For a more detailed analysis, the period covered by Chart A should be divided into three sub-periods: the first one from 1974 to 1978; the second one from 1978 to 1983; and the third one from 1983 to 1988 (with 1987 representing a major "discontinuity").

30. From 1974 to 1978, the non-U.S. private sector had no significant net dollar position. The non-U.S. public sector had a rather stable and moderately positive dollar position as the rapid progression of compensatory finance in dollars was broadly matched by the growth of official dollar reserves. The U.S. international investment position was still positive but since it largely reflected net direct investment, on an adjusted basis it was already negative (on this basis, the U.S. external position has been negative since the beginning of the 1970s).

31. From 1978 to 1983, the dollar position of the non-U.S. private sector improved by nearly $250 billion and became strongly positive. This development was not so much related to the U.S. external position as to the

dollar position of the non-U.S. public sector which deteriorated by nearly $150 billion and became negative as a result of the strong progression of compensatory finance and the decline in official dollar assets. The U.S. international investment position reached its peak in 1981 ($141 billion) and then began to decline, but over this sub-period as a whole, on balance, it did not change much. On the other hand, the rapidly cumulating errors and omissions item and the widening U.S. net foreign-currency position more than offset the decline of the U.S. net direct investment position, and also represented a counterpart of the progression of the dollar position of the non-U.S. private sector.

32. From 1983 to 1988, the net dollar position of the non-U.S. private sector continued to grow but, on average, at a slower pace -- largely as a result of the break of 1987 when it actually declines somewhat. In this sub-period the main counterpart was the rapid deterioration of the U.S. international investment position as a result of the widening current-account deficit. Hence, unlike in the 1978 to 1983 sub-period, the strengthening of the dollar position of the non-U.S. private sector was largely accounted for by an increase in identified dollar claims on the United States -- even though the cumulated errors and omissions item continued to grow. On the other hand, the dollar position of the non-U.S. public sector became positive as a result of both a decrease in the stock of outstanding compensatory finance -- as liquidation began to exceed new issues of official dollar liabilities over this period -- and a massive increase in official dollar reserves in 1987.

B. Portfolio composition

33. A first, and somewhat surprising finding of this work is that the net dollar position of the non-U.S. private sector was negative in the mid-1970s. However, this negative position remained broadly stable in absolute terms, and as a percentage of GNP/GDP of OECD countries excluding the United States it contracted significantly (Chart B). Since over this period securities prices and the exchange rate of the dollar, on balance, did not change markedly, the (negative) share of dollar assets in private non-U.S. portfolios probably also decreased.

34. A second and more tentative finding is that as the dollar position of the non-U.S. private sector has become positive and has progressed rapidly since the late-1970s -- an average annual rate of growth of 77 per cent from 1978 to 1988 -- the share of dollar assets in financial portfolios is likely to have followed a similar trend. This is what has happened to the dollar position of the non-U.S. private sector as a percentage of GNP/GDP of OECD countries excluding the United States. This percentage has progressed from practically zero in 1978 to nearly 11 per cent in 1988. But it may not be entirely permissible to assume that the ratio of private financial portfolios to GNP/GDP has remained broadly stable. For two main reasons: first, the sharp increase in share prices worldwide and especially in Japan; and second, the depreciation of the dollar, notably vis-à-vis the yen. Both these factors have worked to accelerate the growth, in dollar terms, of financial portfolios of the non-U.S. private sector, and hence -- other things being equal -- to slow-down the progression of the share of dollar assets in these portfolios (8).

35. Nonetheless, the average rate of growth of the dollar position of the non-U.S. private sector over the last decade seems too high not to have resulted in a significant increase in the share of dollar assets -- an impression confirmed by crude estimates of the likely rate of growth of financial portfolios expressed in dollars. For instance, the average annual rate of growth of financial assets of the enterprise sector of industrial countries excluding the United States has been estimated at 16 per cent for the period 1982-88 (9). A more disaggregated analysis of the currency composition of gross portfolios focusing on Japanese institutional investors also seems to lend some support to this impression. Of course, because of its string of current-account surpluses and the piling up of net external assets, Japan is at one extreme of the spectrum of countries representing the non-U.S. group. And, on a gross basis, the increase in the share of dollar assets in private portfolios must have been much higher in Japan than elsewhere given the growing role of Japan in international financial intermediation. But, as noted above, both the share prices effect and the exchange rate effect have been especially relevant in Japan and have tended to limit countries' disparities in this respect. Moreover, given the importance of Japanese financial portfolios, compared to those of the rest of the non-U.S. sector,

the average for the entire non-U.S. sector is highly dependent on the Japanese case.

36. It should be noted that even if the share of dollar assets in non-U.S. private portfolios did increase over the last decade or so, this does not necessarily imply that the risk premium on dollar assets also increased since there may have been a concommitant process of spontaneous portfolio diversification -- that is, at broadly unchanged expected yield differentials. Because of widespread exchange controls and financial regulations, in the late-1970s the share of dollar assets was probably well below its desired level. Its subsequent rise, following the progressive abolition of these controls and regulations, may have represented a catching-up process with the desired share, which may itself have been further pushed up by the process of financial innovation and integration of world capital markets.

IV. PORTFOLIO EFFECTS, BALANCE-OF-PAYMENTS FLOWS AND THE EXCHANGE RATE OF THE DOLLAR

37. Relying on the stock positions of the U.S. and non-U.S. private sectors calculated above and on the OECD data bank on compensatory finance in dollars, this section develops a simplified flow analysis of the position of the dollar in exchange markets in terms of the demand and supply of financial assets denominated in dollars. This is clearly a second best and rather heuristic approach which begs many questions. Nonetheless, given the rather dismal performance of structural models of exchange-rate determination a less rigorous approach restricted to a core subset of exchange-rate transactions may be justified. More specifically, this flow analysis may indicate whether the proximate causes of year-to-year variations in the position of the dollar in exchange markets are essentially monetary, to be explained on the demand-side in terms of changes in expected yield differentials and portfolio considerations; or whether they are primarily related to changes in balance-of-payments flows like the U.S. current account, U.S. direct investment and compensatory finance which largely determine the global supply of financial assets denominated in dollars and which are usually explained in terms of a different set of factors (including the lagged impact of past changes in exchange rates).

38. On the supply side, such a flow analysis cannot be performed on the basis of changes in the dollar positions computed in Section II which are ex post data and thus represent, at the same time, quantities demanded and quantities supplied, equated through the usual market clearing mechanism of changes in exchange rates. Rather, the analysis must turn to ex ante supply data or, as a proxy, on sources of dollar assets which are relatively insensitive to short-term interest-rate and exchange-rate considerations. It is thus necessary to reconsider from this perspective stocks of dollar assets and their sources -- that is, certain U.S. balance-of-payments flows and selected dollar transactions of the non-U.S. public sector.

39. The main U.S. sources of net financial assets to the rest of the world are the U.S. current-account deficit, U.S. direct investment outflows (net), and U.S. official capital outflows (10). These three items can be taken as representing the U.S. balance on non-financial transactions which, by definition, must be matched by offsetting private financial flows and net transactions of monetary authorities (essentially, official intervention). As noted, U.S. external imbalances are practically all financed in dollars and U.S. residents have maintained a rather modest and only gradually increasing net position in foreign currencies (at least, in terms of financial assets and on a spot basis). In addition, current-account transactions, direct investment and official capital flows are all relatively unresponsive, within a year or so, to changes in expected yield differentials (11). Hence, as a broad generalisation, the U.S. balance on non-financial transactions can be seen as representing the ex ante U.S. supply of new financial assets denominated in dollars to be absorbed by the rest of the world (Table 3, line 4) (12). To find the global, ex ante supply of these assets it is then necessary to add those dollar transactions of the non-U.S. public sector -- new compensatory finance in dollars and changes in official dollar reserves -- which can be taken as being largely unresponsive to short-term exchange-rate and interest-rate considerations.

40. While compensatory finance is generally defined as foreign-currency borrowing by the public sector undertaken for balance-of-payments purposes, for the calculation of the dollar position of the non-U.S. private sector, it had to be defined to include all borrowing by all public-sector entities

(Appendix B). Hence, it includes borrowing by Canadian provinces and other public entities which may reflect more a portfolio optimising behaviour than government policies, and should be treated like a financial transaction of the private sector. Moreover, a country may decide to engage in compensatory finance because of its own external position but the specific currency, or currencies, in which it borrows may be dictated, at least in part, by portfolio considerations and reflect factors like the position of the dollar in exchange markets at that moment. Nonetheless, compensatory finance in dollars of Canadian provinces is a relatively small proportion of the total, and given the depth and breadth of the dollar sector of the international capital market compared to the other sectors, on a year to year basis, the scope for currency substitution may be limited. Therefore, while it will be necessary to keep these caveats in mind, as a broad generalisation, it may be permissible to treat compensatory finance as an ex ante source, adding to the net flow of dollar assets generated by the U.S. balance on non-financial transactions.

41. With respect to official dollar reserves the precise dividing line between policy-determined transactions and transactions motivated by broad portfolio considerations is again hopelessly blurred. Conceptually, several cases can be distinguished. First, changes in official reserves reflecting an external financing need of countries which peg their currencies and use the dollar as the reserve currency. These official dollar transactions -- presumably an important proportion of changes in official dollar reserves of non-G.10 countries -- are largely unrelated to the position of the dollar in exchange markets and should be treated as a component of the global supply of dollar assets. Second, changes in official dollar reserves reflecting multilateral efforts to stabilise key dollar exchange rates. These transactions which, in recent years, have probably represented the bulk of official dollar sales and purchases by G-10 countries should be treated as an item on the absorption side. Third, changes in official dollar reserves unrelated to an actual financing need of the country in question and reflecting a shift in official portfolios, either because of strong upward/downward pressure on the dollar or because of a long-term strategy for official reserve diversification. Official portfolio shifts due to ongoing exchange-rate developments and expectations should be treated essentially like private portfolio transactions on the absorption side. On the other hand,

shifts resulting from a longer-term strategy should be treated as a component of the global supply of dollar assets since such a strategy is likely to reflect primarily structural factors like the exchange rate arrangements of the country considered, its trade flows with reserve-currency countries, and the currency denomination of its debt-service payments. Given the practical impossibility of classifying changes in official dollar reserves according to these criteria, for working purposes all of them will be treated as an absorption item (Table 3, line 7) -- a treatment which will further increase the broad-brush character of the analysis (13).

42. On the demand side, in a growing economy considerations of portfolio balance can be expected to result in a spontaneous demand for dollar assets. This "constant portfolio composition effect" is defined as the amount of new dollar assets necessary to keep the composition of private portfolios unchanged. While it is impossible to quantify with any precision the size of relevant portfolios and their share of dollar assets, the rate of growth of these portfolios -- known or assumed -- combined with the net dollar position of the non-U.S. private sector calculated above is sufficient to derive the amount of additional dollar assets which in any given period must be absorbed by the non-U.S. private sector to keep the dollar/non-dollar composition of its portfolios at the existing level -- whatever that might be. The same approach applied to the net position in foreign currencies of the U.S. private sector and the combination of the two results gives a tentative idea of the net demand for dollar assets which in a growing economic environment may take place spontaneously, that is, independently from interest rate and exchange rate considerations. Table 3 shows this constant portfolio composition effect (line 10) under the highly simplifying assumption of a uniform annual rate of growth of relevant portfolios of 10 per cent (14).

43. Charts C and D show the global supply and absorption of dollar assets and their components -- as presented in Table 3 -- combined with the effective exchange rate of the dollar. The resulting overall picture is quite different as between the 1970s, the 1980s until 1987, and 1988-89. In the first period, while the U.S. balance on non-financial transactions may be sufficient for a general explanation of the evolution of the dollar, compensatory finance seems to provide a striking additional reason for the dollar crisis of 1977-78 and its progressive resolution over the following years. With the net dollar

position of the non-U.S. private sector close to zero, the constant portfolio composition effect was largely irrelevant during this period. From 1980 until 1987, neither the U.S. balance on non-financial transactions nor compensatory finance showed any consistent correlation with the evolution of the dollar. While the U.S. balance on non-financial transactions followed a steep upward trend and compensatory finance clearly trended downward, the dollar first soared and then plunged. Hence, this major cycle in the exchange rate of the dollar seemingly had little to do with supply-side conditions and its causes should be sought essentially on the demand side -- presumably in terms of changes in expected yield differentials (15). Another, albeit minor factor contributing to the rise of the dollar might have been the constant portfolio composition effect which, following the rapid build-up of net dollar assets by the non-U.S. private sector, by 1984 might have been of the order of $20 billion, or one-fourth of the global supply of dollar assets. Once the dollar turned around, this factor presumably cushioned the severity of its fall. But in 1987, with unsettled financial markets, the constant portfolio composition effect apparently broke-down, the non-U.S. private sector hardly absorbed any new dollar assets, and central banks had to absorb practically the whole global supply of such assets.

44. More recently, after fluctuating with no clear trend in 1988, the dollar rebounded markedly in the first half of 1989 and remained resilient in the second half of that year despite a sharply adverse movement of interest differentials, heavy official intervention to cap it, and events in Eastern Europe which greatly strengthened the Deutschemark. Conjunctural factors, such as the outlook for interest rates and the prospect for a "soft-landing", as well as monthly U.S. trade deficits smaller than expected undoubtedly played an important role, especially in determining the short-term evolution of the dollar. But the underlying strength of this currency may have been associated with a major reduction in the global supply of dollar assets and a growing role of portfolio effects.

45. Mainly as a result of an improvement of the U.S. current account and a surge in net inflows related to direct investment, the global supply of new dollar assets fell by over $70 billion in less than two years -- from $130 billion in 1987 to $55 billion in the first half of 1989 (at an annual rate). Hence, in 1989 the global supply of dollar assets was practically of

the same order of magnitude as the hypothetical constant portfolio composition effect, compared with an excess supply of $80 billion in 1987. But with central banks being large net sellers of dollars in 1989, the non-U.S. private sector seems to have absorbed an amount of dollars well in excess of the global supply as defined here, thus increasing the share of dollars in its portfolios. Following the "pause" of 1987, which presumably caused this share to decrease, investors may have sought to catch-up with respect to longer-term investment strategies.

46. Given the margin of error of the calculations and the tentative nature of any portfolio-based effect, these considerations are clearly very speculative. Nonetheless, with a generally improved economic climate and better anchored exchange-rate expectations, the preconditions for an effective role of something like the constant portfolio composition effect by early 1989 may have been broadly in place. Hence, this factor, combined with the sharp contraction of the supply of dollar assets, seems to provide at least a partial explanation for the underlying strength of the dollar in 1989 (16).

V. THE MEDIUM-TERM OUTLOOK

47. Few analysts expect the U.S. external deficit to disappear completely in the foreseeable future. Whether its financing will take place more or less spontaneously at around current interest differentials and exchange rates or whether it will prove more disruptive may depend, among other factors, on what this financing will imply for the share of dollar assets in non-U.S. portfolios and the risk premium. This, in turn, will depend on the size of the U.S. external deficit and the global supply of dollar assets relative to the spontaneous demand for such assets -- which will reflect the constant portfolio composition effect as well as portfolio diversification. This section will try to assess these questions using the analytical framework developed above and a few back of the envelope calculations. First, it will consider the likely future evolution of the global supply of dollar assets and the constant portfolio composition effect. Second, it will briefly discuss the outlook for spontaneous portfolio diversification and its impact on the dollar.

A. The likely future evolution of the global supply of dollar assets and the constant portfolio composition effect

48. Given present policies and exchange rates, and assuming that OECD economies grow at around their potential rates, the U.S. current-account deficit is widely expected to begin to widen again within a year or two. As for net U.S. inflows on account of direct investment it seems safe to assume that in the near future they will continue at around present record levels since they reflect a number of deep-rooted factors and typically do not turn around abruptly. But several considerations suggest that we might be close to the peak and that over the coming years net direct investment inflows may abate somewhat. These considerations include: a) a lagged reaction to the weakening of the U.S. cyclical position relative to the rest of the OECD area; b) a reduced incentive for foreign companies to invest in the United States as a result of the recovery of the dollar; c) a tapering off of the wave of inward investment related to trade imbalances and the threat of protectionism, and aiming at shifting foreign production to the United States (notably in the automobile industry); d) the increased interest of U.S. companies for investing in EC countries in anticipation of the single market, as well as in a number of developing countries which seem to be relaxing their negative attitude toward foreign direct investment; e) the possibility that events in Eastern Europe may lead to significant direct investment by U.S. companies; and f) the fact that foreign direct investment in the United States has reached a socially and politically sensitive level which may already create additional uncertainties and disincentives for a number of potential foreign investors.

49. Official capital has fallen to a trickle recently and while it may rebound somewhat it can hardly be expected to play a major role. Finally, compensatory finance has generally resulted in net repayments over the last couple of years. But reflecting the sharp decline in new borrowing since the debt crisis in the early-1980s, gross repayments will progressively abate and gross borrowing may pick up somewhat even though it does not seem to be poised for a major upturn. Within the OECD area current-account deficits are smoothly financed -- sometimes over-financed -- by private capital flows, and heavily indebted developing countries are unlikely to regain normal access to private financial markets in the foreseeable future. Only massive borrowing by Eastern

European countries could significantly change this picture. Hence, compensatory finance, on a net basis, may return positive within a few years, causing the global supply of dollar assets to exceed the U.S. balance on non-financial transactions.

50. On the demand side, in coming years the strength of the constant portfolio composition effect technically will depend on the evolution of non-U.S. and U.S. private financial portfolios. This in turn will depend on a number of factors, including: a) the exchange rate of the dollar; b) securities prices; and c) the stream of private saving.

51. A depreciation of the dollar would reduce the value -- expressed in foreign currencies -- of dollar assets in foreign portfolios, thereby decreasing their share. At the same time, it would increase the value -- expressed in dollars -- of foreign-currency assets in U.S. portfolios. On both accounts, other things being equal, a depreciation of the dollar would tend to increase the net demand for dollars stemming from the constant portfolio composition effect. An appreciation of the dollar would tend to have the opposite effect. However, in the case of a major change in the exchange rate of the dollar, investors would be unlikely to consider "other things to be equal", and the preconditions for a normal functioning of the constant portfolio composition effect would no longer be fulfilled. Hence, the figures in Table 4 implicitly rest on the assumption of no large changes in exchange rates.

52. A major, sustained increase in stock and bond prices worldwide could significantly raise the average annual rate of growth of private portfolios. The increased demand for dollar assets resulting from the capital gains recorded by of non-U.S. portfolios would be accompanied by an increased demand for foreign-currency assets resulting from the capital gains recorded by U.S. portfolios. But the net impact on the constant portfolio composition effect could still be sizeable since the net dollar position of the non-U.S. private sector is some 12 times larger than the foreign-currency position of the U.S. private sector and a change of 1 percentage point in the rate of growth of global portfolios currently represent a net change in this effect of some $6 billion (with a higher rate of growth of global portfolios leading to a stronger constant portfolio composition effect and a stronger "spontaneous"

demand for dollar assets, and vice-versa). While the future evolution of stock and bond prices can hardly be predicted, at the present these markets do not seem to be obviously out of line with underlying economic conditions, even though an assessment of the Tokyo stock market is particularly difficult. While cyclical fluctuations -- even important ones -- can obviously not be ruled out, the scope for a major and sustained movement in either direction would seem to be minor. A sharp desynchronisation between markets in the United States and in the rest of the world over a period of several years would also appear an unlikely prospect.

53. Therefore, over the medium-term the size of the constant portfolio composition effect might reflect primarily the annual average growth rate of OECD economies and private saving. Given the improved prospect for inflation -- compared to the last decade -- the trend towards fiscal consolidation, and the aim of the authorities to reduce external imbalances, an average growth rate of private portfolios of somewhat less than 10 per cent, with no major differences between the United States and the rest of the world would seem a reasonable assumption. However, given the much larger net dollar position of the non-U.S. private sector compared to the foreign-currency position of the U.S. private sector ($625 billion and a little over $50 billion at end-1988), the constant portfolio composition effect is rather sensitive to different growth rates of global portfolios. Table 4 shows the size of the constant portfolio composition effect with rates of growth of portfolios ranging from 6 to 12 per cent.

B. The prospect for spontaneous portfolio diversification

54. Even if the global supply of dollar assets were progressively to return to a level of $100 billion or more, under seemingly reasonable assumptions concerning the future rate of growth of private portfolios, the constant portfolio composition effect could still provide the bulk of the financing. In other words, provided that the U.S. external deficit did not get out of control, its financing would seem unlikely to cause a drastic increase in the share of dollar assets in non-U.S. private portfolios. Hence, in principle, it could be accommodated with no major shocks, notably with respect to interest rates and exchange rates. Using yet a different perspective and terminology, the U.S. external deficit appears to be broadly "portfolio

sustainable", since combined with compensatory finance its size may remain roughly equivalent to the net inflow of financial capital in the United States stemming from the desire of U.S. and foreign investors to keep a stable share of, respectively, dollar assets and foreign-currency assets in their portfolios.

55. These findings may seem relatively encouraging but they are subject to important qualifications. First, the margin of error of the calculations is very high indeed, and some of the estimates rest on rather crude assumptions. Second, while the constant portfolio composition effect is an intellectually appealing concept, it remains to be seen whether over a sustained period of time it represents a valid approximation of real life investment behaviour. This is essentially an empirical question which can hardly be settled a-priori, especially since the ongoing process of global financial integration represents a quantum change and we are largely in uncharted waters. Nonetheless, it seems reasonable to assume that portfolio behaviour will remain heavily dependent on the evolution of and prospect for the U.S. external deficit. Investors might be willing to increase the demand for dollar assets in line with their expanding portfolios as long as the correction of the U.S. deficit seems to be underway -- albeit at a slow and irregular pace. It is an open question how investors would react if the adjustment process were to reverse and they faced the prospect of a seemingly endless deterioration of the U.S. deficit. The answer may crucially depend on whether financial markets are more likely to focus on the deficit itself -- its absolute amount, direction and speed of change -- or whether, year after year, they may be willing to consider primarily the ratio of the deficit to certain macroeconomic variables, such as GNP and exports. Third, more generally, the constant portfolio composition effect requires a very settled economic environment with subdued expectations and credible economic policies, particularly with respect to exchange rates -- a rather restrictive set of conditions which can hardly be expected to be completely fulfilled at all times. Finally, even without economic upheavals, spontaneous portfolio diversification -- that is, with broadly unchanged expected yield differentials -- could change considerably the above conclusions -- a possibility that has to be considered at least briefly.

56. The scope for portfolio diversification could be considerably smaller in coming years than over the last decade or so, possibly with the exception of

U.S. portfolios. The major changes in the international financial landscape recorded since 1980 are unlikely to be repeated, and diversification could become a more discrete process, reflecting the progressive evolution of markets, institutions and regulations. As for the direction of diversification and its impact on exchange rates, while for a few years, on balance, it could continue to be favourable for the dollar, over the longer-run it could become more neutral and even turn against this currency. On the plus side, financial liberalisation and innovation -- which in many countries still has considerable scope for expansion -- is presumably increasing the number of participants in international finance and, other things being equal, should further increase the desired share of dollar assets in non-U.S. private portfolios (17). Second, the complete abolition of all remaining exchange controls in most EC countries -- scheduled to take place by 1st July, 1990 -- should allow the actual share of dollar assets in portfolios, especially in Italy and France, to rise to the desired level.

57. But other factors could progressively work to reduce the desired share of dollar assets. Among the attractions of dollar investments is the liquidity and diversification of dollar markets and the fact that Japanese investors feel particularly comfortable in dealing in U.S. securities. As the sophistication of these investors increases, progress towards capital market liberalisation and integration in Europe should significantly enhance the relative attractiveness of investment in European currencies. The political and economic changes underway in Eastern Europe could play a major role here, leading investors to focus on Europe in general and Germany in particular -- a process which seems to have already started. Moreover, the growing importance of the ECU in financial transactions -- notably bond issuance -- combined with the creation of the EC single market and progress toward some form of monetary union in Europe, over the longer-term could result in a significant erosion of the status of the dollar as "the" international currency. Similarly, the further development and opening up of yen markets could make these a more attractive alternative to dollar investments, and lead non-U.S. investors to diversify more broadly their international portfolios.

58. These considerations could also work to boost the desired share of foreign-currency assets in U.S. private portfolios in coming years, thus further eroding the portfolio balance effects that are now underpinning the

demand for dollars. The net foreign-currency position of the U.S. private sector as a percentage of GNP has remained remarkably stable over the last decade or so, at around 1 per cent, (Chart E). This contrast sharply with the dollar position of the non-U.S. private sector which, as a percentage of GDP, has increased from practically zero in 1978 to nearly 11 per cent in 1988 (Chart B). The much lower U.S. percentage can be interpreted as reflecting the limited attractiveness of international portfolio diversification for a very large economy. But the fact that this percentage seems to have been essentially unaffected by the wave of financial liberalisation and integration which has swept the developed world, as well as by the emergence of Asia and Europe as major financial and economic powers is more perplexing.

59. To a certain extent, this may be evidence that spot figures are a poor proxy for overall exchange-rate exposure. The little information available suggests that while U.S. investors rarely hedge their exchange-rate risk, U.S. companies which borrow in foreign currencies typically cover their exchange-rate exposure by swapping the proceeds into dollars or through other techniques. For instance, if four-fifths of the proceeds of foreign-currency borrowing since 1980 have been swapped into dollars, this would represent a decrease of foreign-currency liabilities and an increase of the net foreign currency position of the U.S. private sector of some $30 billion or 1/2 per cent of GNP. But even allowing for this factor, in view of the sharp rise in U.S. share prices over this period it is doubtful whether the share of foreign-currency assets in U.S. portfolios has increased at all.

60. Hence, the potential for diversification of U.S. portfolios into assets denominated in foreign currencies, should markets outside the United States come to be seen as offering comparable depth and liquidity with dollar markets, would seem very large, indeed. And the impact on the position of the dollar could also be important. For example, the proportion of foreign-currency assets in U.S. total pension funds is around 3 per cent; with these funds representing over $2 trillion, an increase of this proportion by even only 1 percentage point a year would now represent an additional supply of dollar assets of over $20 billion a year.

61. In conclusion, the current confluence of underlying factors favourable to the dollar may prove only temporary as the U.S. balance on non-financial

transactions and the global supply of dollar assets may deteriorate again and the catching-up process of non-U.S. portfolios is likely to taper off. Nonetheless, provided the conditions are right -- that is, essentially if confidence in the U.S. economy and in U.S. economic policy in general is not undermined, and if the market does not form a negative view of the external adjustment process and its implications for exchange rates -- a desire of investors to at least maintain the share of dollar assets in their portfolios should continue, for a time at least, to provide underpinning for the dollar, even if not sufficient to fully absorb the likely future supply of new dollar assets. Over the longer-run, however, as financial markets outside the United States increase their breadth and depth, portfolio considerations may become less supportive of the dollar (18).

ANNEX A

Sources and methodology

This annex gives an item-by-item presentation of the statistical sources and estimation techniques used for the calculation of the net dollar position of the non-U.S. private sector in Table 5.

Line 1: "U.S. international investment position":
Source: Table 1, line 1, "The International Investment Position of the United States in 1988", Survey of Current Business, U.S. Department of Commerce, June 1989 [1].

Line 2: Total U.S. assets abroad"
Source: Table 1, line 2 [1].

Line 3: "Total foreign assets in the United States"
Source: Table 1, line 20[1].

Line 5a: "U.S. official reserve assets"
Source: Table 1, line 3 [1].

Line 5b: "U.S. government assets (other than official reserve assets) which are claims on the non-U.S. private sector".
Source: Table 1, line 8 [1]. The split of these assets between claims on the non-U.S. public sector and non-U.S. private sector is not readily available. While awaiting for more information, it has been assumed that only half of the total shown in line 8 represents claims on the non-U.S. public sector.

Line 5c: "U.S. banks' claims on foreign public borrowers"
Source: Table A62-3.19, Federal Reserve Bulletin, September 1989 [2].

Line 5d: "Net compensatory finance in bonds in the United States"
Source: OECD Secretariat. Gross issuance figures are from the Capital Market Division, Directorate for Financial, Fiscal and Enterprise Affairs. Redemptions have been estimated (see Annex B).

Line 5e: "Foreign official assets in the United States"
Source: Table 1, line 21 [1].

Line 7a: "U.S. government foreign-currency claims on non-U.S. private sector". In line with the approach adopted for line 5b, this item has been estimated to be one half of total U.S. government foreign-currency claims on foreigners.
Source: Table 2, lines 11 and 12 [1].

Line 7b: "U.S. holdings of foreign corporate stocks".
Source: Table 2, line 17 [1].

Line 7c: "U.S. holdings of foreign-currency bonds"
Source: These holdings have been estimated on the basis of the exchange-rate valuation adjustment on foreign bonds shown in Table 1, line 16 [1], combined with flow figures for transactions in outstanding foreign bonds reported in Table 6, line 28, "U.S. International Transactions, Fourth Quarter and Year 1988", Survey of Current Business, U.S. Department of Commerce, March 1989 [3].

Line 7d: "U.S. banks' claims on foreigners in foreign currencies"
Source: Table A58-3.16, lines 3 plus 5 [2].

Line 7e: "U.S. non-banks' claims on foreigners in foreigners currencies"
Source: Table A66-3.23, line 3 [2].

Line 7f: "U.S. direct investment abroad"
Source: Table 1, line 14 [1].

Line 7g: "U.S. treasury securities in foreign currencies (Carter bonds)"
Source: Table IFS-3, U.S. Treasury Bulletin, various issues.

Line 7h: "U.S. corporate and other bonds in foreign currencies"
Source: Table P [3], cumulation of flow figures of new issues in foreign currencies.

Line 7i: "U.S. banks' liabilities to foreigners in foreign currencies"
Source: Table A58-3.16, line 1 [2].

Line 7j: "U.S. non-banks' liabilities to foreigners in foreign currencies"
Source: Table A64-3.22, line 3 [2].

Line 9a: "Net compensatory finance in dollars outside the United States"
Source: OECD Secretariat. Gross issuance figures are from the Capital Market Division, Directorate for Financial, Fiscal and Enterprise Affairs. Redemptions have been estimated (see Annex B).

Line 9b: "Official dollar reserves held outside the United States"
Source: These figures have been partly estimated by the OECD Secretariat, see Annex C.

Line 11a: "Foreign direct investment in the United States"
Source: Table 1, line 29 [1].

Line 11b: "Errors and omissions item of the U.S. BoP cumulated since 1960"
Source: Table 1-2, line 65 [3].

Line 14: "Net position in foreign currencies of the U.S. public sector". This item is the sum of U.S. official reserve assets (line 5a above) and U.S. government assets (other than official reserve assets) denominated in foreign currencies. (Source: Table 1, lines 11 and 12 [1]) net of nonmarketable U.S. Treasury bonds and notes denominated in foreign currencies sold to the non-U.S. private sector (Carter bonds) and to foreign official institutions (Source: Table IFS-3, U.S. Treasury Bulletin, various issues.

ANNEX B

Compensatory finance

Compensatory finance is generally defined as foreign-currency borrowing in private financial markets by the public sector (including the monetary authorities, central, local and state government, and public enterprises) undertaken primarily for balance-of-payments purposes. But for the calculation of the net dollar position of the non-U.S. private sector what is relevant is this sector's total holdings of dollar claims on the non-U.S. public sector, regardless of the reason why these claims were created. Hence, in this paper, compensatory finance will be given a broad interpretation to include all dollar borrowing by the non-U.S. public sector in private financial markets. Because the net dollar position of the non-U.S. private sector is the sum of its position vis-à-vis the United States and vis-à-vis the non-U.S. public sector it will be necessary to distinguish between compensatory finance (in dollars) in the United States (Table A1, lines 5C plus 5d) and compensatory finance (in dollars) outside the United States (Table 5, line 9a). But in the context of the "flow analysis" developed in Section IV, compensatory finance will always refer to changes in the total (Table 3, line 5).

The figures for compensatory finance in dollars used here (Table 2, line 7 and Table 5, line 16) are based on gross issuance figures collected by the OECD Secretariat (Capital Market Division, Directorate for Financial, Fiscal and Enterprise Affairs) and redemption figures estimated by the Secretariat. With respect to gross issuance figures, the following points must be noted. First, data for less developed countries do not include loans extended by international organisations. For the purpose of this analysis this seems quite appropriate since the aim is to quantify the amount of dollar assets issued by the non-U.S. public sector and absorbed by the private sector; and to the extent that the international organisations concerned financed these loans by issuing dollar denominated bonds these should be included in the gross issuance figures used here. Data for LDCs also exclude credits carrying a guarantee by export-credit agencies. Ideally, only a portion of these credits should be included that is, credits in dollars extended by the non-U.S. private sector to the LDCs public sector (credits

extended by U.S. official agencies to the LDCs private sector are supposedly included in data on the U.S. international investment positions).

Second, these are elements of both over-statement and under-statement in these gross figures. They are overestimates because: (a) bank loans are commitments rather than drawdowns; and (b) early redemptions of bonds have been especially large in recent years. On the other hand, these figures are under-estimates because: (a) bank loans exclude deals which have not been publicised; and (b) short-term paper (commercial paper) is not included. Commercial paper issued in the United States by the non-U.S. public sector has not been very large and the amount outstanding may be only a few billion dollars. On the other hand, Euronotes have grown very rapidly over the last few years, reaching an outstanding amount of over $60 billion. But for this paper, only dollar notes issued by the non-U.S. public sector should be considered, and this cannot be estimated with any precision. The amount is probably not insignificant but several borrowers (notably Sweden) have issued Eoronotes to finance early redemptions of bonds. Hence, there seems to be an important element of offset between the gross issuance figures and the simple repayment scheme assumed below.

Third, it is not entirely appropriate to assume that these figures represent equivalent foreign exchange exposure in dollars. Many bonds and credits incorporate multi-currency options and a growing proportion of Eurobonds seems to be swapped into other currencies. In fact, the Eurobond market is becoming increasingly "swap-driven", especially its non-dollar segment, with non-dollar bonds often swapped into dollars.

As for repayments, they have been calculated assuming an average maturity of ten years for bonds issued in the United States ("Foreign bonds" in Tables 6 and 7), seven years for bonds issued in the Eurobond market ("International bonds"), and six years for syndicated bank loans. It was also assumed linear repayments and zero net stocks before 1972.

Table 6 presents data for compensatory finance in dollars in terms of flows: gross flows (Table 6A), repayments (Table 6B), and net flows (Table 6C). Table 7 presents data for stocks: gross stocks (Table 7A), and net stocks (Table 7B).

ANNEX C

Official dollar reserves

For the calculation of the dollar position of the non-U.S. private sector data on official dollar assets held outside the United States are necessary; and for the quantification of the absorption of new dollar assets by the non-U.S. private sector, changes in global official dollar reserves are needed. But neither series exists. Hence, first, a series for global dollar reserves was estimated and then, its split into holdings in the United States and holdings outside the United States was calculated.

The International Monetary Fund (IMF) in its Annual Report publishes data on the currency composition of official holdings of foreign exchange (Table 1.3, Annex I). But these data include only "identified holdings", and in the case of the dollar exclude ECUs issued against dollars -- which, for the purpose of this Paper should be included. The IMF also publishes shares of national currencies in total identified official holdings of foreign exchange (Table 1.2, Appendix I, Annual Report, 1989). Here, dollar shares are calculated including ECUs issued against dollars.

Hence, using data shown in both tables it is possible to calculate a series of identified official dollar holdings, including ECUs issued against dollars. First, on the basis of the share of any currency other than the dollar (23) in Table 1.2 and the corresponding absolute amounts of official holdings in that currency, derive the total identified official holdings of foreign exchange from which the shares in Table 1.2 have been calculated (24). Then, using these total holdings and the corresponding share of dollar holdings derive the absolute amounts of dollar holdings.

The second problem is that this series of official dollar holdings is based on identified official holdings of foreign exchange which, at end-1988, represented only 84 per cent of total official holdings of foreign exchange reported by the IMF (in its Annual Report as well as in International Financial Statistics). Allowing for problems of rounding, this unidentified portion seems to correspond exactly to official foreign exchange holdings of

Taiwan (as reported in International Financial Statistics). Given the size of these holdings (nearly $74 billion at end-1988) and their heavy concentration in dollars, it is important to include them in the derivation of a series on global dollar reserves -- even if their exact currency composition is not available. But their dollar share can probably be approximated with a tolerable degree of approximation from official statements occasionally reported in the press. This share has been assumed to be 95 per cent until end-1986; 80 per cent at end-1987; and 75 per cent at end-1988.

Once a series for global dollar reserves has been calculated its split into holdings in the United States and holdings outside the United States can be performed by deducting from the total those U.S. liabilities to foreign official institutions which are likely to be treated by these institutions as representing reserve assets and included in their reported holdings of foreign exchange. These liabilities are:

i) Liabilities reported by banks in the United States;

ii) U.S. Treasury bills and certificates;

iii) Marketable U.S. Treasury bonds and notes.

For all three items the source is: Table A58 - 3.15, Federal Reserve Bulletin, September 1989 and previous issues.

NOTES

1. A notable exception is the recently published "The U.S. External Deficit and Associated Shifts in International Portfolios" by Michael Dealty and Jozef Van't dack, BIS Economic Papers No. 25, September 1989. The authors essentially follow what below is characterised as a "gross approach".

2. The exclusion of foreign direct investment from the analysis has the incidental but not negligible advantage of avoiding the thorny problem of their valuations.

3. As published every June in the "Survey of Current Business", U.S. Department of Commerce.

4. A detailed, item-by-item calculation is presented in T.5, and discussed in Annex A.

5. Some of the excluded items, notably monetary gold, strictly speaking are not claims on any specific sector.

6. For the purposes of this paper, compensatory finance is defined as foreign-currency borrowing in private financial markets by the public sector -- including the monetary authorities, central, local and state governments, and public enterprises (Annex B).

7. Although in practice -- and, to a certain extent, also conceptually -- the distinction between direct investment positions and financial positions can be quite blurred, the latter should be a better proximate variable for an analysis relying on standard portfolio theory. While exchange-rate and interest-rate considerations, even short-term ones, may have a strong impact on private investors' decisions concerning financial assets, they normally have less impact on foreign direct investment which are generally determined by a larger number of variables, and longer-term considerations.

8. Alternatively, the depreciation of the dollar has reduced the value, in local currencies, of a given stock of dollar assets, and hence reduced the share of dollar assets in portfolios expressed in local currencies.

9. See Michael Dealtry and Jozef Van't dack, op.cit. Table 3, page 15.

10. The classification of direct investment as a non-financial flow is not without problems, especially in the case of the United States. U.S. historical data on direct investment, include a significant financial component, reflecting primarily U.S. corporations' borrowing abroad through their finance affiliates in the Netherlands Antilles in the late-1970s and early-1980s, and net repayments of these borrowings in subsequent years.

11. Strictly speaking, this is not true for U.S. direct investment since, contrary to standard accounting practice, U.S. balance-of-payments data include certain capital gains/losses on the stock of direct investment. Hence, the flow of U.S. direct investment abroad is affected by the exchange rate valuation effect on such stocks. But since the same exchange rate valuation effect is included (with the opposite sign) in the current account (direct investment income) the U.S. balance on non-financial transaction is not affected by this effect and accounting practice.

12. This assimilation would be invalidated if the U.S. net position in foreign currencies were to change significantly reflecting the decision of residents either to increase the share of assets denominated in foreign currencies in their portfolios, or to step-up the issuance of liabilities denominated in foreign-currencies thereby ending the nearly-exclusive dollar financing aspect of the U.S. current-account deficit. In the first case, the flow of dollar assets to the rest of the world would be larger than the U.S. balance on non-financial transactions; in the second case it would be smaller.

13. At times, countries may engage both in compensatory finance in dollars and in an accumulation of official dollar reserves, creating a kind of

circular flow with offsetting impact on the net supply of dollar assets and the exchange rate. Hence, ideally, compensatory finance should be adjusted for such "induced" changes in official dollar reserves.

14. This rate is higher than the average annual rate of growth of nominal GNP/GDP for the OECD area (8.3 per cent from 1980 to 1988). But the sharp increase in equity prices in practically all countries since 1980, might perhaps have justified an even higher rate. The rise and fall of the dollar should have been reflected, first, in somewhat lower rates of growth and then in somewhat higher rates of growth of non-U.S. portfolios than indicated. On a net basis, the effective rate of the dollar did not change much over this period.

15. It is nonetheless true that the strength of the dollar in 1981-84 may look a little less "surprising" when compared to the evolution of the net supply of dollar assets than to the U.S. current account alone. While the latter increased by over $100 billion over this period, the former increased by only some $60 billion -- the difference essentially reflecting a $30 billion swing in compensatory finance from net issues to net repayments.

16. An additional element which may help to explain both the recent strength of the dollar and the weakness of the yen is the extremely rapid increase in asset prices and notably land prices in Japan which causes Japanese wealth and portfolios to grow faster than private savings. As a result of this "asset price inflation", intended capital outflows related to portfolio considerations may exceed the current-account surplus and put downward pressure on the yen, especially vis-à-vis the dollar. The very large capital gains on domestic assets also tend to reduce the proportion of foreign assets in total portfolios and favour an increase in the share of foreign assets in financial portfolios.

17. But Japan may not be a valid reference here. Because of its special political and economic ties with the United States, Japan is probably an extreme case and few other OECD countries can be expected to aim for such a high share of dollar assets in their portfolios as Japan -- even

though they might have a higher overall share of foreign-currency assets.

18. If this reduction in the role of the dollar as "the" portfolio currency took place progressively and were accompanied by an orderly correction of the U.S. current-account deficit the result could be a significantly smaller risk of disruptions in the international monetary area. Even in a world of liberalised and integrated financial markets, excessive reliance on a national currency as "the" portfolio currency may entail considerable risks and pose a systemic threat. For instance, the investment strategy of international portfolio holders may hinder efforts by the monetary authorities to bring exchange rates more in line with underlying economic conditions and assure a smooth adjustment of external imbalances, with the danger of a disruptive reaction at a later stage. More important, perhaps, the country whose currency plays the role of "the" portfolio currency is both required and allowed to run persistent current-account deficits, and the seemingly endless piling up of net external liabilities eventually may result in a crisis of confidence. Hence, such a system -- somewhat like the gold-exchange standard and dollar reserve standard -- may be seen as being inherently fragile, if not as carrying in itself the seeds of its own destruction.

Table 1

Derivation of the dollar position of the non-US private sector: Summary presentation

$ billion

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. US international investment position	**67.7**	**56.2**	**37.6**	**47.9**	**58.7**	**74.2**	**83.7**	**72.7**	**76.1**	**94.5**	**106.3**	**140.9**	**136.7**	**89.0**	**3.3**	**-111.4**	**-267.8**	**-378.3**	**-532.6**
2. Position of the rest of the world v-a-v the US (line 1 with sign reversed)	**-67.7**	**-56.2**	**-37.6**	**-47.9**	**-58.7**	**-74.2**	**-83.7**	**-72.7**	**-76.1**	**-94.5**	**-106.3**	**-140.9**	**-136.7**	**-89.0**	**-3.3**	**111.4**	**267.8**	**378.3**	**532.6**
3. First adjustment : to exclude the net position of the non-US public sector v-a-v the US (a)	6.2	-23.2	-30.6	-32.9	-39.8	-40.0	-45.1	-70.1	-93.1	-71.4	-73.4	-59.9	-46.3	-38.1	-35.7	-32.0	-60.9	-105.6	-146.5
4. Position of the non-US private sector v-a-v the US	**-61.5**	**-79.4**	**-68.2**	**-80.8**	**-98.5**	**-114.2**	**-128.8**	**-142.8**	**-169.2**	**-165.9**	**-179.7**	**-200.8**	**-183.0**	**-127.1**	**-39.0**	**79.4**	**206.9**	**272.7**	**386.1**
5. Second adjustment : to exclude the net non-dollar position of the non-US private sector v-a-v the US (b)	89.3	98.2	108.1	119.3	126.6	143.2	158.6	169.8	186.2	211.7	242.7	256.3	242.3	250.3	256.0	277.9	308.4	363.9	381.0
6. Dollar position of the non-US private sector v-a-v the US	**27.8**	**18.8**	**39.9**	**38.5**	**28.1**	**29.0**	**29.8**	**27.0**	**17.0**	**45.8**	**63.0**	**55.5**	**59.3**	**123.2**	**217.0**	**357.3**	**515.3**	**636.6**	**767.1**
7. Third adjustment : to include the net dollar position of the non-US private sector v-a-v the non-US public sector	..	..	-40.1	-38.5	-34.6	-24.8	-14.9	-16.3	22.3	49.6	80.7	94.1	138.3	140.6	128.2	125.3	91.7	-1.4	27.7
8. Dollar position of the non-US private sector (identified real and financial assets)	..	..	**-0.2**	**-0.0**	**-6.5**	**4.2**	**14.9**	**10.7**	**39.3**	**95.4**	**143.7**	**149.6**	**197.6**	**263.8**	**345.2**	**482.6**	**607.0**	**635.2**	**794.8**
9. Fourth adjustment: to exclude foreign direct investment in the US and to include the cumulated BoP errors and omissions item	-19.0	-29.4	-32.3	-40.6	-46.7	-43.4	-36.0	-41.8	-37.2	-23.8	-28.0	-34.0	-15.6	-18.8	-22.4	-27.1	-51.6	-101.1	-168.8
10. Dollar position of the non-US private sector	..	..	**-32.5**	**-40.6**	**-53.2**	**-39.2**	**-21.1**	**-31.1**	**2.1**	**71.6**	**115.7**	**115.6**	**182.0**	**245.0**	**322.8**	**455.5**	**555.4**	**534.1**	**626.0**

(a) That is, the net position of the United States vis-a-vis the non-US public sector with sign reversed
(b) That is, the net foreign currency position of the United States vis-a-vis the non-US private sector with sign reversed

Table 2

Derivation of the dollar position of the non-US private sector: alternative summary presentation

$ billion

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. US international investment position	**67.7**	**56.2**	**37.6**	**47.9**	**58.7**	**74.2**	**83.7**	**72.7**	**76.1**	**94.5**	**106.3**	**140.9**	**136.7**	**89.0**	**3.3**	**-111.4**	**-267.8**	**-378.3**	**-532.6**
2. US international investment position, adjusted	**-20.2**	**-27.1**	**-53.7**	**-47.8**	**-38.1**	**-42.9**	**-58.7**	**-76.5**	**-93.7**	**-114.5**	**-137.1**	**-112.2**	**-125.8**	**-177.9**	**-267.1**	**-407.1**	**-574.3**	**-687.9**	**-793.6**
3. Dollar position of the rest of the world (line 2 with sign reversed)	**20.2**	**27.1**	**53.7**	**47.8**	**38.1**	**42.9**	**58.7**	**76.5**	**93.7**	**114.5**	**137.1**	**112.2**	**125.8**	**177.9**	**267.1**	**407.1**	**574.3**	**687.9**	**793.6**
4. Dollar position of the non-US public sector	..	..	..	..	91.4	82.0	79.8	107.6	91.7	42.9	21.4	-3.4	-56.2	-67.1	-55.8	-48.8	18.9	153.9	167.6
a) net claims on the US	11.4	37.7	46.2	49.9	56.8	57.2	64.9	91.3	114.0	92.5	102.1	90.7	82.1	73.5	72.4	76.5	110.6	152.5	195.3
b) net claims on the non-US private sector	..	..	40.1	38.5	34.6	24.8	14.9	16.3	-22.3	-49.6	-80.7	-94.1	-138.3	-140.6	-128.2	-125.3	-91.7	1.4	-27.7
-gross claims (official $ reserves held outside the US)	16.4	27.9	45.8	59.4	73.8	72.8	77.3	95.0	95.1	102.2	87.9	88.7	62.7	59.7	59.7	56.6	87.6	167.7	122.1
-gross liabilities (compensatory finance in $, outside the US)	..	..	5.7	20.9	39.2	48.0	62.4	78.7	117.4	151.8	168.6	182.8	201.0	200.3	187.9	181.9	179.3	166.3	149.8
5. Dollar position of the non-US private sector	..	..	**-32.5**	**-40.6**	**-53.2**	**-39.2**	**-21.1**	**-31.1**	**2.1**	**71.6**	**115.7**	**115.6**	**182.0**	**245.0**	**322.8**	**455.5**	**555.4**	**534.1**	**626.0**
a) net claims on the US	8.8	-10.6	7.6	-2.1	-18.6	-14.4	-6.2	-14.8	-20.2	22.0	35.0	21.5	43.7	104.4	194.6	330.2	463.7	535.5	598.3
-identified	14.5	4.9	25.0	17.9	3.0	1.3	-1.0	-7.6	-25.5	-8.7	-21.0	-53.2	-65.4	-13.9	52.4	172.7	294.9	364.8	438.2
-non-identified	-5.7	-15.5	-17.4	-20.0	-21.6	-15.7	-5.2	-7.2	5.3	30.7	56.0	74.7	109.1	118.3	142.2	157.5	168.8	170.7	160.1
b) net claims of the non-US public sector	..	..	-40.1	-38.5	-34.6	-24.8	-14.9	-16.3	22.3	49.6	80.7	94.1	138.3	140.6	128.2	125.3	91.7	-1.4	27.7
Memorandum items																			
6. Adjustment item (of line 2)	-87.9	-83.3	-91.3	-95.7	-96.8	-117.1	-142.4	-149.2	-169.8	-209.0	-243.4	-253.1	-262.5	-266.9	-270.4	-295.7	-306.5	-309.6	-261.0
a) US direct investment position (excluded)	-62.2	-69.1	-75.0	-80.7	-85.0	-96.4	-106.0	-111.4	-120.2	-133.4	-131.4	-119.6	-83.1	-70.1	-46.9	-45.7	-39.4	-36.2	2.0
b) cumulated errors and omissions item of the US BoP (included with sign reversed)	5.7	15.5	17.4	20.0	21.6	15.7	5.2	7.2	-5.3	-30.7	-56.0	-74.7	-109.1	-118.3	-142.2	-157.5	-168.8	-170.7	-160.1
c) US position in foreign currencies (excluded)	-31.4	-29.7	-33.7	-35.0	-33.4	-36.4	-41.6	-45.0	-44.3	-44.9	-56.0	-58.8	-70.3	-78.5	-81.3	-92.5	-98.3	-102.7	-102.9
- US public sector	-22.0	-18.8	-19.4	-21.1	-19.6	-19.8	-22.2	-23.4	-21.4	-18.0	-24.3	-28.6	-37.0	-37.2	-38.7	-46.7	-50.9	-48.1	-49.9
- US private sector	-9.4	-10.9	-14.3	-13.9	-13.8	-16.6	-19.4	-21.6	-22.9	-26.9	-31.7	-30.2	-33.3	-41.3	-42.6	-45.8	-47.4	-54.6	-53.0
7. Net compensatory finance in dollars	..	..	**7.0**	**23.5**	**44.2**	**57.8**	**80.0**	**105.4**	**151.6**	**192.0**	**212.7**	**238.9**	**272.5**	**283.3**	**274.2**	**265.6**	**267.0**	**254.4**	**234.9**
a. In the US	..	..	1.3	2.6	5.0	9.8	17.6	26.7	34.2	40.2	44.1	56.1	71.5	83.0	86.3	83.7	87.7	88.1	85.1
b. Outside the US	..	..	5.7	20.9	39.2	48.0	62.4	78.7	117.4	151.8	168.6	182.8	201.0	200.3	187.9	181.9	179.3	166.3	149.8

Table 3

Sources and absorption of new dollar assets

$ billion

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 S1 a.r
1. US current-account deficit (a)	-18.1	-4.2	14.5	15.4	1.0	-1.5	-8.2	7.0	44.3	104.2	112.7	133.2	143.7	126.5	113.5
2. US direct investment outflows (net) (a)	11.6	7.6	8.2	8.2	13.3	2.3	-15.6	-16.2	-11.6	-22.5	-1.0	-7.8	-2.7	-40.9	-41.2
3. Us official capital outflows (a)	2.0	-0.4	2.3	2.2	3.8	4.5	5.4	5.5	4.4	4.7	1.9	-0.1	1.5	-1.7	-1.3
4. US balance on non-financial transactions	**-4.5**	**3.0**	**25.0**	**25.8**	**18.1**	**5.3**	**-18.4**	**-3.7**	**37.1**	**86.4**	**113.6**	**125.3**	**142.5**	**83.9**	**71.0**
5. Compensatory finance in dollars (b)	13.6	22.2	25.4	46.2	40.4	20.7	26.2	33.6	10.8	-9.1	-8.6	1.4	-12.6	-19.5	-16.5
6. Global supply of dollar assets (c)	**9.1**	**25.2**	**50.4**	**72.0**	**58.5**	**26.0**	**7.8**	**29.9**	**47.9**	**77.3**	**105.0**	**126.7**	**129.9**	**64.4**	**54.3**
7. Apsorption of dollar assets by monetary authorities	-3.0	15.0	49.0	29.0	-4.0	-2.0	5.0	-19.0	6.0	15.2	10.1	49.3	128.2	-4.5	..
8. Implied absorption of dollar assets by the non-US private sector (d)	12.1	10.2	1.4	43.0	62.5	28.0	2.8	48.9	41.9	62.1	94.9	77.4	1.7	68.9	..
9. Total absorption of dollar assets	**9.1**	**25.2**	**50.4**	**72.0**	**58.5**	**26.0**	**7.8**	**29.9**	**47.9**	**77.3**	**105.0**	**126.7**	**129.9**	**64.4**	..
Memorandum items															
10. Hypothetical constant portfolio composition effect (e)	..	..	..	..	..	4.5	8.4	8.5	14.9	20.4	28.0	41.0	50.8	47.9	57.3

a) + = deficits or outflows
b) borrowing of the non-US public sector in private financial markets. Net flows
c) Lines 4 plus 5
d) Lines 6 minus 7
e) Assuming an average anual rate of growth of private portfolio of 10 per cent.

Table 4

Sensitivity of the constant portfolio composition effect to alternative growth rates of private portfolios (1)

$ billion

Average annual growth rate of private portfolios		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
6%	Non-U.S.	38	40	42	45	47	50	53	56	60	63
	U.S.	3	3	4	4	4	4	5	5	5	5
	Net	35	37	38	41	43	46	48	51	55	58
7%	Non-U.S.	44	46	50	53	57	61	65	70	75	80
	U.S.	4	4	4	5	5	5	6	6	6	7
	Net	40	42	46	48	52	56	59	64	69	73
8%	Non-U.S.	50	53	57	62	67	72	78	84	91	98
	U.S.	4	5	5	5	6	6	7	7	8	8
	Net	46	48	52	57	61	66	71	77	83	90
9%	Non-U.S.	56	61	67	73	80	87	94	103	112	122
	U.S.	5	5	6	6	7	7	8	9	10	10
	Net	51	56	61	67	73	80	86	94	102	112
10%	Non-U.S.	63	69	76	83	92	101	111	122	134	148
	U.S.	5	6	6	7	8	9	9	10	11	12
	Net	58	63	70	76	84	92	102	112	123	136
11%	Non-U.S.	69	76	85	94	105	116	129	143	159	176
	U.S.	6	6	7	8	9	10	11	12	13	15
	Net	63	70	78	86	96	106	118	131	146	161
12%	Non-U.S.	75	84	94	106	118	132	148	166	186	208
	U.S.	6	7	8	9	10	11	13	14	16	18
	Net	69	77	86	97	108	121	135	152	170	190

1. Based on a net dollar position of the non-U.S. private sector of $626 billion at end 1988 (excluding direct investment in the United States) and a net foreign currency position of the U.S. private sector of $53 billion (excluding U.S. direct investment abroad).

Table 5

Derivation of the dollar position of the non-US private sector

$ billion

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. US international investment position (lines 2+3)	**67.7**	**56.2**	**37.6**	**47.9**	**58.7**	**74.2**	**83.7**	**72.7**	**76.1**	**94.5**	**106.3**	**140.9**	**136.7**	**89.0**	**3.3**	**-111.4**	**-267.8**	**-378.3**	**-532.6**
2. Total US assets abroad	165.4	179.5	198.9	222.4	255.7	295.1	347.2	379.1	447.8	510.6	607.1	719.6	824.8	873.5	895.9	949.7	1073.3	1169.7	1253.6
3. Total foreign assets in the US	-97.7	-123.3	-161.3	-174.5	-197.0	-220.9	-263.5	-306.4	-371.7	-416.1	-500.8	-578.7	-688.1	-784.5	-892.6	-1061.1	-1341.1	-1548.0	-1786.2
4. Position of the rest of the world v-a-v the US (line 1 with sign reversed)	**-67.7**	**-56.2**	**-37.6**	**-47.9**	**-58.7**	**-74.2**	**-83.7**	**-72.7**	**-76.1**	**-94.5**	**-106.3**	**-140.9**	**-136.7**	**-89.0**	**-3.3**	**111.4**	**267.8**	**378.3**	**532.6**
5. **First adjustment** : to exclude the net position of the non-US public sector v-a-v the US (a)	6.2	-23.2	-30.6	-32.9	-39.8	-40.0	-45.1	-70.1	-93.1	-71.4	-73.4	-59.9	-46.3	-38.1	-35.7	-32.0	-60.9	-105.6	-146.5
a. US official reserve assets	14.5	12.2	13.2	14.4	15.9	16.2	18.7	19.3	18.7	19.0	26.8	30.1	34.0	33.7	34.9	43.2	48.5	45.6	47.8
b. US government assets (other than official reserve assets) which are claims on the non-US public sector	16.1	17.1	18.1	19.4	19.2	20.9	23.0	24.8	27.1	29.2	31.8	34.3	37.3	39.7	42.4	43.8	44.8	44.3	42.7
c. US banks' claims on foreign public borrowers	..	..	..	..	..	..	..	5.0	10.3	15.9	20.9	31.3	45.4	57.6	62.2	60.5	64.1	64.6	62.4
d. Net compensatory finance in bonds in the US	..	..	1.3	2.6	5.0	9.8	17.6	21.7	23.9	24.3	23.2	24.8	26.1	25.4	24.1	23.2	23.6	23.5	22.7
e. Foreign official assets in the US	-24.4	-52.5	-63.2	-69.3	-79.9	-86.9	-104.4	-140.9	-173.1	-159.8	-176.1	-180.4	-189.1	-194.5	-199.3	-202.7	-241.9	-283.6	-322.1
6. Position of the non-US private sector v-a-v the US (lines 4 + 5)	**-61.5**	**-79.4**	**-68.2**	**-80.8**	**-98.5**	**-114.2**	**-128.8**	**-142.8**	**-169.2**	**-165.9**	**-179.7**	**-200.8**	**-183.0**	**-127.1**	**-39.0**	**79.4**	**206.9**	**272.7**	**386.1**
7. **Second adjustment** : to exclude the net non-dollar position of the non-US private sector v-a-v the US (b)	89.3	98.2	108.1	119.3	126.6	143.2	158.6	169.8	186.2	211.7	242.7	256.3	242.3	250.3	256.0	277.9	308.4	363.9	381.0
a. US government foreign currency claims on non-US private sector	4.4	4.3	3.9	4.1	2.7	2.5	2.4	2.2	2.2	2.2	2.0	1.9	1.8	1.8	1.9	1.8	1.2	1.3	1.1
b. US holdings of foreign corporate stocks	6.6	7.6	10.5	10.0	9.0	9.6	9.5	10.1	11.2	14.8	19.2	17.4	18.6	25.9	27.0	37.3	50.2	54.7	62.7
c. US holdings of foreign currency bonds	2.4	2.8	3.2	3.5	4.0	5.6	8.6	9.4	10.5	10.9	11.7	10.4	11.7	12.3	12.8	15.0	16.9	27.5	28.2
d. US banks' claims on foreigners in foreign currencies	0.6	0.9	0.9	0.7	1.3	1.5	1.8	2.4	4.0	3.0	5.2	6.0	8.4	8.3	12.6	16.9	28.7	51.9	69.4
e. US non-banks' claims on foreigners in foreign currencies	0.6	0.5	0.7	0.9	1.1	1.1	1.0	1.4	3.0	3.2	3.0	3.6	2.6	3.1	2.6	2.3	2.4	2.6	2.3
f. US direct investment abroad	75.5	83.0	89.9	101.3	110.1	124.1	136.8	146.0	162.7	187.9	215.4	228.3	207.8	207.2	211.5	230.3	259.8	308.0	326.9
g. US treasury securities in foreign currencies(Carter bonds)	-	-	-	-	-	-	-	-	-1.6	-5.3	-6.4	-4.1	-0.6	-	-	-	-	-	-
h. US corporate and other bonds in foreign currencies	..	..	..	..	..	..	..	..	..	..	..	..	..	..	-0.8	-6.8	-17.3	-21.3	-29.6
i. US banks' liabilities to foreigners in foreign currencies	-0.4	-0.4	-0.5	-0.6	-0.8	-0.6	-0.8	-0.9	-2.4	-1.9	-3.7	-3.5	-4.8	-5.2	-8.6	-15.4	-29.7	-55.4	-74.8
j. US non-banks' liabilities to foreigners in foreign currencies	-0.4	-0.5	-0.5	-0.6	-0.8	-0.6	-0.7	-0.8	-3.4	-3.1	-3.7	-3.7	-3.2	-3.1	-3.0	-3.5	-3.8	-5.4	-5.2
8. Dollar position of the non-US private sector v-a-v the US (lines 6 + 7)	**27.8**	**18.8**	**39.9**	**38.5**	**28.1**	**29.0**	**29.8**	**27.0**	**17.0**	**45.8**	**63.0**	**55.5**	**59.3**	**123.2**	**217.0**	**357.3**	**515.3**	**636.6**	**767.1**

Table 5 (cont)

Derivation of the dollar position of the non-US private sector (cont)

$ billion

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
8. Dollar position of the non-US private sector v-a-v the US (lines 6 + 7)	**27.8**	**18.8**	**39.9**	**38.5**	**28.1**	**29.0**	**29.8**	**27.0**	**17.0**	**45.8**	**63.0**	**55.5**	**59.3**	**123.2**	**217.0**	**357.3**	**515.3**	**636.6**	**767.1**
9. Third adjustment : to include the dollar position of the non-US private sector v-a-v the non-US public sector	..	..	-40.1	-38.5	-34.6	-24.8	-14.9	-16.3	22.3	49.6	80.7	94.1	138.3	140.6	128.2	125.3	91.7	-1.4	27.7
a. Net compensatory finance in dollars outside the US	..	..	5.7	20.9	39.2	48.0	62.4	78.7	117.4	151.8	168.6	182.8	201.0	200.3	187.9	181.9	179.3	166.3	149.8
b. Official dollar reserves held outside the US	-16.4	-27.9	-45.8	-59.4	-73.8	-72.8	-77.3	-95.0	-95.1	-102.2	-87.9	-88.7	-62.7	-59.7	-59.7	-56.6	-87.6	-167.7	-122.1
10. Dollar position of the non-US private sector (identified real and financial positions) (lines 8 + 9)	..	..	**-0.2**	**-0.0**	**-6.5**	**4.2**	**14.9**	**10.7**	**39.3**	**95.4**	**143.7**	**149.6**	**197.6**	**263.8**	**345.2**	**482.6**	**607.0**	**635.2**	**794.8**
11. Fourth adjustment : to exclude real dollar assets and include an estimate of unidentified financial dollar assets	-19.0	-29.4	-32.3	-40.6	-46.7	-43.4	-36.0	-41.8	-37.2	-23.8	-28.0	-34.0	-15.6	-18.8	-22.4	-27.1	-51.6	-101.1	-168.8
a. Foreign direct investment in the US	-13.3	-13.9	-14.9	-20.6	-25.1	-27.7	-30.8	-34.6	-42.5	-54.5	-84.0	-108.7	-124.7	-137.1	-164.6	-184.6	-220.4	-271.8	-328.9
b. Errors and omissions item of the US BoP cumulated since 1960	-5.7	-15.5	-17.4	-20.0	-21.6	-15.7	-5.2	-7.2	5.3	30.7	56.0	74.7	109.1	118.3	142.2	157.5	168.8	170.7	160.1
12. Dollar position of the non-US private sector (lines 10 + 11)	..	..	**-32.5**	**-40.6**	**-53.2**	**-39.2**	**-21.1**	**-31.1**	**2.1**	**71.6**	**115.7**	**115.6**	**182.0**	**245.0**	**322.8**	**455.5**	**555.4**	**534.1**	**626.0**
Memorandum items :																			
13. Net position in foreign currencies of the US private sector	**84.9**	**93.9**	**104.2**	**115.2**	**123.9**	**140.7**	**156.2**	**167.6**	**185.6**	**214.8**	**247.1**	**258.5**	**241.1**	**248.5**	**254.1**	**276.1**	**307.2**	**362.6**	**379.9**
a. In financial assets (c)	9.4	10.9	14.3	13.9	13.8	16.6	19.4	21.6	22.9	26.9	31.7	30.2	33.3	41.3	42.6	45.8	47.4	54.6	53.0
b. In real assets (US direct investment abroad) (d)	75.5	83.0	89.9	101.3	110.1	124.1	136.8	146.0	162.7	187.9	215.4	228.3	207.8	207.2	211.5	230.3	259.8	308.0	326.9
14. Net position in foreign currencies of the US public sector	**22.0**	**18.8**	**19.4**	**21.1**	**19.7**	**19.6**	**21.9**	**22.5**	**21.1**	**18.0**	**24.3**	**29.7**	**35.9**	**37.2**	**38.7**	**46.7**	**50.9**	**48.3**	**49.9**
15. Net US position in foreign currencies (lines 13 + 14)	**106.9**	**112.7**	**123.6**	**136.3**	**143.6**	**160.3**	**178.1**	**190.1**	**206.7**	**232.8**	**271.4**	**288.2**	**277.0**	**285.7**	**292.8**	**322.8**	**358.1**	**410.9**	**429.8**
a. In financial assets	31.4	29.7	33.7	35.0	33.5	36.2	41.3	44.1	44.0	44.9	56.0	59.9	69.2	78.5	81.3	92.5	98.3	102.9	102.9
b. In real assets	75.5	83.0	89.9	101.3	110.1	124.1	136.8	146.0	162.7	187.9	215.4	228.3	207.8	207.2	211.5	230.3	259.8	308.0	326.9
16. Net compensatory finance in dollars	..	..	**7.0**	**23.5**	**44.2**	**57.8**	**80.0**	**105.4**	**151.6**	**192.0**	**212.7**	**238.9**	**272.5**	**283.3**	**274.2**	**265.6**	**267.0**	**254.4**	**234.9**
a. In the US	..	..	1.3	2.6	5.0	9.8	17.6	26.7	34.2	40.2	44.1	56.1	71.5	83.0	86.3	83.7	87.7	88.1	85.1
b. Outside the US	..	..	5.7	20.9	39.2	48.0	62.4	78.7	117.4	151.8	168.6	182.8	201.0	200.3	187.9	181.9	179.3	166.3	149.8

(a) That is, the net position of the United States vis-a-vis the non-US public sector with sign reversed
(b) That is, the net foreign currency position of the United States vis-a-vis the non-US private sector with sign reversed
(c) Lines 7b + 7c + 7d + 7e + 7h + 7i + 7j
(d) Line 7f

Table 6A

Compensatory finance in dollars: flows (1)

billion $

	Gross flows						
	In the United States			Outside the United States			Total
	Bonds (2)	Banks (3)	Total	Bonds (4)	Banks (5)	Total	
1972	1.3	..	1.3	1.0	4.7	5.7	7.0
1973	1.4	..	1.4	0.8	15.3	16.1	17.5
1974	2.7	..	2.7	1.6	20.3	21.9	24.6
1975	5.3	..	5.3	1.6	14.4	16.0	21.3
1976	8.9	..	8.9	4.9	19.3	24.2	33.1
1977	6.1	5.0 (6)	11.1	4.3	25.8	30.1	41.2
1978	4.7	5.3 (6)	10.0	3.4	53.9	57.3	67.3
1979	3.5	5.6	9.1	3.4	58.3	61.7	70.8
1980	2.3	5.0	7.3	5.4	46.3	51.7	59.0
1981	5.2	10.4	15.6	6.9	47.2	54.1	69.7
1982	5.4	14.1	19.5	13.0	51.3	64.3	83.8
1983	3.9	12.2	16.1	15.7	36.6	52.3	68.4
1984	3.5	4.6	8.1	17.9	26.1	44.0	52.1
1985	4.0	-1.7	2.3	29.0	18.7	47.7	50.0
1986	5.1	3.6	8.7	34.1	14.1	48.2	56.9
1987	4.3	0.5	4.8	9.1	27.6	36.7	41.5
1988	3.4	-2.2	1.2	15.5	15.1	30.6	31.8
1989 (7)	4.4	-0.6	3.8	17.0	9.0	26.0	29.8

Table 6B

Compensatory finance in dollars: flows (1)

billion $

	Repayments						
	In the United States			Outside the United States			Total
	Bonds (8)	Banks	Total	Bonds (9)	Banks (10)	Total	
1972	-	-	-	-	-	-	-
1973	0.1	-	0.1	0.1	0.8	0.9	1.0
1974	0.3	-	0.3	0.3	3.3	3.6	3.9
1975	0.5	-	0.5	0.5	6.7	7.2	7.7
1976	1.1	-	1.1	0.7	9.1	9.8	10.9
1977	2.0	-	2.0	1.4	12.3	13.7	15.7
1978	2.6	-	2.6	2.0	16.6	18.6	21.2
1979	3.0	-	3.0	2.5	24.8	27.3	30.4
1980	3.4	-	3.4	2.9	32.0	34.9	38.3
1981	3.6	-	3.6	3.5	36.3	39.8	43.5
1982	4.1	-	4.1	4.3	41.8	46.1	50.2
1983	4.6	-	4.6	5.9	47.1	53.0	57.6
1984	4.8	-	4.8	7.4	48.9	56.3	61.2
1985	4.9	-	4.9	9.4	44.3	53.7	58.6
1986	4.8	-	4.8	13.0	37.7	50.7	55.5
1987	4.4	-	4.4	17.4	32.3	49.7	54.1
1988	4.2	-	4.2	18.0	29.1	47.1	51.3
1989 (7)	4.1	-	4.1	19.2	23.0	42.2	46.3

Table 6C

Compensatory finance in dollars: flows (1)

billion $

	Net flows						
	In the United States			Outside the United States			Total
	Bonds	Banks	Total	Bonds	Banks	Total	
1972	1.3	..	1.3	1.0	4.7	5.7	7.0
1973	1.3	..	1.3	0.7	14.5	15.2	16.5
1974	2.4	..	2.4	1.3	17.0	18.3	20.7
1975	4.8	..	4.8	1.1	7.7	8.8	13.6
1976	7.8	..	7.8	4.2	10.2	14.4	22.2
1977	4.1	5.0 (6)	9.1	2.9	13.5	16.4	25.5
1978	2.1	5.3 (6)	7.4	1.4	37.3	38.7	46.1
1979	0.5	5.6	6.1	0.9	33.5	34.4	40.4
1980	-1.1	5.0	3.9	2.5	14.3	16.8	20.7
1981	1.6	10.4	12.0	3.4	10.9	14.3	26.2
1982	1.3	14.1	15.4	8.7	9.5	18.2	33.6
1983	-0.7	12.2	11.5	9.8	-10.5	-0.7	10.8
1984	-1.3	4.6	3.3	10.4	-22.8	-12.4	-9.1
1985	-0.9	-1.7	-2.6	19.6	-25.6	-6.0	-8.6
1986	0.3	3.6	3.9	21.0	-23.6	-2.5	1.4
1987	-0.1	0.5	0.4	-8.3	-4.7	-13.0	-12.6
1988	-0.8	-2.2	-3.0	-2.5	-14.0	-16.5	-19.5
1989 (7)	0.3	-0.6	-0.3	-2.2	-14.0	-16.2	-16.5

1. Foreign currency borrowing in private markets by the non-U.S. public sector (central and local governments, state-controlled enterprises, and international organisations).

2. Source: OECD Secretariat ("Foreign bonds" issued in the United States).

3. Source: Federal Reserve Bulletin (June 1988), Table 3-19, line 3 (net flows).

4. Source: OECD Secretariat ("International bonds" in dollars).

5. Source: OECD Secretariat ("Syndicated bank loans" in dollars).

6. OECD Secretariat's rough estimates.

7. First six months at an annual rate.

8. OECD Secretariat's estimates (assuming an average maturity of 10 years and linear repayments).

9. OECD Secretariat's estimates (assuming an average maturity of 7 years and linear repayments).

10. OECD Secretariat's estimates (assuming an average maturity of 6 years and linear repayments).

Table 7A

Compensatory finance in dollars: stocks

billion $

	Gross stocks						
	In the United States			Outside the United States			Total
	Bonds (1)	Banks	Total	Bonds (1)	Banks	Total	
1972	1.3	..	1.3	1.0	4.7	5.7	7.0
1973	2.7	..	2.7	1.8	20.0	21.8	24.5
1974	5.4	..	5.4	3.4	40.3	43.7	49.1
1975	10.7	..	10.7	5.0	54.7	59.7	70.4
1976	19.6	..	19.6	9.9	74.0	83.9	103.5
1977	25.7	5.0 (2)	30.7	14.2	99.8	114.0	144.7
1978	30.4	10.3	40.7	17.6	153.7	171.3	212.0
1979	33.9	15.9	49.8	21.0	212.0	233.0	282.8
1980	36.2	20.9	57.1	26.4	258.3	284.7	341.8
1981	41.4	31.3	72.7	33.3	305.5	338.8	411.5
1982	46.8	45.4	92.2	46.3	356.8	403.1	495.3
1983	50.7	57.6	108.3	62.0	393.4	455.4	563.7
1984	54.2	62.2	116.4	79.9	419.5	499.4	615.8
1985	58.2	60.5	118.7	108.9	438.2	547.1	665.8
1986	63.3	64.1	127.4	143.0	452.3	595.3	722.7
1987	67.6	64.6	132.2	152.1	479.9	632.0	764.2
1988	71.0	62.4	133.4	167.6	495.0	662.6	796.0
1989 (3)	73.2	62.3	135.3	176.1	499.5	675.6	812.9

1. Cumulated gross flows.

2. OECD Secretariat's rourh estimate.

3. June 1989 .

Table 7B

Compensatory finance in dollars: stocks (1)

billion $

	Net stocks						
	In the United States			Outside the United States			Total
	Bonds (1)	Banks	Total	Bonds (1)	Banks	Total	
1972	1.3	..	1.3	1.0	4.7	5.7	7.0
1973	2.6	..	2.6	1.7	19.2	20.9	23.5
1974	5.0	..	5.0	3.0	36.2	39.2	44.2
1975	9.8	..	9.8	4.1	43.9	48.0	57.8
1976	17.6	..	17.6	8.3	54.1	62.4	80.0
1977	21.7	5.0 (2)	26.7	11.2	67.5	78.7	105.5
1978	23.9	10.3	34.2	12.6	104.8	117.4	151.6
1979	24.3	15.9	40.2	13.5	138.3	151.8	192.0
1980	23.2	20.9	44.1	16.0	152.6	168.6	212.7
1981	24.8	31.3	56.1	19.4	163.4	182.8	239.0
1982	26.1	45.4	71.5	28.1	172.9	201.0	272.5
1983	25.4	57.6	83.0	37.9	162.4	200.3	283.3
1984	24.1	62.2	86.3	48.4	139.5	187.9	274.2
1985	23.2	60.5	83.7	68.0	113.9	181.9	265.6
1986	23.6	64.1	87.7	89.0	90.3	179.3	267.0
1987	23.5	64.6	88.1	80.7	85.6	166.3	254.4
1988	22.7	62.4	85.1	78.2	71.6	149.8	234.9
1989 (3)	22.8	62.1	84.9	77.1	64.6	141.7	226.6

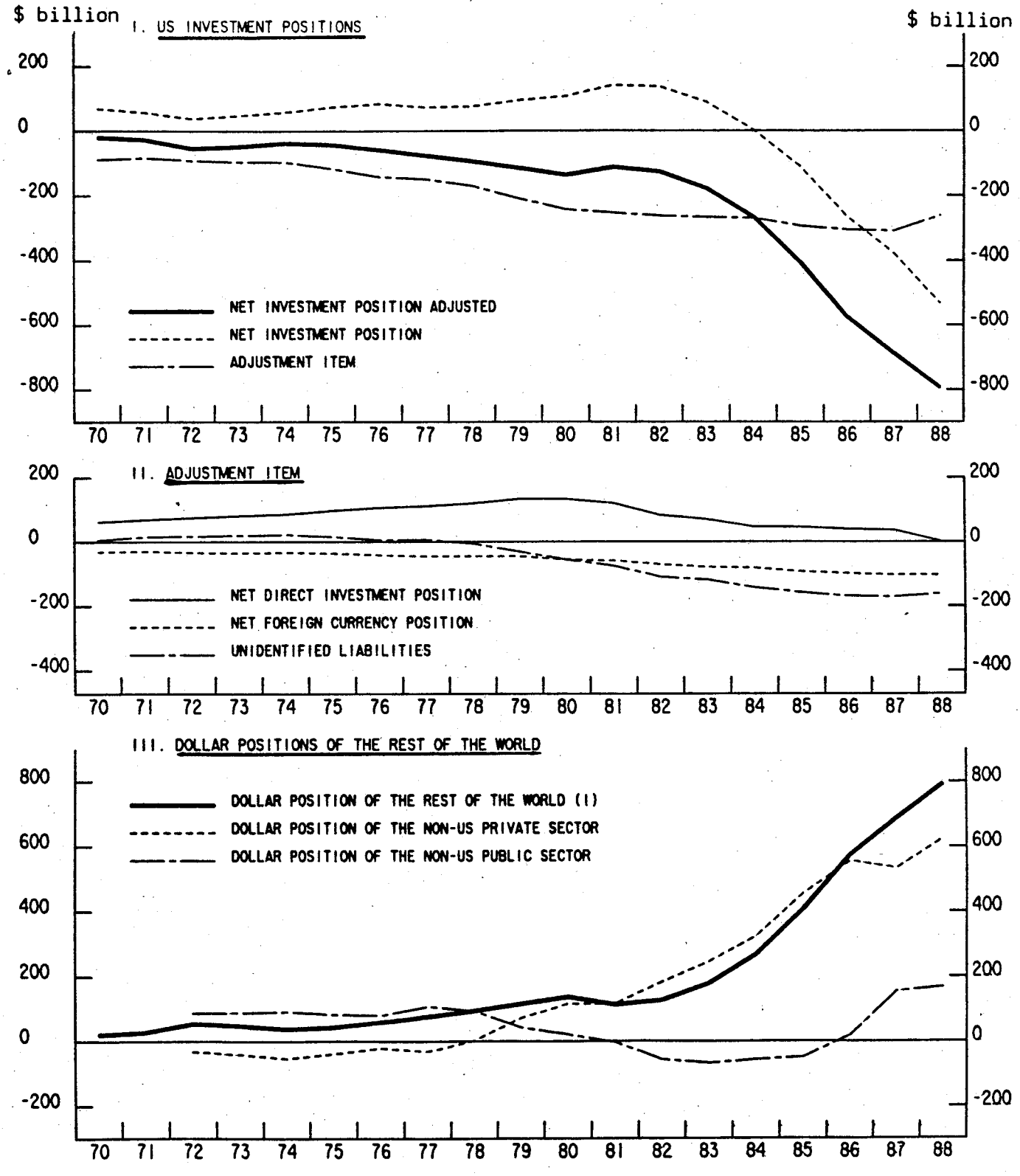
1. Cumulated net flows.

2. OECD Secretariat's rough estimate.

3. June 1989 .

CHART A

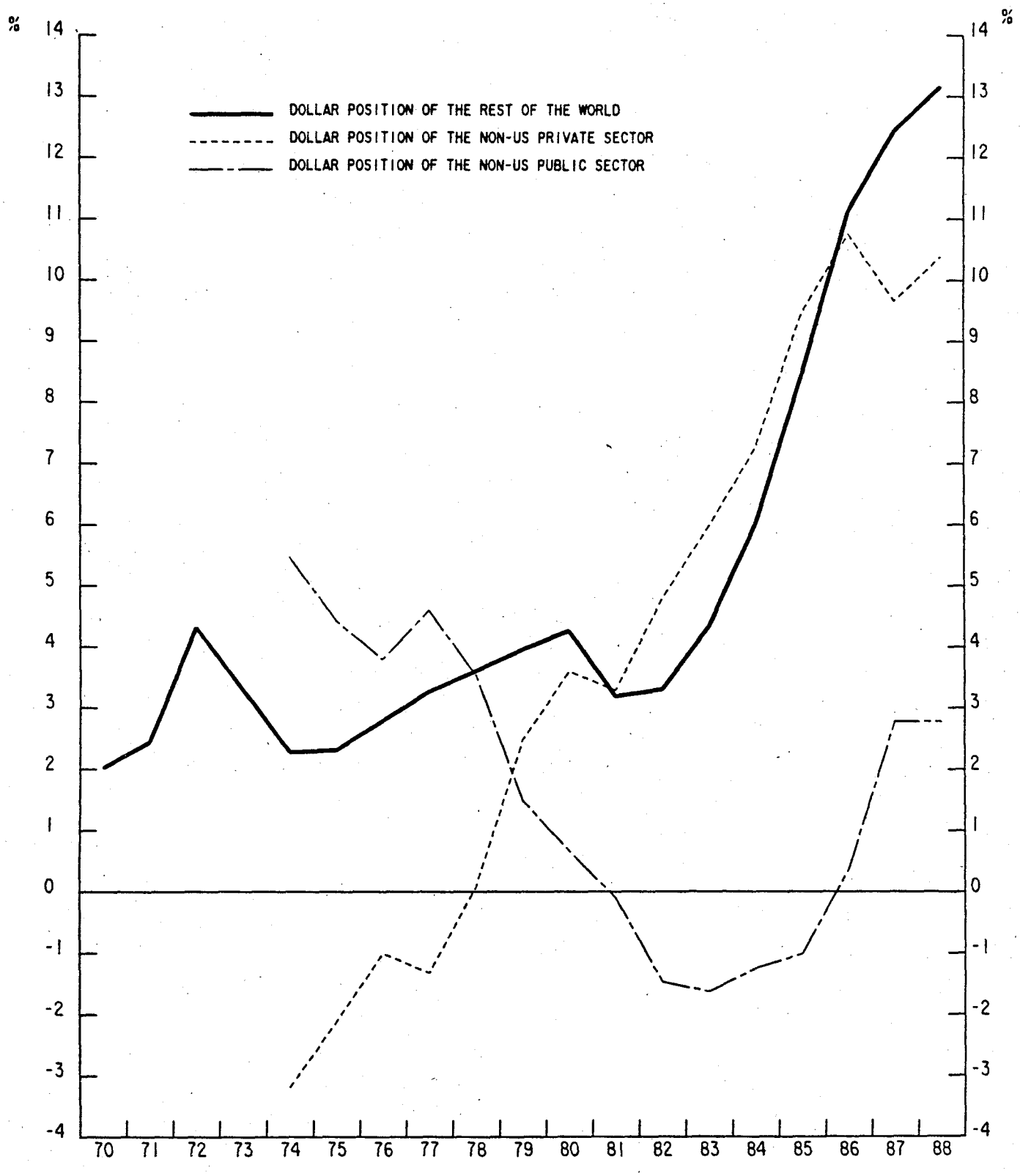
INTERNATIONAL INVESTMENT POSITIONS



(1) US NET POSITION ADJUSTED, WITH SIGN REVERSED.

CHART B

DOLLAR POSITIONS OF THE REST OF THE WORLD AS A PERCENTAGE OF GNP/GDP



(1) OECD GNP/GDP EXCLUDING UNITED STATES.

CHART C

SUPPLY OF NEW DOLLAR ASSETS AND THE EXCHANGE RATE OF THE DOLLAR

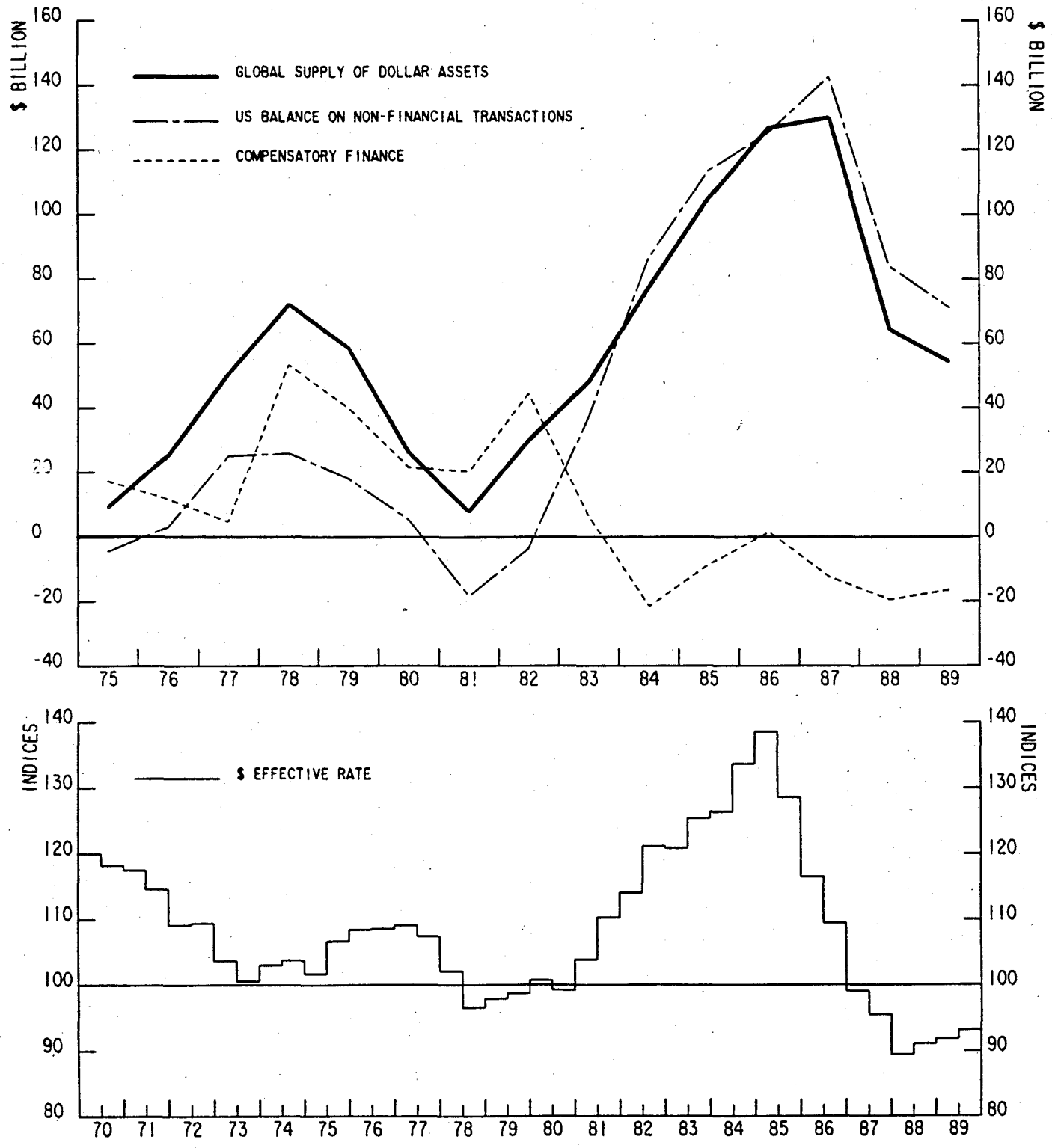


CHART D

ABSORPTION OF NEW DOLLAR ASSETS AND THE EXCHANGE RATE OF THE DOLLAR

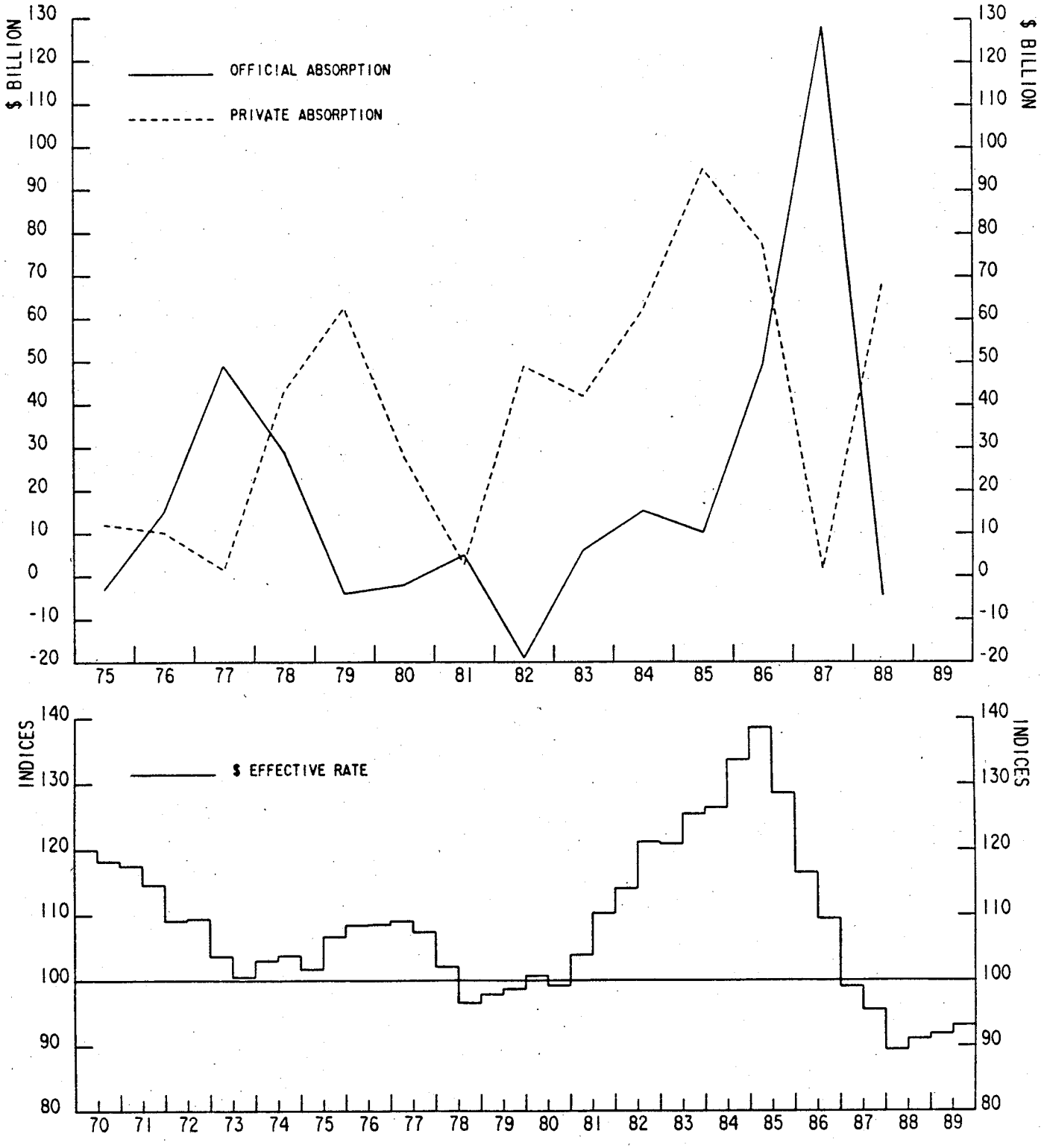
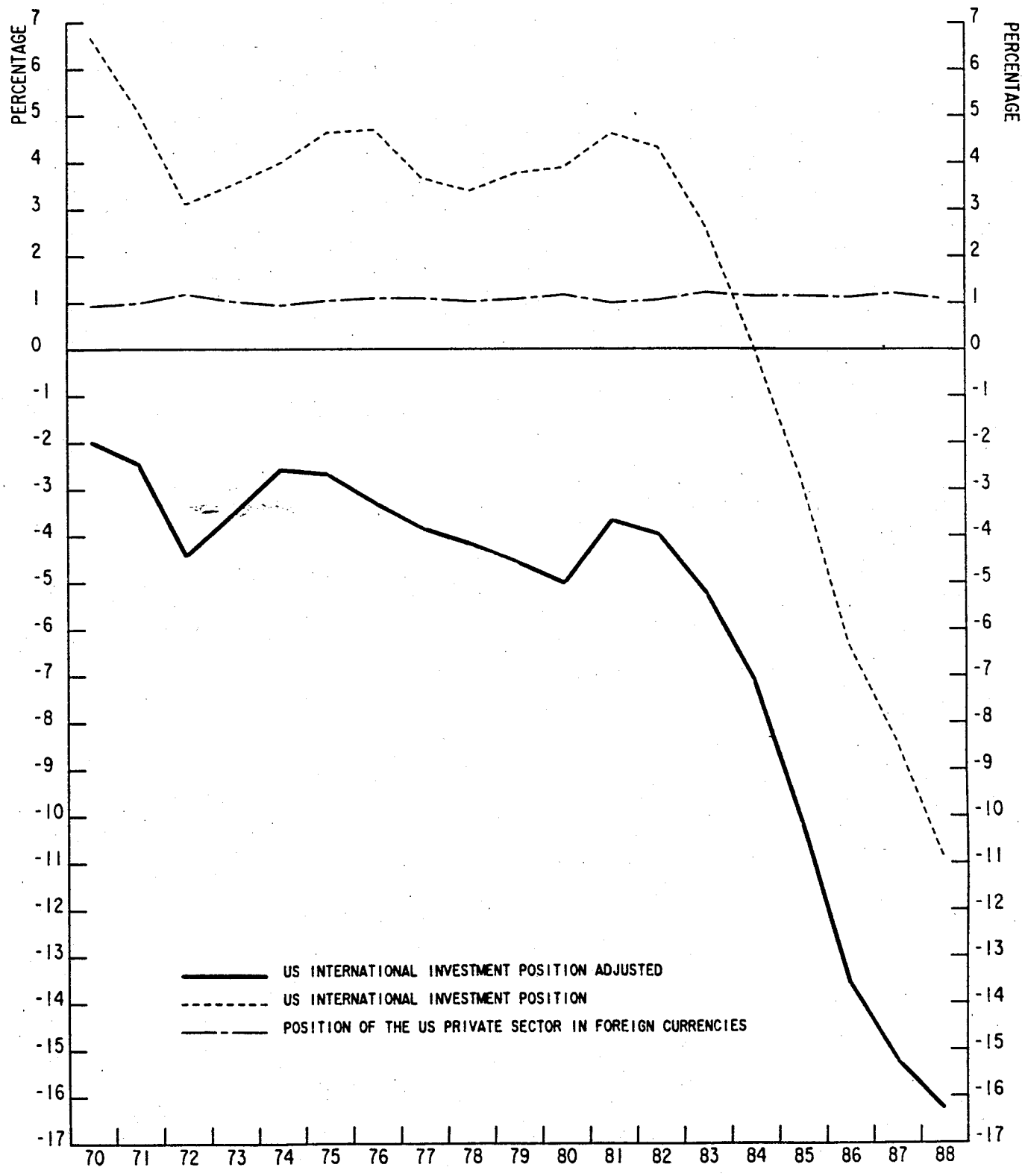


CHART E

US INTERNATIONAL POSITIONS AS PERCENTAGE OF US GNP



31.1.90

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In April 1983, the Economics and Statistics Department initiated a new series of economic studies entitled ESD Working Papers.

The following titles have been circulated:

1. Use of Demand Elasticities in Estimating Energy Demand (out of print)
   Utilisation des élasticités de la demande dans l'estimation de la demande de l'énergie

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2. Capital, Energy and Labour Substitution: The Supply Block in OECD Medium-Term Models
   Substitution du capital, de l'énergie et du travail : le bloc de l'offre dans les modèles à moyen terme de l'OCDE (épuisé)

   Patrick Artus

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   Formation des salaires en France : aspects sectoriels (épuisé)

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4. Service Lives of Fixed Assets (out of print)
   Durée de vie utile des actifs fixes (épuisé)

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   Prix des ressources naturelles et politique macro-économique : les enseignements de deux chocs pétroliers (épuisé)

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6. Output Responsiveness and Inflation: An Aggregate Study
   Souplesse de la production et inflation : étude globale

   David T. Coe and Gerald Holtham

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8. Simulated Macroeconomic Effects of a Large Fall in Oil Prices (out of print)
Simulation des effets macro-économiques d'une forte baisse des prix pétroliers

Flemming Larsen and John Llewellyn

9. Medium-Term Financial Strategy: The Co-ordination of Fiscal Monetary Policy (out of print)
Stratégie financière à moyen terme : la coordination des politiques monétaire et budgétaire (épuisé)

Jean-Claude Chouraqui and Robert Price

10. Price Dynamics and Industrial Structure: A Theoretical and Econometric Analysis (out of print)
Dynamique des prix et structure industrielle : une analyse théorique économétrique (épuisé)

David Encaoua (with collaboration from Paul Geroski and Riel Miller)

11. Evidence on Income Distribution by Governments (out of print)
L'Action exercée par l'Etat sur la redistribution du revenu

Peter Saunders

12. Labour Force Participation: An Analysis with Projections
Taux d'activité : analyse et projections

James H. Chan-Lee

13. The Demand for Money and Velocity in Major OECD Countries (out of print)
La demande de monnaie et la vitesse de circulation dans les grands pays de l'OCDE

A. Blundell-Wignall, M. Rondoni and H. Ziegelschmidt

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La conduite de la politique monétaire dans la phase actuelle de reprise économique

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Déficits budgétaires structurels et orientation de la politique budgétaire (épuisé)

Patrice Muller and Robert W.R. Price

16. Monetary Policy in the OECD INTERLINK Model
La politique monétaire dans le modèle INTERLINK

A. Blundell-Wignall, M. Rondoni, H. Ziegelschmidt and J. Morgan

17. Real Gross Product in OECD Countries and Associated Purchasing Power Parities (out of print)
Produit brut réel et parités de pouvoir d'achat dans les pays de l'OCDE (épuisé)

Peter Hill

18. The OECD Compatible Trade and Production Data Base (out of print)
Base de données compatibles sur le commerce et la production de l'OCDE

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Détermination des salaires nominaux dans dix économies de l'OCDE

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