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RESERVES AND INTERNATIONAL LIQUIDITY

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This Economic Paper deals with developments in monetary reserves and international liquidity during the 1970s and the first seven years of the 1980s. It is, in fact, two separate papers.

The first paper (pp. 5 to 43), originally prepared in the winter of 1983–84 for the Group of Ten Deputies' discussions on the international monetary system, covers the period from the end of 1969 to September 1983, while the second paper covers the period 1983–87. The text of the first paper has been left exactly as it was written some four and a half years ago. No attempt has been made to take account of subsequent revisions to many of the data it contains or to take advantage of later developments to modify the opinions expressed in it.

The second paper (pp. 44 to 67) covers the period 1983–87.

RESERVES AND INTERNATIONAL LIQUIDITY, 1970–83[1]

I. Reserve developments since end-1969

This part of the paper deals with developments in international liquidity in the narrow sense of monetary reserves.

(a) Changes in global reserves and their asset composition

Global reserve developments since the end of the 1960s divide naturally into two main, and sharply contrasting, periods. During the first of these, which covered the years 1970 to 1980, countries' total holdings of non-gold reserves[2] increased about ninefold in current dollar terms, from $40 to 366 billion. About $40 billion of this increase may be estimated to have resulted from the depreciation of the dollar during the 1970s against other categories of non-gold reserve assets. Excluding these valuation effects, therefore, the increase in global non-gold reserves between end-1969 and end-1980 comes to about $285 billion.

In addition to this spectacular increase in non-gold reserves, there was an even larger rise over the same period in the value, calculated at current market prices, of countries' total gold reserves,

[1] This paper was written in the winter of 1983–84 as a contribution to the Group of Ten Deputies' discussions of the international monetary system by the BIS members of the Deputies' group, who then were Alexandre Lamfalussy, Assistant General Manager, Economic Adviser and Head of the Monetary and Economic Department, and Michael Dealtry, Manager, Monetary and Economic Department.

The authors wish to acknowledge the help that they have received, in writing the paper, from their colleagues Dr. Helmut Mayer, Dr. Gunter Baer and Mr. Akinari Horii. Mr. Horii also wrote the appendix.

[2] This paper does not consider the effects on international liquidity of the introduction of European Currency Units into the monetary reserves of member countries of the European Monetary System in 1979. Dollars swapped by EMS countries against ECUs, as well as ECU assets created through the use of the very short-term financing facility in the EMS, are therefore included in foreign exchange reserves and gold swapped against ECUs in gold reserves.

Table 1
Global reserve developments, 1970–83

Items	Amounts outstanding			Changes	
	1969	1980	September 1983	1969–1980	1980–September 1983
	in billions of US dollars and millions of fine ounces at ends of periods				
Non-gold reserves					
Foreign exchange	33.1	329.2	290.0	+296.1	– 39.2
IMF reserve positions	6.7	21.5	34.0	+ 14.8	+ 12.5
SDRs	–	15.1	19.7	+ 15.1	+ 4.6
Total	39.8	365.8	343.7	+326.0	– 22.1
Gold reserves					
Volume	1,112.9	1,038.0	1,030.9	– 74.9	– 7.1
Value, at current market prices	39.2	608.9	417.0	+569.7	–191.9

Note: The basic source of information for the reserve figures given in this and the following tables is data published by the International Monetary Fund. The data on gold and foreign exchange reserves include gold and dollars swapped against ECUs by EMS member countries since March 1979.

from $39 to 609 billion — although the volume of total gold reserves declined during these eleven years by about 6½%. While the aggregate market value of gold reserves cannot be taken as a measure of their total realisable value in terms of currencies, the rise in the market price of gold in the 1970s brought about a substantial, if unquantifiable, strengthening of gold-holding countries' reserves. At the peak of the rise in gold market prices, in January 1980, the value of countries' total gold reserves was at one point as much as $835 billion.

The second main period of reserve developments was from the end of 1980 onwards. Between that date and September 1983 total non-gold reserves declined by $22.1 billion in current dollar terms, while the current market value of gold reserves declined by nearly one-third, to $417 billion. Up to September 1983 it appeared that the post-1980 decline in global non-gold reserves — although not, of

course, the declines in all individual countries' reserves — can be accounted for by the valuation effects resulting from the appreciation of the dollar against other types of non-gold reserve assets.

Looking at changes in the asset composition of non-gold reserves, the lion's share was in the foreign exchange component. Between end-1969 and end-1980 over 90% of the rise in total non-gold reserves, measured in current dollar terms, was accounted for by foreign exchange reserves. Despite the introduction of the SDR facility in 1970, the share of IMF-related assets in non-gold reserves went down from 17 to 10% over those eleven years. Between end-1980 and September 1983, on the other hand, the decline in total foreign exchange reserves, measured in current dollars, was greater than that of total non-gold reserves, so that the share of IMF-related assets in the total increased to 15½%.

Inside the very large changes that have occurred since the end of 1969 in total foreign exchange reserves there have been some marked shifts in their currency composition. Available data do not permit an exact measurement of these shifts, but the following table, based on IMF estimates, gives some idea of them, from end-1970 onwards.

Taking the whole period shown in the table, the main identified changes in the currency composition of foreign exchange reserves have been a decline in the combined share of dollar and sterling reserves, from over 85 to under 75% of the total, and an increase in the combined shares of Deutsche Mark, yen and Swiss franc reserves. These movements reflected the combination of diversification out of the dollar and, more particularly, sterling, together with valuation effects produced by the depreciation of these two currencies against other reserve currencies since 1970.

Throughout the period shown in the table the share of the dollar in total foreign exchange reserves was highest in the industrial countries — partly because this group contains all the secondary reserve currency countries — and lowest in the non-oil developing countries. The changes in the currency composition of foreign

Table 2
Estimated currency composition of foreign exchange reserves, 1970–82

At year-end	US dollars	Deutsche Mark	Japanese yen	Swiss francs	Pounds sterling	French francs	Other currencies	Total
	in percentages							
	All countries							
1970	77.2	1.9	–	0.7	10.4	1.1	8.7	100.0
1973	76.1	7.1	0.1	1.4	5.6	1.1	8.6	100.0
1976	79.7	7.0	0.8	1.4	2.0	0.9	8.2	100.0
1980	69.4	13.6	3.4	3.0	2.9	1.1	6.6	100.0
1982	71.3	11.6	3.9	2.7	2.3	1.1	7.1	100.0
	Industrial countries							
1970	85.0	1.6	–	0.9	5.2	–	7.3	100.0
1973	86.3	2.9	–	0.8	3.7	–	6.3	100.0
1976	87.0	3.8	0.4	0.9	0.7	0.1	7.1	100.0
1980	78.7	11.9	2.7	1.4	0.6	–	4.7	100.0
1982	77.2	10.8	3.9	1.7	0.7	–	5.7	100.0
	Oil-exporting countries							
1970	77.8	0.7	–	–	16.5	2.3	2.7	100.0
1973	69.8	8.6	0.1	2.9	11.9	2.7	4.0	100.0
1976	79.0	8.3	1.1	2.0	3.7	1.2	4.7	100.0
1980	61.1	15.8	3.8	5.5	5.4	2.8	5.6	100.0
1982	69.1	12.2	3.0	5.1	3.7	2.7	4.2	100.0
	Non-oil developing countries							
1970	56.1	2.9	–	0.4	22.5	3.6	14.5	100.0
1973	49.1	18.9	0.2	2.5	8.6	3.5	17.2	100.0
1976	64.4	12.6	1.1	1.7	2.6	2.1	15.5	100.0
1980	56.6	14.8	4.8	4.0	5.1	2.2	12.5	100.0
1982	59.4	13.0	5.1	2.3	4.3	2.0	13.9	100.0

Note: The figures in this table are based on IMF estimates, supplemented by BIS estimates of the currency composition of certain countries' foreign exchange reserves.

exchange reserves over the whole period were somewhat different in the three groups of countries shown in the table. In the industrial countries the main counterpart to the increased share of Deutsche Mark and yen reserves was a relative reduction in dollar reserves, since the share of sterling in this group's reserves was already small at the beginning of the period. In the oil-exporting countries, on the other hand, where the reduction in the share of the dollar in total

foreign exchange reserves was comparable with that which occurred in the industrial countries, there was in addition a much larger decline in the share of sterling reserves. In the non-oil developing countries the share of the dollar in total foreign exchange reserves is now somewhat higher than at the end of 1970, while that of sterling has declined very sharply.

Within the period covered by the table there have also been marked shorter-term changes in the currency composition of foreign exchange reserves, related in large measure to the changing fortunes of the dollar in the exchange market. These changes have been largest in the two groups of developing countries. The share of the dollar in these countries' foreign exchange reserves declined in 1971–73 and 1977–80, both, by and large, periods of weakness for the dollar, while the shares of Deutsche Mark, yen and Swiss franc reserves rose. In 1974–76 and 1981–82, on the other hand, the share of dollar reserves increased, while those of Deutsche Mark and Swiss franc reserves declined, as did the share of the yen in oil-exporting countries' reserves after 1980. In the industrial countries the decline during 1977–80 in the share of the dollar in total foreign exchange reserves reflected, in addition to the effects of the weakness of the dollar, a marked increase in the foreign exchange reserves of the United States, more than half of them held in Deutsche Mark.

(b) Reserve developments by groups of countries

In parallel with the very large changes in global reserves described in the preceding section there have also occurred since the end of the 1960s marked shifts in the country distribution of reserves. Over the period as a whole, the most important of these was the increase in the share of total non-gold reserves held by oil-exporting countries from 7 to nearly 23 %. The principal counterpart to this was a decline, from 64 to just over 50 %, in the industrial countries' share. The share of the non-oil developing countries also declined somewhat, from 29 to 26½ %. If China, the reporting of whose reserves began only in 1977, is excluded, the non-oil LDCs'

share in total non-gold reserves at the end of September 1983 comes to a little over 23%.

The distribution of gold reserves, on the other hand, has not changed much, on balance, since the end of the 1960s. The industrial countries' share has remained at about 85% of the total, despite the decline in the official gold holdings of the United States, and those of the other two groups together at about 15%.

Table 3
Developments in non-gold reserves by principal groups of countries, 1970–83

Items	Amounts outstanding end-1969	Changes						Amounts outstanding Sept. 1983
		1970–73	1974–75	1976–78	1979–80	1981–82	1983 Jan.–Sept.	
	in billions of US dollars							
Industrial countries	25.5	+ 68.2	+ 4.2	+ 88.6	+ 3.9	−17.8	+1.8	174.4
Oil-exporting countries	2.8	+ 10.3	+42.0	+ 3.5	+28.3	−10.4	+1.6	78.1
Non-oil developing countries	11.5	+ 23.7	− 0.7	+ 42.3	+11.7	− 2.3	+5.0	91.2
Total	39.8	+102.2	+45.5	+134.4	+43.9	−30.5	+8.4	343.7
Memorandum item: Non-oil developing countries, excluding China	..	..	..	*+ 40.7*	*+10.8*	*−11.1*	*+1.9*	*76.8*

The shifts that have occurred in the distribution of non-gold reserves since the end of the 1960s did not take place gradually, nor were movements always in the same direction. The big increases in oil-exporting countries' reserves were to a large extent concentrated in 1974–75 and 1979–80, immediately following the two major oil shocks.

The increases in the other two groups of countries' non-gold reserves were concentrated in the periods 1970–73 and 1976–78. The

reserves of the industrial countries almost quadrupled during the first of these periods, the main influence having been the large capital outflows from the United States that were associated with the breakdown of the Bretton Woods par value system. The Group of Ten countries alone (excluding the United States) added some $56 billion to their non-gold reserves during these four years. Of that amount, $25 billion went into Germany's reserves, but all other G-10 countries also recorded reserve gains. The boom conditions in the world economy that characterised this period also brought widespread reserve gains to the non-oil developing countries, including one of $5.7 billion in Brazil.

During 1976–78 the industrial countries' non-gold reserves nearly doubled again, to $186.5 billion. The reserves of the G-10 countries (excluding the United States) increased by about $76 billion, of which $22 billion went to Germany, $20 billion to Japan, about $11 billion each to the United Kingdom and Switzerland and nearly $10 billion to Italy. These increases were heavily concentrated in the years 1977 and 1978, when a number of central banks purchased large quantities of dollars in the exchange market to moderate the appreciation of their currencies (Germany, Japan and Switzerland) or to rebuild depleted reserves (Italy and — in 1977 only — the United Kingdom).

Perhaps an even more striking development of the years 1976–78 was the $42 billion increase in the non-oil developing countries' reserves, over a period when their cumulative deficits on current external account were of the order of $75 billion. During these three years Brazil's reserves increased by nearly $8 billion, those of India by $5½ billion and those of Argentina by over $4½ billion, while a number of other developing countries showed smaller, but still substantial, gains.

These large reserve gains by capital-importing countries with structural deficits on current external account were made possible by the borrowers' market in international banking funds that developed at that time, to a large extent under the combined influence of current-account deficits and capital outflows from the United States.

Moreover, these reserve gains extended into 1979 and 1980, the years of the second oil shock, when non-oil developing countries added a further $12 billion to their reserves.

Reserve developments after 1980 contrasted sharply with those of the preceding decade. Between end-1980 and end-1982 all three groups of countries showed declines in their aggregate non-gold reserves, measured in current dollar terms. In 1983 the decline appears to have come to a halt and there was a slight pick-up, especially in the reserves of non-oil developing countries. The extent of any change in the situation in 1983, however, may be exaggerated by the fact that data for that period on non-oil developing countries' reserves are incomplete.

II. The sources of reserve growth since 1970

Since the end of the 1960s the two main components of the increase in global reserves have been the rise in the market price of gold and the growth of foreign exchange reserves. The contribution of reserves held in the form of claims on the International Monetary Fund — Fund reserve positions and Special Drawing Rights — has been relatively modest.

So far as gold reserves are concerned, as indicated in Table 1 of the paper their volume has declined since end-1969 by 7½%, or 82 million ounces. In the aggregate, nearly all of that decline can be accounted for by a reduction in the gold reserves of the United States. The rest of the world's gold reserves, therefore, were on balance little changed in volume over the period 1970–83 taken as a whole but, as already mentioned in Section I, the increase in the market price of gold up to January 1980, and its subsequent decline, were major factors affecting the overall reserve position of gold-holding countries, and in particular those with weak balance-of-payments positions.

So far as reserves held in the form of claims on the IMF are concerned, countries' total Fund reserve positions went up, in

current dollar terms, over the whole period considered in this paper by $27.3 billion and their holdings of SDRs by $19.7 billion, with part of these increases having resulted from the depreciation in the value of the dollar against the SDR.

Since changes in foreign exchange reserves accounted for the lion's share of the movements in countries' total non-gold reserves that have taken place since the end of the 1960s, one of the most important questions about reserve developments during this period concerns the sources of these changes. Three main forms in which foreign exchange reserves are held can be distinguished: dollar reserves held in the United States; reserves held in secondary reserve centres, such as Germany and Japan; and reserves held in the Euro-currency market, both in dollars and in other reserve currencies. The changes since end-1969 in these three types of foreign exchange reserve holdings are shown in Table 4 (Items 3(a) to 3(c)). In addition, Item 3(d) in Table 4 shows, as a residual, changes in foreign exchange reserves which cannot be identified as belonging to any of the three categories shown in Table 4.

The relative importance at different times of the three identified types of placement of foreign exchange reserves has been influenced by a number of factors. These included the state of the current account of the US balance of payments; interest rate differentials between the United States and other leading industrial countries; the OPEC surpluses; borrowing demands of deficit countries, particularly non-oil developing countries; and countries' reserve asset preferences, which have been partly related to exchange rate considerations.

These factors have been interrelated in a number of ways and great care has to be taken in assessing the influence of any one of them on the evolution of total foreign exchange reserves. For example, payments deficits in the United States, and their impact on exchange rate developments and expectations, were the principal factor behind the diversification of reserves out of dollars into other currencies during the 1970s, while more recently very large inflows of funds into the United States, supported by interest rate

Table 4
Estimated changes in foreign exchange reserves, by types of placement, 1970–83

Items	1970–73	1974–75	1976–78	1979–80	1981–82	1983 January–September
	in billions of US dollars					
1. Changes in total recorded foreign exchange reserves	90.9	38.4	129.6	37.2	−41.6	2.4
2. Changes in US foreign exchange reserves	−2.8	0.1	4.3	5.7	0.1	−3.3
3. Changes in foreign exchange reserves of countries other than the United States	93.7	38.3	125.3	31.5	−41.7	5.7
of which: *(a) dollar reserves held in the United States*	*50.2*	*15.7*	*79.7*	*1.3*	*8.2*	*−1.5*
(b) dollar reserves held outside the United States[1]	*12.3*	*22.5*	*16.4*	*27.1*	*−25.2*	*−5.1*
(c) non-dollar reserves[2]	*19.0*	*2.8*	*20.6*	*29.9*	*−28.6*	*−0.1*
(d) unidentified	*12.2*	*−2.7*	*8.6*	*−26.8*	*3.9*	*12.4*

[1] Deposits with Euro-banks in the BIS reporting area. [2] Estimates from BIS sources.

differentials and other factors, have produced the opposite effect. Moreover, the size of US capital outflows after the first oil shock and the build-up of reserves in the Euro-currency market were related to countries' external financing needs, which at times were influenced by the size of the OPEC surpluses.

Given the existence of these interrelationships, therefore, the exact extent to which any single causal factor has contributed to changes in the total of foreign exchange reserves cannot be measured. There is, for instance, no way of knowing just how much of the increase in total exchange reserves during the 1970s was due to international bank lending. A large part of such lending since the end of the 1960s has been done directly by banks in the United States, but there was obviously no one-to-one relationship between such lending and the rest of the world's exchange reserves. Similarly, the extent to which international lending by banks in the Euro-

currency market has increased total exchange reserves cannot be measured, since it cannot be determined to what extent such lending was a substitute for lending out of the United States — which would have produced a corresponding increase in reserves — and to what extent it was financed from net private capital outflows from other countries. In the latter case the effect on total exchange reserves is dependent on whether there are declines in the reserves of the countries from which the outflows take place and/or increases in the reserves of the countries which borrow from the banks.

The contribution of US payments deficits to reserve growth, whether through the banking sector or other parts of the US balance of payments, cannot be measured either. In particular, it is not measured by the increase in dollar reserves held in the United States. Table 5 shows the accounting identity between changes in these dollar reserves and the rest of the US balance of payments, but the causality does not always run in a simple and direct way from the US balance of payments to dollar reserves in the United States. In that respect, the table is analogous to tables which show the evolution of countries' money supplies and the counterpart changes in credit to the public and private sectors and in the level of official monetary reserves.

It is important to distinguish between two sorts of changes in the total of dollar reserves held in the United States. On the one hand, for example, the rest of the world's total dollar reserves held in the United States can go up as a result of the preferences of individual countries with respect to where they hold their dollar reserves, without there having been any autonomous deficit in the US balance of payments. Such an increase in dollar reserves held in the United States will, however, result in there being an induced payments deficit in the United States, since there must in an accounting sense be payments outflows from the United States that offset the increase in dollar reserves held in that country. On the other hand, dollar reserves held in the United States can also go up because of autonomous changes in the US balance of payments resulting, for example, from the pursuit of expansionary policies in the United

Table 5
Changes in dollar reserves held in the United States
and principal counterpart items in the US balance of payments, 1970–83

Items	1970–73	1974–75	1976–78	1979–80	1981–82	1983 January–September
	in billions of US dollars					
Increases in dollar reserves held in the US	50.2	15.7	79.7	1.3	8.2	– 1.5
US current-account balance (surplus –)	–2.2	–20.1	25.7	0.6	6.6	25.2
US net direct investment balance (inflow –)	28.8	15.9	23.9	18.9	– 25.7	– 1.8
Other US net capital movements (inflows –)	30.9	17.6	27.8	–25.2	18.2	–25.2
of which: *(a) through banks*	*17.2*	*16.4*	*32.6*	*29.7*	*86.8*	*–16.6*
*(b) US non-bank net flows to banks abroad**	*13.7*	*1.2*	*16.2*	*21.2*	*38.5*	*8.1*
*(c) portfolio and other capital**			*–21.0*	*–76.1*	*–107.1*	*–16.7*
Increase in US reserve assets	–7.3	2.3	2.3	7.0	9.1	0.3
of which: *(a) due to IMF credit*	*–0.3*	*2.7*	*0.3*	*– 1.5*	*5.4*	*4.4*
(b) others	*–7.0*	*– 0.4*	*2.0*	*8.5*	*3.7*	*– 4.1*
Memorandum item: unborrowed sources of dollar assets (US current-account balance plus direct investment)	*26.6*	*– 4.2*	*49.6*	*19.5*	*– 19.1*	*23.4*

* Including statistical discrepancies in the US balance of payments.

States that produce a deficit on the current-account balance or autonomous outflows of capital and that lead foreign monetary authorities to buy dollars.

Moreover, while an autonomous deficit on the US balance of payments supplies extra liquidity to the rest of the world, part of that liquidity may take the form of additions to dollar reserves held in the Euro-dollar market. When that happens, it will tend to give rise to some offsetting flows of funds to the United States so that the increase in dollar reserves held in the United States as a result of a US payments deficit is less than it would have been if the additions to dollar reserves had all been left in the US market. In those circumstances the size of the underlying US payments deficit will be

understated and its impact on the rest of the world's reserve holdings will show up partly outside the US balance of payments.

As already mentioned, therefore, Tables 4 and 5 do not measure the contribution of different causal factors to changes in total exchange reserves. Nevertheless, they do, with the aid of some supplementary assumptions, help to throw light on the importance at different times of the different factors that have influenced the evolution of the primary dynamic component of global non-gold reserves.

That payments flows between the United States and the rest of the world were the most important factor behind changes in the rest of the world's foreign exchange reserve holdings can be seen from what happened during three of the sub-periods distinguished in Tables 4 and 5: the years 1970–73, the years 1976–78 and the years 1981–82. It should be added that in looking at the effects of the US balance of payments on the rest of the world's international liquidity position a distinction needs to be made between its effects on other countries' gross liquidity and on their net liquidity. Thus, deficits on the current account of the US balance of payments and on the net balance of the US direct investment account increase the rest of the world's broadly defined net liquidity, i.e. its net financial claims on the United States held officially or privately, since they do not involve borrowing by other countries from the United States. Deficits on the rest of the capital account of the US balance of payments, on the other hand, can only increase the rest of the world's gross liquidity, since its external liabilities go up pari passu with its gross external assets. The memorandum item in Table 5, which represents the sum of the current-account balance and the net direct investment account balance of the United States, indicates the extent to which, during the different sub-periods distinguished in the table, the US balance of payments influenced the rest of the world's net international liquidity.

The highest rates of increase in the rest of the world's total foreign exchange reserves occurred during 1970–73 and 1976–78, when payments outflows from the United States were the largest. In

1970–73 total reported foreign exchange reserves of countries other than the United States increased by $93.7 billion in current dollar terms, or by a yearly average of 77%. During those years, which saw the collapse of the Bretton Woods par value system, there were very large net capital outflows from the United States, of which $28.8 billion was on net direct investment account and $30.9 billion from other capital movements (including the statistical discrepancy). Beside their effect in adding to dollar reserves held in the United States, the size of the capital outflows from that country, and the accompanying loss of confidence in the dollar, also contributed to the $19 billion increase in non-dollar exchange reserves during 1970–73. Moreover, the size of the net outflows on the US direct investment account meant that a significant part of total payments outflows from the United States during these years represented additions to the rest of the world's net international liquidity.

During the years 1976–78 the rest of the world's foreign exchange reserves went up by as much as $125.3 billion, for a yearly average of 38%. While 1976 was in the nature of a transitional year, this was a period when the US balance of payments went into substantial deficit, both on current account ($25.7 billion) and on capital account ($51.7 billion). The loss of confidence in the dollar during this period, which reached its climax late in 1978, contributed, as it had done during 1970–73, to a further increase in non-dollar exchange reserves of $20.6 billion, a significant part of which resulted from the depreciation of the dollar against other reserve currencies. Moreover, the impact of the US deficits on international liquidity, and on the rest of the world's foreign exchange reserves, during these years was amplified by the redepositing of reserve accruals in the Euro-dollar market, which itself contributed to the $16.4 billion rise in identified official holdings of Euro-dollars.

It was also at this time — in fact, from 1977 onwards — that a borrowers' market in international banking funds emerged, which enabled non-oil developing countries substantially to increase their foreign exchange reserves through bank borrowing. An important element in the emergence of this borrowers' market was the extent

to which the US payments deficit was adding to the rest of the world's net liquidity. During 1976–78 the sum of the cumulative deficits on the current account and on the net direct investment account of the US balance of payments came to nearly $50 billion. In addition, part of the liquidity that fuelled this borrowers' market was endogenous to the market, in that it came from the redepositing in the Euro-market of dollar reserve accruals that themselves resulted from the lending operations of Euro-banks.

The third period which strongly exhibits the influence of the US balance of payments on the rest of the world's liquidity was 1981–82. During those two years the rest of the world's foreign exchange reserves declined by $41.7 billion in current dollar terms, at a time when, with the current account of the US balance of payments not far from equilibrium, there were huge inflows of funds into the United States, totalling $107.1 billion on the item "portfolio and other capital", more than half of which consisted of unidentified inflows ($66 billion). These inflows were, however, offset by very large banking outflows ($86.8 billion), reflecting the role of banks in the United States as residual suppliers of funds to the international banking system, as well as by substantial placements of funds by US non-banks with banks outside the United States, mainly in the Euro-dollar market ($38.5 billion).

A striking feature of developments during 1981–82 was that the whole of the decline in total foreign exchange reserves was in balances held outside the United States, while the rest of the world's holdings of dollar reserves in the United States went up slightly. Total non-dollar reserves declined by $28.6 billion over these two years, reflecting falls both in their volume and in the current dollar value of the outstanding stock; and dollar reserves held outside the United States were reduced by $25.2 billion, reflecting a combination of different influences — reserve losses in oil-exporting countries, safety considerations related to the appearance of major international debt problems and the introduction of International Banking Facilities in the United States. Moreover, just as, during the periods when the US balance of payments was in large deficit,

the liquidity effects of those deficits were magnified by the redepositing of reserve accruals outside the United States, the opposite shift during 1981–82 in the relative importance of exchange reserves held in the United States and those held elsewhere magnified the contractionary impact of the strengthening of the US balance of payments on the rest of the world's international liquidity. It may be added, with respect to the years 1981–82, that the decline in identified total exchange reserves held outside the United States, including those held in the Euro-market, of $53.8 billion went hand in hand with further strong growth of international bank lending until the Mexican crisis in August 1982. This meant, as the US balance-of-payments figures show, that the US banking sector, together with non-bank flows from the United States to banks abroad, became overwhelmingly the most important source of funding for the international banking market until 1983, when net banking inflows into the United States began to occur as from the second quarter of the year.

In contrast to these three periods during which developments in the United States dominated the evolution of the rest of the world's exchange reserves are two periods of very large OPEC surplus, namely 1974–75 and 1979–80. During those years total exchange reserves rose less rapidly than during the periods of large US payments outflows. In 1974–75 the rest of the world's foreign exchange reserves went up by $38.3 billion, all of which was added to oil-exporting countries' reserves. Much of the increase in these countries' reserves is reflected in the $22.5 billion rise in dollar reserves held in the Euro-market, which, together with net banking outflows of $16.4 billion from the United States, enabled the oil-importing countries to finance a significant part of the OPEC surplus through bank borrowing, with hardly any decline in their aggregate reserves.

In 1979–80, despite an OPEC current-account payments surplus of about $175 billion, total reported foreign exchange reserves of countries other than the United States increased by no more than $31.5 billion. That figure is probably an understatement, as is

suggested by the fact that during those two years the unidentified element in foreign exchange reserves (Item 3(d) in Table 4) was substantially negative, while dollar reserves held in the United States plus identified official Euro-dollar holdings and non-dollar foreign exchange reserves went up by $58.3 billion. Even taking the latter figure, however, the yearly average increase in total foreign exchange reserves of countries other than the United States comes down from $42 billion a year in 1976–78 to $29 billion in 1979–80. The influence on global reserves of the resurgence of the OPEC surplus was more than offset by developments in the United States: firstly, the virtual disappearance of the current-account deficits that had emerged in 1977 and 1978; and simultaneously a turn-round of nearly $60 billion on US capital account, from net outflows of $51.7 billion in 1976–78 to a small net inflow in 1979–80.

The increases in exchange reserves held outside the United States in 1979–80 reflected mainly the OPEC surplus, including a sizable increase in OPEC investments in non-dollar currencies, chiefly Deutsche Mark and yen, at a time when these secondary reserve centres were experiencing deficits on their current external accounts. This appears to have been the only instance, during the period covered by this paper, of secondary reserve centres financing their payments deficits through issuing their own currencies to foreign monetary authorities.

III. Assessment of the evolution of international liquidity since 1970

(a) Factors affecting the demand for, and the assessment of, liquidity

From the point of view of analysing the factors which produced such large increases in global reserves during the 1970s, the decade can be divided into two periods, the watershed between which was in March 1973, when the Bretton Woods par value system came to an end.

The first period, from the end of 1969 to March 1973, saw an increase of about 250%, or $100 billion, in non-gold reserves. The main factors which produced this were the major balance-of-payments disequilibria associated with the final period of breakdown of the par value system and the upsurge of inflation in the world economy during 1971–73. At the centre of these developments were very large deficits in the US balance of payments, due almost entirely to capital outflows from the United States. Much of the increase in foreign exchange reserves that took place during this period resulted from official purchases of dollars by industrial countries other than the United States. Some of these purchases not only added to the total of dollar reserves in the system but led also to increases in official holdings of secondary reserve currencies — producing a double effect on global reserves. In addition, there was a substantial increase in the exchange reserves of non-oil developing countries, which resulted from a combination of the rise in the prices of primary commodities and of capital inflows to these countries through the international banking system. Those inflows were fuelled by the increase in the rest of the world's liquidity stemming from the outflows of funds from the United States, including a major expansion of official reserves deposited in the Euro-dollar market. Finally, in addition to the very large increase in foreign exchange reserves, countries' non-gold reserves also went up between the end of 1969 and March 1973 by nearly $10 billion as a result of the first three allocations by the International Monetary Fund of Special Drawing Rights.

To understand post-March 1973 reserve developments it is necessary to put them in the context of certain major economic and financial features of that period. Firstly, there was the size of the OPEC countries' surpluses on current external account. Between 1974 and 1981 these totalled about $400 billion. There was no way in which in the short run these surpluses could be adjusted away through exchange rate movements and, although to a large extent they were offset by capital outflows from OPEC countries, the remaining surpluses showed up in increases in OPEC reserves. The

oil-importing countries in turn resorted to borrowing rather than running down their reserves, with a consequent increase in the total of world reserves.

Secondly, there were during the 1970s large disequilibria in current-account balances of payments over and above the oil surpluses and deficits. These imbalances arose to a considerable extent out of the different policy stances adopted in the face both of the upsurge of inflation that began in the early 1970s and of the 1973 oil shock. To illustrate their size, between 1974 and 1978 the aggregate balance of payments on current account of all OECD countries showed a cumulative deficit of $42 billion. Within that aggregate deficit, however, four countries — Germany, Japan, the Netherlands and Switzerland — recorded a cumulative aggregate surplus on current account of $77 billion, and the rest of the OECD area a cumulative aggregate deficit of nearly $120 billion. This polarisation of countries with strong and weak external positions had effects on reserve growth not dissimilar to those of the OPEC surpluses.

Thirdly, there was the very greatly increased importance of capital movements in the world balance of payments. To the extent that these capital flows offset current-account deficits and surpluses they were, of course, equilibrating and enabled deficit countries to economise on the use of reserves. Against this, however, must be set the fact that the growth of their international debt, much of it in short-term form, increased borrowing countries' desire to hold reserve assets on the other side of the balance sheet. And in fact many countries managed, at times during the 1970s, to borrow on the international markets, not only to cover payments deficits but also to build up their gross reserves. Finally, there were disequilibrating capital movements on a large scale during the 1970s — outflows from deficit countries and inflows to surplus countries — that were partly interest rate induced and partly speculative, and these too were a factor in the growth of, and demand for, reserves, since they increased both the actual and the potential total of payments imbalances.

These features of the world economic and financial scene have since March 1973 had a major impact on countries' exchange rate policies, which have been far removed from universal free floating. Firstly, there has been large-scale "management" of floating exchange rates, particularly in the dollar exchange market, by industrial countries other than the United States. These interventions were prompted by two aspects of the experience with floating exchange rates since March 1973: the short-term volatility of exchange rates, which proved to be much greater than expected; and large deviations from perceived purchasing power parities in the exchange rate relations between major currencies, which posed problems both for the structure of countries' balances of payments and for domestic inflation.

Secondly, there has been pegging of exchange rates both by individual countries and by groups of countries. Smaller countries, and in particular developing countries, have mostly pegged their currencies to that of a major trading partner, or to a basket of major currencies, including the SDR basket. In mid-1974 ninety-five countries, and in mid-1983 ninety-three countries, had such arrangements. In addition, some and, more recently, nearly all of the countries in the European Community have pegged their exchange rates against one another, at first within the framework of the "snake" and, from 1979 onwards, in the European Monetary System. Furthermore, the currencies of some other European countries are informally linked with those of the EMS countries. These sorts of expressions of the desire for exchange rate stability would probably have made themselves felt after March 1973 whatever the circumstances of the time had been.

The economic and financial features of the post-1973 period mentioned above, and the exchange rate policies that were pursued, meant that the functioning of the monetary system as a whole was not fundamentally different from what it had been before. The central macro-economic feature of the system continued to be that the sum of payments deficits was equal to the sum of payments surpluses, and that the financing of the surpluses entailed a

continued increase in global reserves. This implied, and still implies, that the demand for reserves has not been basically reduced by the disappearance of the par value system.

(b) An assessment of the evolution of international liquidity since 1970

In considering the evolution of international liquidity, either for the system as a whole, or for particular groups of countries, the reserve figures given earlier in this paper are only one element, although certainly an important one. A country's *gross* international liquidity consists of all the resources actually or potentially available to it for financing external payments deficits. So far as actual resources are concerned, in addition to official monetary reserves countries' gross international liquidity, taken in the widest sense, also includes the external liquid, or mobilisable, assets of the private sector, i.e. private holdings of foreign currencies and short-term trade-related claims on other countries. Countries' potential international resources are a function of their international creditworthiness and include their conditional credit facilities at the International Monetary Fund and their borrowing potential in the international banking and bond markets. To measure countries' *net* international liquidity the other side of the balance sheet must also be taken into account, by subtracting from the external assets the external liabilities and, in particular, those which are short-term in character. In assessing the adequacy of a country's international liquidity, moreover, account has to be taken not only of its external indebtedness but of other calls that may be made on its gross resources. Among the indicators that are most important in that respect are the level of its imports; for many developing countries the volatility of their export incomes; and, for substantially indebted countries, the interest burden on their external debt.

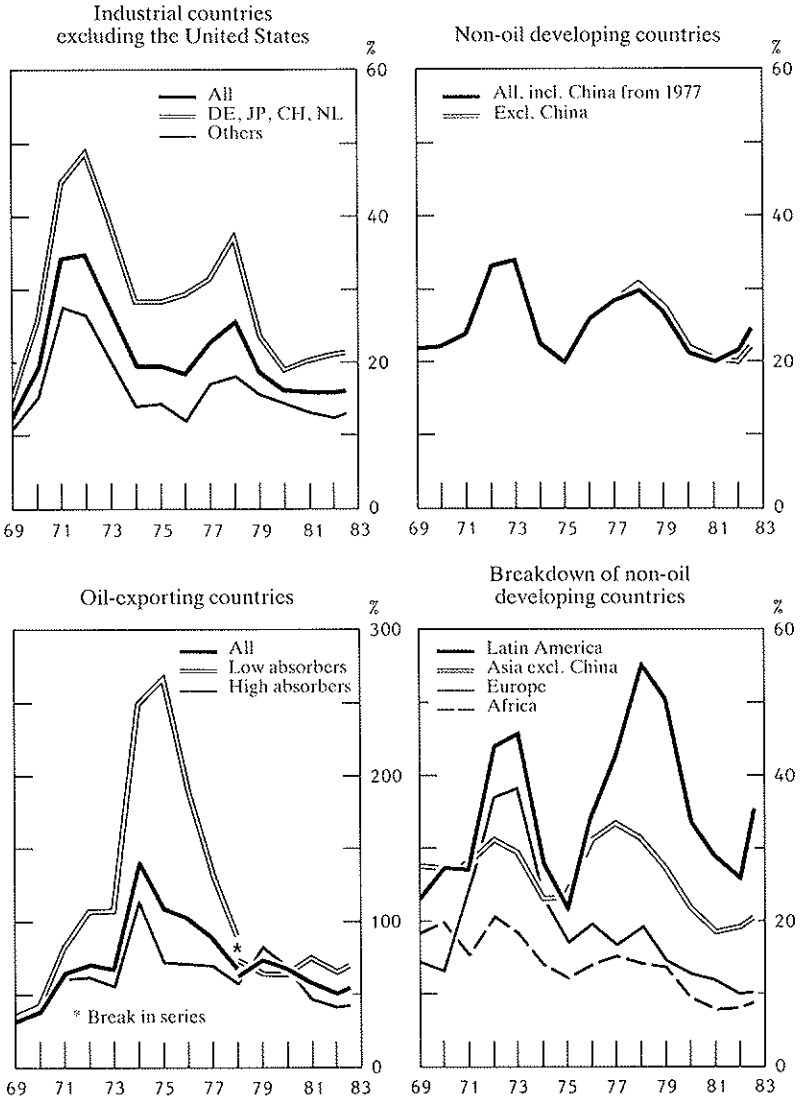
Developments since the end of the 1960s have changed, and in certain respects made more difficult, the assessment of the international liquidity situation. These include: the greatly increased importance, during most of the period under review, of borrowing

possibilities in the international market as a supplement to reserves; the very large accumulation of external debt, and in particular short-term debt, by many countries (as a result of actual borrowing) which has created a growing divergence between gross and net liquidity positions; and, for gold-holding countries, the disappearance of a fixed monetary price for gold and the fluctuations of prices on the gold market.

Any assessment of international liquidity developments during the 1970s and the early 1980s has to begin with an assessment of the situation as it was at the end of the 1960s. At that time, the total of traditional reserve assets had for some years been growing rather slowly. From the mid-1960s onwards total gold reserves had been declining as a result of net sales of gold to the market by the Gold Pool countries; foreign exchange reserves, except in 1967, had shown little increase, and total Fund reserve positions were growing very slowly. These developments had meant that total reserves, as a percentage of countries' imports — the most commonly used measure of reserve ease or tightness — had been steadily declining. It was against this background that the first allocations of Special Drawing Rights took place in 1970 on the eve, as it turned out, of an unparalleled growth of total foreign exchange reserves in the system.

The following graphs show, for the main groups of countries in the system, but excluding the United States from the group of industrial countries, the evolution of non-gold reserves in relation to imports since end-1969. The exclusion of gold from countries' reserves means that the reserve/import ratios shown for the beginning of the period are much lower than if gold reserves are included. Including gold in reserves — the US Treasury did not formally terminate purchases and sales of gold in transactions with foreign monetary authorities until August 1971, although other countries' willingness to sell gold to the US Treasury was, by then, somewhat limited by the latter's reluctance to sell gold itself — the reserve/import ratio goes up for industrial countries from under 13 to over 26% and for oil-exporting countries and non-oil developing countries (excluding China) from 33 to 48% and from 21 to over 29%.

Selected groups of countries: ratios of non-gold reserves to imports



The increase in non-gold reserves in the early 1970s was such that by the end of 1972 the reserve/import ratio shown in the graph for industrial countries other than the United States was two and a half times what it had been at the end of 1969, while that of non-oil developing countries rose by 50 per cent. over that period. Before the first oil shock, in 1973, there had therefore been a major increase in reserve ease since the end of the 1960s.

Within each of the three main groups of countries shown in the graph, however, there were very different ratios for different sub-groups of countries, with the highest ratios being recorded by four industrial countries — Germany, Japan, the Netherlands and Switzerland — by the low-absorbing oil-exporting countries and by non-oil developing countries in Latin America.

1974 and 1975 brought major declines in the ratios for all groups of oil-importing countries, followed by further increases during 1976–78, before the second oil shock. The continued very large expansion of international bank lending after 1974 not only moderated the decline in oil-importing countries' reserve/import ratios after the first oil shock but was a major factor, together with the large payments deficits in the United States, in their recovery after 1976. While the continued ready availability of international bank credit — and, for gold-holding countries, the increase in the market price of gold — was probably a more important factor in countries' perceptions of their international liquidity positions in the late 1970s, by end-1978 (the first date for which such figures are available) the short-term external banking debt of many countries had nevertheless reached sizable proportions, as the above table shows. The size of this debt at the end of 1978 illustrates, although it does not measure, the extent to which increases in these countries' foreign exchange reserves during the preceding year had resulted from external borrowing.

The reserve/debt ratios shown in the table cover only certain of the smaller countries in the industrial world, as well as all the non-oil developing countries, excluding China and offshore banking centres. Since the data on short-term banking debt that are given in the table

Table 6
Selected groups of countries: Ratios of non-gold reserves to short-term external banking indebtedness, 1978–83[1]

End of period	Non-gold reserves	Banking debt with a residual maturity of up to 1 year	*Reserve/ debt ratio (up to 1 year)*	Banking debt with a residual maturity of up to 2 years	*Reserve/ debt ratio (up to 2 years)*
	in billions of US dollars and percentages				
	Industrial countries outside the BIS reporting area[2]				
1978	16.8	13.1	*128.2*	15.9	*105.7*
1979	21.0	15.5	*135.5*	18.4	*114.1*
1980	22.0	19.0	*115.8*	22.0	*100.0*
1981	21.1	22.6	*93.4*	25.6	*82.4*
1982	23.2	26.8	*86.6*	31.0	*74.8*
1983 June	20.5	26.0	*78.8*	30.1	*68.1*
	Non-oil developing countries[3]				
1978	67.4	69.4	*97.1*	86.3	*78.1*
1979	76.3	85.9	*88.8*	104.1	*73.3*
1980	76.4	115.4	*66.2*	134.5	*56.8*
1981	74.1	140.1	*52.9*	163.8	*45.2*
1982	61.6	153.6	*40.1*	175.3	*35.1*
1983 June	64.8	154.9	*41.8*	177.8	*36.4*
	of which: Latin America				
1978	27.8	31.1	*89.4*	41.4	*67.1*
1979	33.6	41.7	*80.6*	52.8	*63.6*
1980	31.9	60.9	*52.4*	72.6	*43.9*
1981	29.7	75.3	*39.4*	90.2	*32.9*
1982	19.8	82.8	*23.9*	95.1	*20.8*
1983 June	20.3	83.7	*24.3*	96.4	*21.1*
	Other non-oil developing countries				
1978	39.6	38.3	*103.4*	44.9	*88.2*
1979	42.7	44.2	*96.6*	51.3	*83.2*
1980	44.5	54.5	*81.7*	61.9	*71.9*
1981	44.4	64.8	*68.5*	73.6	*60.3*
1982	41.8	70.8	*59.0*	80.2	*52.1*
1983 June	44.5	71.2	*62.5*	81.4	*54.7*

[1] Debt to banks in the BIS reporting area. [2] Australia, Finland, Iceland, New Zealand, Norway and Spain. [3] Excluding offshore centres and China.

are those reported semi-annually to the BIS, no debt figures are available for the industrial countries which themselves report to the BIS the international assets and liabilities of banks operating in their

territories.[3] It should be added, however, that some of the countries in the BIS reporting area had already contracted significant external banking debt by the end of 1978 and that since that date this debt has, in certain instances, increased very substantially further.

From 1979 onwards, after the second oil shock and the beginning of many industrial countries' major efforts to reduce inflation, which produced strong increases in interest rate levels, the international liquidity situation of many countries progressively deteriorated. Reserves declined in relation both to imports and, even more, to short-term external debt; countries' recourse to their conditional credit facilities at the IMF progressively increased; and gold-holding countries were unfavourably affected by the protracted decline in the market price of gold after January 1980.

Between end-1978 and end-1982 the reserve/import ratios for industrial countries other than the United States declined from over 25 to 15½%, while, if Germany, Japan, the Netherlands and Switzerland are also excluded, the fall was from nearly 18 to a little over 12%. For non-oil developing countries as a whole this ratio declined over these four years from 30 to 19½%, including a drop in the Latin American ratio from 55 to 25%.

The declines since end-1978 in the ratio of many countries' non-gold reserves to their external banking indebtedness with residual maturities of up to two years have been much greater. On the basis of international banking data reported to the BIS, the decline in this ratio for industrial countries outside the BIS reporting area was from 106 to 68% between end-1978 and mid-1983, and for non-oil developing countries from 78 to 36%. Within the group of non-oil developing countries, however, the evolution of this ratio is far from

[3] The countries reporting international banking data semi-annually to the BIS are Austria, Belgium-Luxembourg, Canada, Denmark, France, Germany, Ireland, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States. As well as banks operating in these countries, the data also include, for the United States, the external claims of all foreign branches and subsidiaries of US banks, and for most other reporting countries the branches and subsidiaries of domestic banks that operate in offshore banking centres.

uniform. In Latin America, reserves declined from 67 to only 21 % of banking indebtedness with a maturity of up to two years between end-1978 and mid-1983, while for all other non-oil developing countries the deterioration was much less — from 88 to 55 %, at which level the ratio was not very greatly lower than in the industrial countries outside the BIS reporting area.

During most of this period international bank lending was still growing strongly, except vis-à-vis eastern European countries after 1980, until well into 1982, despite the fact that external indebtedness, particularly in many non-oil developing countries, was clearly growing at an unsustainable rate. Then, following the Mexican crisis in August 1982, voluntary new bank lending to Latin America as a whole soon came virtually to a halt. Outside eastern Europe and Latin America, however, bank lending to non-oil developing countries, particularly in Asia, has continued to grow, although more slowly than before, while lending to industrial countries is still increasing quite strongly.

The present situation is one in which it is not easy to make a general statement about the adequacy of global reserves and international liquidity. It is true that there are some rather general features of the situation: the cessation of global reserve growth after 1980; the general deterioration of reserve/imports ratio to levels well below those reached in the early 1970s and, again, in the later years of the decade; and the widespread extent of unfavourable reserve/debt ratios. Moreover, there has also been quite a widespread deterioration in that element of international liquidity, taken in its broadest sense, which is represented by non-reserve, mobilisable, external assets. The number of developing countries that are in arrears in their external trade payments has meant that a large volume of short-term trade-related claims, both of industrial countries on developing countries and of developing countries on one another, have become illiquid.

Against these relatively general aspects of the present situation, however, must be set the split market which has developed for international bank loans. Broadly speaking, the banks now classify

countries in two groups — those to which they are still prepared to lend new money voluntarily and those to which they will only lend in association with domestic adjustment programmes supported by conditional IMF credits. The first of these groups includes the industrial countries, the low-absorbing oil-exporting countries and nearly all non-oil developing countries in Asia. For the second group, and particularly for Latin American and most eastern European countries, voluntary bank lending has virtually dried up.

As a consequence of this split market for international bank lending, it can be said that the countries in the first group still have enough international liquidity — despite low reserve/import and reserve/debt ratios in many of them — or, in a few instances, that their reserves and liquidity position is comfortable. It should be added, however, that the fact that these countries are still creditworthy in the international market means, for a number of them, no more than that they can only add to their reserves through further borrowing. For countries in the second group, gross international liquidity has now been reduced to their reserve assets — which in many cases are very low — plus whatever conditional credits they can still obtain from the IMF and the international banking system.

IV. The outlook for international liquidity

Over the greater part of the period covered in this paper, i.e. up to the end of 1980, the monetary system generated its own reserve growth on a considerable scale in the form of foreign exchange reserves. This reserve growth, however, was in a number of respects far from optimal. Firstly, at the beginning of the 1970s, and again between 1976 and 1978, large payments deficits in the United States were the main motive force behind reserve growth and led at times to excessive increases in foreign exchange reserves. The monetary authorities in certain industrial countries — notably the secondary

reserve centres — intervened as reluctant purchasers of dollars on a large scale to stem unwanted appreciations of their exchange rates. In addition, a number of countries with current-account payments deficits were able, thanks to ample liquidity at the disposal of international banks, at times to overfinance their deficits and to add to their gross reserves on a scale, and at interest rates, that led some of them to embark on, or maintain, overambitious rates of economic growth coupled with high inflation.

Secondly, the extent to which both the financing of payments deficits and additions to foreign exchange reserves depended on borrowing from banks at variable interest rates and, to a significant extent, at short term introduced an element of vulnerability into many countries' international liquidity positions. This was shown up all too clearly by the simultaneous emergence of recession and high interest rates in the industrial world at the beginning of the 1980s.

Thirdly, the market value of gold reserves, which continue to represent an important element in global reserves and international liquidity, has fluctuated very widely indeed during the period under review, as well as having increased very substantially on balance since the end of the 1960s.

To these less-than-ideal aspects of developments some would add the emergence of new secondary reserve centres and the consequent moves towards a multi-currency reserve system. Certainly, it is true that the shifts out of the dollar into secondary reserve currencies in the 1970s added to global reserve growth at the times when they occurred, while the partial reversal of these shifts more recently has had opposite effects.

The likelihood of any far-reaching changes in the ways in which reserves are provided to the system, however, continues to seem very remote. Central international management of global reserves — let alone of international liquidity more broadly — would entail changes in the workings of the monetary system that do not appear feasible; and even if such changes were feasible, they might bring with them inconveniences of their own. More realistically, present arrangements for the provision of reserves to the system could be

operated more smoothly than in the past — but that is not the subject of this paper.

What is relevant here is that, in considering the outlook for reserves and international liquidity, the assumption will be made that reserve growth will continue, as in the past, to take the form mainly of additions to foreign exchange reserves. The key question then is: how might foreign exchange reserves and, in particular, dollar reserves, grow in the future and for the benefit of which countries? In brief, the answer would seem to be twofold: firstly, foreign exchange reserves can grow both from payments deficits of the United States, as the system's principal reserve centre, and from international lending by banks outside the United States financed through a build-up of liquidity in the Euro-market; but, secondly, it seems likely that such future reserve growth will be unevenly distributed, with relatively little benefit accruing to those countries which at present are most illiquid internationally.

The basic source of reserve growth for the system will continue to be external payments deficits of the United States. What is the outlook for reserve growth from this source? The substantial deficit which emerged during 1983 on the current account of the US balance of payments is certainly a factor tending, of itself, to improve the rest of the world's broadly defined net liquidity position, since the appearance of a corresponding surplus in its current account is equivalent to an acquisition of net dollar assets held officially or privately. Even some of the developing countries which are at present the most illiquid are to some extent feeling the benefits of the US current-account deficit on their real economies. Thus it is reducing the extent to which these countries have to rely, for adjusting their external positions, on cutting imports; and some countries that have already cut back their imports substantially may be helped, through higher exports to the United States, to run temporary surpluses on current account.

Since the US current external deficit has so far been offset, in the aggregate, by private capital inflows to the United States, there has been little increase recently in the rest of the world's narrowly

defined international liquidity, i.e. its foreign exchange reserves. If, however, these capital inflows were to decline, or even to be reversed, while the US current account remained in deficit, there would, as on similar occasions in the past, be substantial consequent additions to the rest of the world's reserves. These additions to reserves would probably take two main forms: increases in the dollar reserves of industrial countries, including secondary reserve centres, resulting from official intervention in the exchange markets; and, more indirectly, an increase in the resources available to the international banking system, which might also lead to reserve increases, as in the past, but with corresponding increases in the borrowing countries' external bank debt.

The first of these forms would bring about increases in net liquidity, but for a limited number of countries only. If past experience is any guide, the main beneficiaries would be the secondary reserve centres and other strong currency countries, i.e. those whose present liquidity positions can be regarded as comfortable, and who might therefore regard additional net liquidity, at any rate beyond a certain point, as a mixed blessing.

What could be the consequences of the second form of liquidity creation? The slowdown in the overall growth of international bank lending since the Mexican crisis of August 1982 may perhaps have run its course by now. However, it appears unlikely to be reversed in the near future — at any rate for the benefit of countries whose creditworthiness has been impaired. The probable outlook for international bank lending is that it will continue to grow relatively slowly, and to be mainly directed to industrial countries experiencing balance-of-payments financing needs, i.e. those not belonging to the group mentioned above, and to creditworthy developing countries. By definition such lending would only increase these countries' gross reserves; their net international liquidity position could even worsen, if the increase in their external debt exceeded that of their gross reserves.

For those countries whose present liquidity positions are manifestly inadequate, i.e. most of the developing countries, the

resumption of reserve creation through the US balance of payments is unlikely to bring lasting or significant relief. These countries can gain reserves in three ways only. Firstly, by a return of flight capital, which would indeed be helpful, but is unlikely to occur on a large scale. Secondly, by current-account surpluses, which for developing countries can be no more than a temporary option. Thirdly, through a resumption of international bank lending to these countries, which does not seem very probable either, except perhaps for a limited amount of IMF-induced bank lending; even then, however, the funds in question would have to be borrowed at fairly short term and would therefore not be an optimal form of reserve growth for most of these countries. For the heavily indebted developing countries, a lasting solution to the balance-of-payments problems which lie behind their present liquidity troubles would require, on the financing side, the attraction of long-term foreign capital into their economies.

Appendix: Sources of foreign exchange reserves

This appendix is intended to show how "sources of foreign exchange reserves" appear in Tables 4 and 5, firstly by explaining the conceptual framework of analysis of the sources and then by giving several examples of how reserve-related transactions can be examined in the framework.

Global foreign exchange reserves can be classified into three forms by types of placement:

(a) dollar reserves held in the United States;
(b) dollar reserves held outside the United States or in the Euro-dollar markets; and
(c) non-dollar reserves held both in the national markets and in the Euro-currency markets of secondary reserve currencies.

Table 4 shows the changes in each of the three types of foreign exchange reserves and also in those whose placement is not identified. Table 5 lists the counterpart items to changes in dollar reserves held in the United States (type (a) under the above classification). The main items are the US current-account deficit, US net direct investment outflow — these two items are unique in that they scarcely increase the indebtedness of the rest of the world to the United States — other US net capital outflows and changes in US reserve assets. In principle, any reserve growth can statistically be attributed to an item or items in these two tables on account of double-entry book-keeping of cross-border transactions on countries' balance-of-payments accounts. In practice, however, this does not hold true, because not all reserve-related transactions are recorded symmetrically by all countries. For instance, some reserve increases reported to the IMF by holding countries (hereafter termed "holders' reports") may not be recorded by countries where the reserves are held as increases in their liabilities to foreign monetary authorities (hereafter termed "liability reports"). For such reasons, the item "unidentified increases in foreign exchange reserves" in Table 4 shows sizable ups and downs since 1970. Although it is impossible to ascertain exactly what accounts for these

changes in unidentified reserves, there is some circumstantial evidence on which to base some conclusions.

Firstly, during each two-year period subsequent to the first and second oil price shocks, when OPEC countries' foreign exchange reserves expanded rapidly, the unidentified reserve item showed a decline, i.e. the increase in reserves whose placement is identified in liability reports exceeded those reported by reserve holders to the IMF. One possible inference from this fact is that some reserve holders concealed reserve growth. Secondly, during the first three quarters of 1983 there was a sizable increase in the unidentified reserve item. There are several possible guesses as to what lay behind this. One is that there was, in fact, a hidden increase which eluded the available statistics on the sources side. For instance, some countries may have started to include in their reserves external assets that were previously not recorded, or were excluded from holders' reports in the 1979–80 period. A second possibility is that aggregated reserves have been overstated as a result of the fact that data are unavailable from some countries for 1983, and so have been assumed to have remained unchanged since the end of 1982 for aggregation purposes. A third possibility lies somewhere between the other two, namely that the increase might have resulted from cosmetic transactions, e.g. increasing reserves of non-usable financial assets, such as external assets vis-à-vis a heavily indebted developing country. Which of these three possibilities is correct? No definite answer can be given. Perhaps all these possibilities are present in combination. It is interesting to note that the hidden increase in unidentified reserves took place when OPEC reserves declined and the debt problems in a number of non-oil developing countries became acute.

Leaving aside this unidentified item, every reserve-related transaction is systematically recorded both in holders' and liability reports. Consequently, every change in foreign exchange reserves in holders' reports ought to have corresponding changes in liability reports, which are consolidated into Tables 4 and 5, and vice versa. Certain qualifications should be made with regard to the

interpretation of these two tables. Firstly, the breakdown of counterparts to reserve growth recorded in holders' reports according to the format in these tables is not the only way of finding clues to the sources of reserve growth. Several other ways are also possible. An interesting alternative might be to show counterpart items to changes in reserves held outside the United States in addition to those in the United States. Under such an approach, secondary reserve countries' balance-of-payments items will be considered specifically. Although this alternative appears conceptually plausible, it has disadvantages for an analysis of sources of reserve growth: the availability of reliable statistics on liabilities to foreign monetary authorities in secondary reserve centres, which are indispensable to the alternative approach, is limited; under the alternative approach, assets and liabilities between the United States and the secondary reserve centres should be netted out so as to avoid double-counting of reserve increases, which might blur an important aspect of international banking flows, e.g. the role of Euro-bank lending and effects of exchange rate movements.

A second qualification concerns the interpretation of each item in the tables as revealing sources of reserve growth. These items are not meant to indicate ultimate causes of foreign exchange reserves or exogenous factors of reserve creation. Each of the items is influenced by various economic factors, endogenous or exogenous as the case may be. For instance, the US current-account deficit is affected by exchange rate movements, growth and price developments both in the United States and in other countries, etc. In addition, some of the items may well be interrelated. A shift in OPEC countries' reserve holdings from the United States to the Euro-Deutsche Mark market may cause the Deutsche Mark to appreciate, which may affect the US current and/or capital account. The purpose of using this format is not to explain such causes of reserve developments but to find some clues as to the development of the world economic and financial conditions behind changes in global reserves.

Some examples of transactions which cause changes in global reserves and of how such transactions are recorded in Tables 4 and 5 are provided below. All countries, apart from the United States (US), are classified into three groups, viz. secondary reserve centre countries (SRC), OPEC countries (OP) and non-oil developing countries (LDC). (For simplicity's sake no other types of countries are considered, but this does not detract from the findings arrived at below.) T accounts are extensively used to show effects of reserve-related transactions on countries' balance-of-payments accounts, the left-hand side representing net outflows of funds. Notations in the T accounts below are:

${}^{j}R^{i}$: increase in country group i's foreign exchange reserves held in country group j

C_i: current-account surplus of country group i

${}^{j}I$: country group i's net private[4] capital outflows to country group j.

Example 1: OPEC countries shift their reserve holdings from the United States to the Euro-dollar markets.

US		SRC		OP	
	${}^{us}R^{op}(-\alpha)$	${}^{us}SRC(+\alpha)$	${}^{src}R^{op}(+\alpha)$		${}^{us}R^{op}(-\alpha)$
	${}^{us}SRC(+\alpha)$				${}^{src}R^{op}(+\alpha)$

According to our format, reserves held outside the United States (${}^{src}R^{op}$) increase and those in the United States (${}^{us}R^{op}$) decrease in Table 4. As a counterpart to the latter change, net capital inflows into the United States (${}^{us}SRC$) increase in Table 5 at the same time. This transaction produces no change in the global foreign exchange reserves, provided the magnitude of such a shift is too small to cause any resultant disruption to interest rate structures in both the United States and other countries' markets. (The following examples

[4] The term "private" sector covers all parties except official monetary authorities.

similarly assume no change in interest rate differentials between the two markets.)

Example 2: US banks increase their loans to the LDCs' official authorities.

US		LDC	
${}^{ldc}US\,(+\alpha)$	${}^{us}R^{ldc}\,(+\alpha)$	${}^{us}R^{ldc}\,(+\alpha)$	${}^{ldc}US\,(+\alpha)$

In Table 4 reserves held in the United States (${}^{us}R^{ldc}$) increase, with a corresponding increase in US capital outflows (${}^{ldc}US$) in Table 5. The result is an increase in global reserves.

Example 3: Euro-banks increase their loans to the LDCs' official authorities.

US		SRC		LDC	
	${}^{us}R^{ldc}\,(+\alpha)$	${}^{ldc}SRC\,(+\alpha)$		${}^{us}R^{ldc}\,(+\alpha)$	${}^{ldc}SRC\,(+\alpha)$
	${}^{us}SRC\,(-\alpha)$	${}^{us}SRC\,(-\alpha)$			

An increase in US-held reserves (${}^{us}R^{ldc}$) in Table 4 together with US net capital outflows of ${}^{us}SRC$ in Table 5, showing an increase in global reserves.

Example 4: US banks lend α to LDCs' official authorities, which place α with Euro-banks.

US		SRC		LDC	
${}^{ldc}US\,(+\alpha)$	${}^{us}SRC\,(+\alpha)$	${}^{us}SRC\,(+\alpha)$	${}^{src}R^{ldc}\,(+\alpha)$	${}^{src}R^{ldc}\,(+\alpha)$	${}^{ldc}US\,(+\alpha)$

An increase in reserves held outside the United States (${}^{src}R^{ldc}$) in Table 4. The corresponding changes in Table 5 are nil, an increase (${}^{ldc}US$) and a decrease (${}^{us}SRC$) in US capital outflows offsetting each other.

Example 5: US current-account deficits vis-à-vis secondary reserve centre countries (no official intervention in the exchange markets).

US		SRC	
	$C_{us}\,(-\alpha)$	${}^{us}SRC\,(+\alpha)$	$C_{src}\,(+\alpha)$
	${}^{us}SRC\,(+\alpha)$		

(Note that SRC's private sector has a long dollar position.)

No change in Table 4. In Table 5 US current-account deficits ($-C_{us}$) are offset by US capital inflows (${}^{us}SRC$).

Example 6: Official monetary authorities in secondary reserve centre countries intervene in the exchange markets to buy dollars.

US		SRC	
	${}^{us}SRC\,(-\alpha)$	${}^{us}SRC\,(-\alpha)$	
	${}^{us}R^{src}\,(+\alpha)$	${}^{us}R^{src}\,(+\alpha)$	

An increase in US-held reserves (${}^{us}R^{src}$) in Table 4. Its counterpart is US capital outflows to the secondary reserve centres ($-{}^{us}SRC$).

Example 7: Activation of the swap arrangement between the United States and secondary reserve centre countries.

US		SRC	
${}^{src}R^{us}\,(+\alpha)$	${}^{us}R^{src}\,(+\alpha)$	${}^{us}R^{src}\,(+\alpha)$	${}^{src}R^{us}\,(+\alpha)$

Increases in reserves held in the United States (${}^{us}R^{src}$) and those held in the secondary reserve centres (${}^{src}R^{us}$) occur at the same time in Table 4. The counterpart to the former increase is the increase in US official reserves. Note that the activation of the swap generates twice as many reserves as the swapped amount.

Example 8: The United States intervenes in the exchange markets, selling secondary reserve currency.

US	
$^{src}R^{us}(-\alpha)$	
$^{src}US(+\alpha)$	

SRC	
	$^{src}R^{us}(-\alpha)$
	$^{src}US(+\alpha)$

A decline in reserves held in secondary reserve centres ($-{}^{src}R^{us}$) in Table 4, US net capital outflows (^{src}US) being offset by a decline in US official reserves ($^{src}R^{us}$) in Table 5.

Example 9: The IMF lends α in SRC's currency to LDCs.

SRC	
$RP^{src}(+\alpha)$	$^{src}R^{ldc}(+\alpha)$

LDC	
$^{src}R^{ldc}(+\alpha)$	$MF(+\alpha)$

IMF	
$MF(+\alpha)$	$RP^{src}(+\alpha)$

where RP^{src}: SRC's reserve position in the IMF
MF: LDCs' credit position in the IMF

An increase in reserves held in secondary reserve centres ($^{src}R^{ldc}$) in Table 4 with no change in Table 5.

RESERVES AND INTERNATIONAL LIQUIDITY REVISITED – 1988[5]

by Michael Dealtry

This paper deals with developments in reserves and international liquidity during the years 1983–87. The period which it covers overlaps with that covered by the earlier paper, since it begins at the end of 1982. That starting point was chosen partly because 1982 was the last full year covered in the earlier paper, and partly because 1983 saw the first of the series of substantial US current-account deficits, the relationship of which to reserve developments is a key question about the period since end-1982.

The first part of the paper describes the main features of reserve developments during 1983–87; the second part deals with the sources of the growth of reserves during that period and, in particular, with the question mentioned above about the connection between reserve growth and the US balance of payments; and the final part assesses the evolution of reserves and international liquidity since the end of 1982 and considers whether the present level of reserves in the industrial world gives reason for serious concern.

I. Reserve developments since end-1982

(a) Changes in global reserves and their asset composition

Since the end of 1982 there has been a very substantial increase in global reserves. Excluding gold, countries' total reserve assets more than doubled in current dollar terms during 1983–87, from

[5] I am very grateful to Alexandre Lamfalussy for his help and encouragement in the preparation of this paper. I also wish to thank Horst Bockelmann, Helmut Mayer and Gunter Baer for their criticisms of earlier drafts, and Robert von Werra for his statistical work.

$332.5 to 670.9 billion. About $80 billion, or nearly one-quarter, of the increase may be estimated to have come about through the rise in the current dollar value of non-gold reserves held in forms other than US dollars which resulted from the decline in the external value of the dollar over the period as a whole. Measured in constant dollars, therefore, the increase in global non-gold reserves may be estimated in round figures to have been about $258 billion.

Gold has played no part in the volume increase of global reserves since end-1982. Countries' total official holdings of gold have remained very stable at around 1,035 million ounces. Their current dollar value at market prices was, however, about 10% higher at the end of 1987 than it had been five years earlier. During the course of

Table 1
Global reserve developments, 1982–87
(in billions of US dollars)

Items	Amounts outstanding at end of period						Changes 1983–87	
	1982	1983	1984	1985	1986	1987	in current dollars	at constant end-of-period exchange rates*
Non-gold reserves								
Foreign exchange	284.9	289.8	314.5	352.4	411.0	597.6	312.7	251.4
IMF reserve positions	28.1	40.9	40.8	42.5	43.2	44.6	16.5	3.9
SDRs	19.5	15.1	16.1	20.0	23.8	28.7	9.2	3.0
Total	332.5	345.8	371.4	414.9	478.0	670.9	338.4	258.3
Gold reserves								
Volume (in millions of fine ounces)	1,034.9	1,033.6	1,032.5	1,035.1	1,035.6	1,033.4		
Value, at current market prices	455.8	397.8	323.6	338.6	402.3	499.8		

Note: The basic source of information for the reserve figures given in this and the following tables is data published by the International Monetary Fund. The data on gold and foreign exchange reserves included in this and other tables include gold and dollars swapped against ECUs by EMS member countries since March 1979.
* Changes in non-dollar reserve assets included in this column have been calculated year by year at constant end-year exchange rates. The yearly changes are calculated as the difference between the end-year total of such assets and their total at the beginning of the year (i.e. the end of the previous year) recalculated at the exchange rates prevailing at the end of that year.

the period it fluctuated appreciably, declining by about $130 billion during 1983–84 and increasing during 1986–87 by about $160 billion.

Among non-gold reserve assets, reserves held in the form of claims on the International Monetary Fund, i.e. countries' total IMF reserve positions and holdings of Special Drawing Rights, have contributed very little to overall reserve growth since end-1982. They increased by only $25.7 billion in current dollar terms, with nearly three-quarters of the rise having been accounted for by the depreciation of the dollar against the SDR. No new allocations of SDRs took place and the share of SDRs in total non-gold reserves had by end-1987 declined to a little over 4%.

The increase in global non-gold reserves over the whole period 1983–87 therefore continued to be overwhelmingly in the foreign exchange component. In current dollar terms, total exchange reserves went up by $312.7 billion, raising the share of the foreign exchange component in non-gold reserves from 86 to 89%.

The growth of global non-gold reserves since end-1982 divides into two main phases, the years 1983–85 and the period since then. Between these two phases the growth of reserves accelerated very sharply in current dollar terms, from $82.4 to 256 billion. Part of this acceleration was due to the movements of the dollar's exchange rate. Thus during the first two years of the first phase the dollar was appreciating, which meant that the current dollar value of stocks of other types of non-gold reserves was declining, while from March 1985 onwards the depreciation of the dollar produced the opposite effect. If changes in total non-gold reserves are measured at constant exchange rates, their growth may be estimated to have been about $77 billion in the first phase and $181 billion in the second. Moreover, by 1987, when the largest part of the reserve increase took place, the international purchasing power of the dollar was considerably lower than it had been in the first part of the 1980s.

The principal reason for the much faster growth, at constant exchange rates, of reserves in the second phase was massive central bank purchases of dollars in 1987 aimed at stabilising the dollar's exchange rate. Co-ordinated central bank intervention in the dollar

exchange market had begun in February 1985 and was stepped up after the Plaza meeting of the Group of Five countries in September of that year. But the 1985 interventions were aimed at reversing the earlier appreciation of the dollar. They had little net effect on the global total of reserves since the purchases of yen and Deutsche Mark by the US authorities and the sales of dollars by other central banks tended to offset one another.

As regards the currency composition of exchange reserves, the estimates given in Table 2 indicate that taking the years 1983–87 as a whole there was no major change in the respective shares of the three main reserve currencies in global exchange reserves measured in current dollar terms. Measured in constant end-1982 dollars, however, the dollar's share in total exchange reserves rose during these five years from 70.6 to 76.9%, the main counterpart to this having been a reduction in the combined share of secondary reserve currencies other than the Deutsche Mark and the yen.

On the other hand, during the course of the period there were some quite pronounced movements in the relative shares of the three main reserve currencies both in global exchange reserves and in the aggregate exchange reserves of industrial and developing countries. In view of the large movements in the exchange rate of the dollar during 1983–87 the estimated evolution of the currency composition of exchange reserves is shown in Table 2, for the three main reserve currencies individually and for all other reserve currencies taken together, both in current dollar terms and in constant end-1982 dollars.

During 1983 and 1984, when the dollar was still appreciating against other currencies, its share in all countries' exchange reserves, measured in value terms, was rather constant at around 70%. This meant that in volume terms it declined by nearly five percentage points, to 65.8%. The volume decline was particularly marked in the industrial countries, and it owed much to accumulations of Deutsche Mark reserves by Germany's partners in the EMS exchange rate mechanism. This was a period when the market saw no immediate prospect of a realignment of rates in the EMS mechanism and when

Table 2
Estimated currency composition of foreign exchange reserves, 1982–87
(in percentages)

At year-end	US dollars		Deutsche Mark		Japanese yen		Other currencies	
	value	volume*	value	volume*	value	volume*	value	volume*
	All countries							
1982	70.6	70.6	12.3	12.3	4.5	4.5	12.6	12.6
1983	71.8	69.8	11.1	12.4	4.7	4.6	12.4	13.2
1984	70.6	65.8	11.9	14.7	5.5	5.4	12.0	14.1
1985	66.1	66.0	14.3	14.7	7.4	6.3	12.2	13.0
1986	69.3	73.1	13.7	11.8	6.9	4.9	10.1	10.2
1987	69.0	76.9	14.8	11.0	6.9	4.0	9.3	8.1
	Industrial countries							
1982	76.0	76.0	13.1	13.1	4.4	4.4	6.5	6.5
1983	76.8	75.0	13.0	14.6	5.1	4.9	5.1	5.5
1984	73.6	68.8	15.2	18.8	6.3	6.2	4.9	6.2
1985	65.2	65.3	19.8	20.5	8.8	7.5	6.2	6.7
1986	68.1	72.7	18.1	15.8	8.2	5.9	5.6	5.6
1987	70.1	77.1	18.0	14.4	6.5	3.7	5.4	4.8
	Developing countries							
1982	65.4	65.4	11.5	11.5	4.6	4.6	18.5	18.5
1983	66.8	64.7	9.3	10.3	4.4	4.2	19.5	20.8
1984	67.8	62.9	8.8	10.9	4.7	4.6	18.7	21.6
1985	66.9	66.7	8.7	9.0	6.0	5.1	18.4	19.2
1986	70.7	73.6	8.3	7.0	5.3	3.8	15.7	15.6
1987	67.4	75.0	10.1	7.5	7.5	4.4	15.0	13.1

Note: The figures in this table are based on IMF estimates, supplemented by BIS estimates of the currency composition of certain countries' foreign exchange reserves.
* At constant end-1982 exchange rates.

there were substantial inflows of funds into EMS countries where nominal interest rates were higher than in Germany. In volume terms the Deutsche Mark share in industrial countries' aggregate exchange reserves rose from 13.1 to 18.8% during 1983–84. There was also a modest increase in the volume of industrial countries' yen reserves during those two years.

In 1985, when the dollar began to depreciate, there was a decline in the share of the dollar in total exchange reserves to about 66% in current dollar terms, virtually all of which was in industrial

countries' reserves. In volume terms, the share of the dollar in total exchange reserves was virtually unchanged, with a decrease in the industrial countries having been offset by an increase in the developing countries. The decreased volume share of the dollar in industrial countries' reserves during 1985 was to a considerable extent the consequence of the central bank intervention to which reference has already been made. The US authorities were purchasing non-dollar currencies while other central banks were selling dollars.

Between end-1985 and end-1987 the share of the dollar in total exchange reserves rose both in value and volume terms as a result of the very large central bank purchases of dollars. Owing to the further depreciation of the dollar against other currencies the increase was greater in volume than in value terms. In volume terms the dollar's share in developing countries' total exchange reserves was significantly higher at the end of 1987 than it had been five years earlier. The dollar's depreciation after February 1985, plus diversification of reserves out of dollars into other currencies in 1987, meant that in value terms the industrial countries' dollar reserves at the end of 1987 represented a smaller proportion of their total exchange reserves than they had been five years earlier, despite those countries' very large official dollar purchases in 1987.

Looking at the period since end-1982 as a whole it can be said that changes in the currency composition of exchange reserves do not appear to have reflected, except to a certain extent in 1987, changes in countries' preferences with respect to the holding of different reserve currencies. Rather, they were mainly a by-product of exchange rate policies and balance-of-payments financing requirements.

(b) Reserve developments by groups of countries

Since end-1982 there have been marked shifts in the distribution of total non-gold reserves between different groups of countries. Reversing the trends of the 1970s and early 1980s, the industrial countries' share in total non-gold reserves rose in current dollar

terms from about 52 to 61%, while that of the oil-exporting countries more than halved, from 22 to 10%. The share of non-oil developing countries in the total rose from 26 to 29%. Excluding Taiwan, however, it declined from 24 to 20%.

The $68.2 billion increase in Taiwan's non-gold reserves during 1983–87 was the largest recorded by any single country, exceeding even the $57.6 billion rise in Japan's reserves. Together these two countries accounted for 37% of the increase in global non-gold reserves since end-1982 and for 42% of the increase during 1986–87.

Table 3
Developments in non-gold reserves by principal groups of countries, 1982–87
(in billions of US dollars)

Items	Amounts outstanding end-1982	Changes					Amounts outstanding end-1987
		1983	1984	1985	1986	1987	
Industrial countries	173.7	7.8	10.9	27.2	51.2	136.8	407.6
(at constant end-of-period exchange rates)		*12.6*	*17.3*	*11.7*	*31.1*	*111.4*	
Oil-exporting countries	72.5	−3.7	−2.0	7.7	−12.9	5.9	67.5
(at constant end-of-period exchange rates)		*−1.3*	*0.7*	*2.7*	*−18.3*	...	
Non-oil developing countries	86.3	9.2	16.7	8.7	24.8	50.1	195.8
(at constant end-of-period exchange rates)		*12.0*	*20.8*	*0.3*	*17.0*	*40.3*	
Total	332.5	13.3	25.6	43.6	63.1	192.8	670.9
(at constant end-of-period exchange rates)		*23.3*	*38.8*	*14.7*	*29.8*	*151.7*	
Memorandum item: Non-oil developing countries, excluding Taiwan	77.8	5.9	12.9	1.8	1.0	19.7	119.1
(at constant end-of-period exchange rates)		*8.7*	*16.9*	*−6.4*	*−6.5*	*10.2*	

Turning to reserve developments in the industrial countries as a group, at the end of 1982 these countries' total exchange reserves had amounted in current dollar terms to $139.4 billion and by end-1987 this figure had increased by $216 billion, or 155%, to $355.4 billion. Over 80% of that increase, or $179.9 billion, occurred after 1985 and 61% of it, or $132.4 billion, in 1987. The 1987 increase in industrial countries' total exchange reserves was the largest ever recorded in a single year both in current dollars and, at almost 60%, in percentage terms too.

Table 4
Evolution of industrial countries' foreign exchange reserves, 1982–87
(in billions of current US dollars)

Countries	Amounts outstanding end-1982	Changes				Amounts outstanding end-1987
		1983–85	1986	1987	1983–87	
Belgium	1.8	−0.9	0.4	2.7	2.2	4.0
Canada	2.6	−1.0	0.7	3.9	3.6	6.2
France	6.6	10.2	2.9	1.8	14.9	21.5
Germany	29.0	−0.2	7.5	21.2	28.5	57.5
Italy	8.2	3.0	0.5	7.4	10.9	19.1
Japan	19.2	3.2	15.3	38.0	56.5	75.7
Netherlands	4.8	0.2	0.9	2.6	3.7	8.5
Sweden	3.1	2.2	0.6	1.6	4.4	7.5
Switzerland	14.9	2.5	3.9	5.8	12.2	27.1
United Kingdom	8.1	−0.3	5.2	22.7	27.6	35.7
United States	10.2	2.6	4.5	−4.2	2.9	13.1
Total Group of Ten	108.5	21.5	42.4	103.5	167.4	275.9
Australia	6.3	−1.0	1.4	1.4	1.8	8.1
Austria	4.8	−0.6	1.4	1.2	2.0	6.8
Denmark	1.9	2.8	–	5.1	7.9	9.8
Finland	1.3	2.1	−2.0	4.6	4.7	6.0
Iceland	0.1	0.1	0.1	–	0.2	0.3
Ireland	2.4	0.1	0.3	1.6	2.0	4.4
New Zealand	0.6	1.0	2.2	−0.5	2.7	3.3
Norway	6.3	6.8	−1.6	1.6	6.8	13.1
Spain	7.2	3.3	3.3	13.9	20.5	27.7
Total others	30.9	14.6	5.1	28.9	48.6	79.5
Grand total	139.4	36.1	47.5	132.4	216.0	355.4

Taking the period as a whole, the largest gainers in current dollar terms, after Japan ($56.5 billion), were Germany ($28.5 billion), the United Kingdom ($27.6 billion), Spain ($20.5 billion), France ($14.9 billion), Switzerland ($12.2 billion) and Italy ($10.9 billion). Two other countries — Denmark and Norway — recorded gains of between $7 and 8 billion, and only Iceland added less than $1 billion to its exchange reserves. In percentage terms Denmark's and New Zealand's reserves rose by over 400%, those of Finland and the United Kingdom by over 300%, and those of Japan, Spain and

France by over 200%. The reserves of Belgium, Canada, Iceland, Italy, Norway and Sweden each went up by over 100%.

The difference between the first and second phases of the period since end-1982 is clearly visible both in the size of the industrial countries' total exchange reserve gains — which accelerated from $36.1 to 179.9 billion between the two phases — and in their country distribution. During the first phase, covering the years 1983–85, Germany's partners in the EMS exchange rate mechanism accounted for $15.4 billion, or 43%, of the total increase, largely as a result of official purchases of Deutsche Mark. On the other hand, five industrial countries, including Germany and the United Kingdom, experienced declines in their exchange reserves during this phase, while Japan's exchange reserves rose by only $3.2 billion, which was certainly less than the income derived from its reserve holdings.

In the second phase, after 1985, the country distribution of additions to industrial countries' exchange reserves was markedly different from what it had been earlier and also more widespread. Japan alone added $53.3 billion to its reserves, and the next largest gainers were Germany ($28.7 billion), the United Kingdom ($27.9 billion) and Spain ($17.2 billion). Together these four countries accounted for 71% of the total increase. Germany's partners in the EMS exchange rate mechanism added $26.2 billion to their combined exchange reserves, and their combined share in the overall increase for the group as a whole fell to 14½%. This was because the effects on some of these countries' total reserves of substantial official purchases of dollars were partly offset by a reduction of their Deutsche Mark assets, particularly in the months immediately preceding the January 1987 realignment of central rates. In percentage terms the largest reserve gains during 1986–87 were recorded by the United Kingdom (358), Belgium (344), Canada (288), Japan (238), Spain (164), Denmark (109), New Zealand (106) and Germany (100).

Both the size and the widespread distribution of industrial countries' reserve gains since end-1982 contrast with the experience

of the developing countries. In the OPEC group total non-gold reserves fell by $5 billion during 1983–87, with Saudi Arabia alone losing $6.9 billion. Among the non-OPEC LDCs Taiwan accounted for 62% of the $109.5 billion increase in these countries' aggregate reserves. While end-1987 reserve data are not yet available for all developing countries, other non-OPEC countries to record appreciable reserve gains included Mexico ($12.1 billion), Singapore ($5.5 billion), China ($5 billion), Malaysia ($3.7 billion) and Portugal ($3 billion).

II. The sources of reserve growth since end-1982

Since the growth of global reserves during the years 1983–87 was overwhelmingly accounted for by the foreign exchange component, the essential question about the sources of reserve growth over that period concerns the factors which contributed to the increase in exchange reserves.

Table 5 shows the identifiable changes that have taken place since end-1982 in dollar and other exchange reserves of countries other than the United States (items 3(a) to 3(c)) by types of placement. Dollar reserves held in the United States are shown separately from those held in the Euro-dollar market with banks that report international banking data to the BIS, while non-dollar reserves include those held both in the national markets of the currencies concerned and with banks in the Euro-currency market.

A striking feature of Table 5 is the size from 1985 onwards, and particularly in 1987, of the "unallocated" item, i.e. those additions to global exchange reserves the deployment of which cannot be allocated to any of the three types of placement mentioned above. By far the largest part of these "unallocated" increases in exchange reserves appears to have been in the dollar component. While the increase in dollar reserves during 1983–87 which is shown in Table 5 amounts to some $113 billion, the true increase in dollar reserves during this period was of the order of $200 billion.

Table 5
Estimated changes in foreign exchange reserves, by types of placement, 1983–87
(in billions of US dollars)

Items	1983	1984	1985	1986	1987
1. Changes in total foreign exchange reserves	4.9	24.7	37.9	58.6	186.6
Changes at constant end-of-period exchange rates	*12.5*	*34.4*	*15.9*	*32.4*	*156.2*
2. Changes in US foreign exchange reserves	−3.9	0.4	6.2	4.5	−4.2
3. Changes in foreign exchange reserves of countries other than the United States	8.8	24.3	31.7	54.1	190.8
of which: *(a) dollar reserves held in the United States*[1]	*5.3*	*2.4*	*−2.0*	*33.0*	*47.5*
(b) dollar reserves held outside the United States[2]	*–*	*10.4*	*−4.8*	*−1.1*	*22.5*
(c) non-dollar reserves[3]	*1.5*	*8.6*	*21.7*	*5.7*	*60.1*
(d) unallocated	*2.0*	*2.9*	*16.8*	*16.5*	*60.7*

[1] Equals foreign official assets in the United States. [2] Cross-border deposits by official monetary institutions with Euro-banks reporting to the BIS. Includes all deposits with these banks by residents of China, Hungary, Poland and Romania. [3] Estimates from IMF and BIS sources.

Given that most of the global increase in exchange reserves since end-1982 has been in dollar reserves, what can be said about the factors that brought this about? The obviously true, but almost tautological, answer is that central banks outside the United States decided or accepted to increase their holdings of dollars — mainly by intervening in the exchange market but also in other ways, e.g. through the accrual of interest on their outstanding dollar assets. But that statement does not constitute much of an explanation. The principal single motive behind central banks' decisions to add to their dollar reserves was surely the desire to slow down the appreciation of their currencies, or to stabilise them, against the dollar; and the movements of exchange rates that led to those decisions obviously had something to do with the evolution of the US balance of payments.

During 1983–87 the cumulative deficits on the current account of the US balance of payments totalled $572 billion, with a

corresponding accumulation (leaving on one side the small changes in the United States' own reserve assets) by the rest of the world of net claims (private and official) on the United States. But the time pattern of the evolution of total dollar reserves over the period since the end of 1982 shows that there is no simple relation between that evolution and the US balance of payments. During 1983–85, when US current-account deficits totalled $270 billion, the identified increase in dollar reserves was about $11 billion. Even if nearly all of the "unallocated" increase of exchange reserves during those years was in the dollar component, total additions to dollar reserves would come to no more than $30 billion, or hardly over 10% of the cumulative US current-account deficits. During 1986 and 1987, on the other hand, when the US deficits totalled about $300 billion, the true increase in dollar reserves was well over $150 billion.

The key questions then are the following: why was it that during the first phase private investors in the rest of the world accepted, or decided, to hold virtually all of the additional claims on the United States that were the counterpart to the US current-account deficits? And why, in the second phase, did central banks decide to add so much to their dollar reserves, held either in the United States or elsewhere? In other words, why did this shift from private to official accumulation of dollar assets take place?

In the first phase, the salient feature of the US balance of payments was that the deficits on current account were accompanied, until February 1985, by a substantial appreciation of the dollar's exchange rate. From its low point in late 1978 the dollar had already by end-1982 appreciated by 37% against the Deutsche Mark and by 34% against the yen; between end-1982 and late February 1985 it went up by a further 46 and 12% respectively against those currencies. This means that during most of the first phase the main driving force in the US balance of payments was increased demand for US assets by private investors in the rest of the world. By pushing up the dollar's exchange rate, this demand played an important (although unquantifiable) part in the emergence of large US current-account deficits. As Table 6 shows, the additions to

Table 6
The US balance of payments 1983–87:
Current-account deficits and principal counterpart items
(in billions of US dollars)

Items	1983–85	1986	1987	1983–87
Current-account balance	–269.7	–141.3	–160.7	–571.7
Total capital-account balance	272.2	108.0	104.0	484.2
US Government transactions*	– 11.3	– 0.2	– 2.0	– 13.5
Other capital transactions	283.5	108.2	106.0	497.7
of which:				
increases in foreign liquid or marketable claims on the United States	239.9	139.5	98.5	477.9
claims on US banks	*125.2*	*77.4*	*77.9*	*280.5*
holdings of US Treasury securities	*52.1*	*8.3*	*– 6.1*	*54.3*
holdings of US bonds other than Treasury securities	*62.6*	*53.8*	*26.7*	*143.1*
Dollar reserves held in the United States (increases +)	5.7	33.0	47.5	86.2
US reserve assets (increases –)	– 8.2	0.3	9.2	1.3
of which:				
foreign exchange	*– 1.7*	*– 0.9*	*7.6*	*5.0*

* Excluding transactions in US government securities.

foreign private investors' claims on the United States were to a very large extent liquid or marketable in character.

The factors which produced the strong private foreign demand for US assets during 1983–85 lay partly in the United States and partly elsewhere. Internal factors in the United States included the high level of US interest rates — itself produced by the mix of an expansionary fiscal policy and a restrictive monetary policy — plus the superior dynamism of the US economy which stimulated foreign direct and portfolio investment in the United States. External factors included capital flight from countries, notably in Latin America, with precarious economic or political situations and portfolio shifts into US assets by investors in some major industrial countries which had recently removed or relaxed exchange controls

— as the United Kingdom had done at the end of the 1970s and Japan from the early 1980s onwards.

It may be added that the expansionary US fiscal policy not only helped, through its influence on the level of dollar interest rates, to stimulate foreign demand for US assets. It also opened up a wide gap between the growth of domestic demand in the United States and other countries — a gap which contributed to the deterioration of the US external current-account balance. But for that gap, the increased foreign demand for US assets might have led to an even sharper appreciation of the dollar's exchange rate than actually occurred.

The situation had already begun to change in 1985, when central bank intervention on the exchange market helped to halt, and then reverse, the dollar's appreciation. By the beginning of 1986, under the influence of that signal and of continued increases in the US current-account deficit, the second phase began. Private investors in the rest of the world became increasingly reluctant to add to their dollar assets at going exchange rates so that the dollar began to depreciate without further help from central bank sales of dollars. Moreover, from mid-1984 onwards the rate of growth of US domestic demand slowed down substantially.

With the US current-account deficit no longer being fuelled in the same way as before by the influences mentioned above, its continued increase after 1985 resulted from other factors. Apart from the influence of J-curve effects, two other factors may be mentioned. Firstly, there was the legacy of the preceding years and, in particular of the dollar's earlier appreciation. On the export side the competitive position of US industry had weakened substantially and, given the long period over which the dollar had appreciated, it was not to be expected that US exports would be rapidly rebuilt after the dollar began to come down again. Nor, on the import side, was it to be expected that foreign exporters would readily give up the earlier gains that they had made in the US market. Not surprisingly, they tried to hold on to as much of them as possible, by limiting the increases in the dollar prices of their goods. Another aspect of the

legacy from earlier years that continued to burden the US current account after 1985 was the rising cost of servicing the rest of the world's portfolio of US assets.

A second factor that contributed to the persistence of US current-account deficits after 1985 was the failure to reverse the earlier differential between the United States and the main surplus countries with respect to the growth of domestic demand. The narrowing or disappearance of that differential was not enough to contribute to reducing the current-account imbalances between the major countries.

In this situation, with the US current-account deficit continuing to increase, and with foreign private investors becoming more reluctant to place funds in the United States, dollar reserves began to increase more rapidly than before as central banks intervened in the exchange market, at first in 1986 to moderate the decline of the dollar and subsequently, on a much larger scale in 1987, after the Louvre agreement in an attempt to stabilise exchange rates around the levels prevailing in February 1987.

It should be added that in 1987 by no means all the central bank intervention in the dollar exchange market was aimed at stabilising the dollar. Some European central banks outside the EMS exchange rate mechanism, whose currencies were subject to strong upward pressure as a result of capital inflows, at times increased the market supply of their currencies through intervening on the dollar exchange market primarily with a view to stabilising their exchange rates against the Deutsche Mark.

To summarise what can be said about the relation between US current-account deficits and the evolution of dollar reserves since end-1982: during 1983–85 the growth of dollar reserves was very moderate in relation to the size of the current-account deficits, since there was a large increase in private foreign demand for US assets which, by pushing up the dollar's exchange rate, was itself a major cause of the deficits; after 1985, on the other hand, the continued increase in the US current-account deficit and the accompanying loss of confidence in the dollar on the part of foreign private investors

produced a depreciation of the dollar on a scale that led to massive central bank intervention.

A notable feature of the increase in dollar reserves after 1985 was the relatively limited extent to which it took the form of identified additions to dollar reserves held in the United States. While no published data on world dollar reserves are available, as already mentioned they must have gone up during 1986–87 by well over $150 billion, while over the same period the US balance of payments accounts show official dollar reserves held in the United States as having risen by only $80 billion (Table 6). The difference between the total increase in dollar reserves and additions to dollar reserves held in the United States was particularly marked in 1987, for two reasons. Firstly, an appreciable part of last year's additions to dollar reserves was invested outside the United States. Table 5 shows that during 1987 dollar reserves held with banks in the Euro-currency market rose by $22.5 billion. In addition there may have been purchases last year by some central banks of dollar securities issued by non-US residents which, as they do not represent claims either on the United States or on banks in the Euro-dollar market, would show up in the "unallocated" item in Table 5.

It may be added that when dollar reserves are invested outside the United States, to the extent that the funds in question are not on-lent inside the United States their reinvestment elsewhere may add to the reserves of other countries and thus give rise to a second-round increase in dollar reserves. This is particularly likely to be the case when the funds in question are invested in securities issued by non-US residents, whereas dollar reserves deposited with banks in the Euro-dollar market are likely, in most cases, to be lent out by those banks in the United States. Thus, the increase in official dollar deposits in the Euro-market last year, while it did not directly finance the US current-account deficit since Euro-dollar deposits are not claims on the United States, contributed to the financing by the market of the US deficit through the downward pressure that it exerted on interest rates in the Euro-dollar market.

The second factor that contributed to the large discrepancy in

1987 between total additions to dollar reserves and the recorded increase in dollar reserves held in the United States was probably an understatement, in the US balance-of-payments accounts, of the extent to which foreign central banks added to their dollar reserves held in the United States last year. There is reason to believe that some central banks invested dollars in the United States last year through the intermediary of financial market institutions outside the United States rather than directly. These acquisitions of dollar reserves in the United States would not show up as such in the US external accounts and they would therefore appear in the "unallocated" item in Table 5.

The other question about the sources of the increase in exchange reserves during 1983–87 concerns the additions to reserves held in currencies other than the dollar. Table 7 shows that over that whole period non-dollar exchange reserves of countries other than the United States rose by $97.6 billion in current dollar terms. In constant dollar terms, however, the increase was only $47.1 billion. Given this major influence of exchange rate movements on the current dollar value of reserves held in other currencies, Table 7 shows the changes in non-dollar exchange reserves of countries other than the United States for each year since 1983 both in current dollars and at constant exchange rates.

During 1983–85 total non-dollar reserves of countries other than the United States, measured in constant dollar terms, went up by $27.6 billion. Over 40% of that increase was in Deutsche Mark reserves. This probably reflected in large part additions to Deutsche Mark reserves held by Germany's partner countries in the EMS exchange rate mechanism following the March 1983 realignment of exchange rates in the mechanism, to which reference has already been made on page 47. Other additions to non-dollar reserves of countries outside the United States during 1983–85 were mainly in yen and sterling reserves.

In 1986, total non-dollar reserves of countries other than the United States declined, in constant dollar terms, by $15.9 billion. Half of that decline was in Deutsche Mark reserves and probably

Table 7
Estimated changes in non-dollar exchange reserves of countries other than the United States, 1983–87
(in billions of US dollars)

Items	1983	1984	1985	1986	1987
Total change in current dollars	1.5	8.6	21.7	5.7	60.1
Total change at constant end-of-period exchange rates	7.8	17.1	2.7	−15.9	35.4
of which:					
Deutsche Mark	*3.3*	*9.0*	*−0.8*	*− 8.1*	*21.4*
Japanese yen	*1.2*	*4.3*	*2.8*	*− 4.9*	*11.0*
Pounds sterling	*1.3*	*3.1*	*−0.8*	*− 0.4*	*0.7*

resulted from sales by Germany's partners in the EMS exchange rate mechanism of DM reserves purchased earlier, with most of these sales having taken place in the period immediately preceding the January 1987 realignment of rates in the mechanism. Yen reserves also declined in 1986, by nearly $5 billion.

In 1987 the evolution of non-dollar reserves turned round again, to record a rise of $35.4 billion in constant dollar terms. Almost two-thirds of the increase was in Deutsche Mark reserves and virtually the whole of the remainder in yen reserves. Two factors appear to have accounted for these developments. Firstly, there appears to have been quite significant diversification of exchange reserves out of dollars into other currencies. Secondly, some countries purchased Deutsche Mark in the market with the aim of stabilising their exchange rates against the Deutsche Mark.

It may be added that when countries diversify their exchange reserves out of dollars into other currencies there is an increase in global exchange reserves, since the additions to non-dollar reserves will not be accompanied by a one-for-one decline in dollar reserves. That is because sales of dollar reserves for other currencies tend to occur at times when those other currencies are already strong and, thus, to put further upward pressure on them. The central banks in the secondary reserve countries will therefore often react by taking into their own reserves the dollars sold by other central banks.

III. Assessment of the evolution of international liquidity since end-1982

What have been the effects of the reserve developments described above on international liquidity in the system as a whole, or in particular groups of countries? In trying to answer that question, two points have to be borne in mind. Firstly, reserves are only one element, although certainly an important one, in countries' total gross international liquidity. In its widest sense gross international liquidity includes other important, although statistically unquantifiable, elements. These are governments' or central banks' ability to reinforce their reserves by borrowing abroad themselves, plus the private sector's own liquid external assets and its ability to borrow abroad.

Secondly, the adequacy of countries' gross reserves, or their international liquidity, has to be assessed in relation to the calls that may be made on them. Two relevant factors in that respect are the levels of countries' imports and, particularly for heavily indebted countries, the size of their external indebtedness and the extent to which it has a short-term maturity profile.

Any assessment of reserve developments during 1983–87 must take as its starting point the situation that existed at the beginning of the period. Its outstanding feature was the absence of any uniform degree of reserve and liquidity ease in the system as a whole. At that time countries could be divided into two broad groups, and the differences in their situations were reflected as much in their international creditworthiness as in the actual levels of their reserves. On the one hand was a group which included the industrial countries, the low-absorbing OPEC members and nearly all the non-OPEC LDCs in Asia. The levels of their reserves were adequate or, in some instances, comfortable and they were able to borrow freely on the international markets. On the other hand was a group, including the rest of the developing world and most of eastern Europe, whose liquidity was clearly inadequate. Reserve levels in many of these countries were low and their international borrowing

Table 8
Selected groups of countries: Reserve/import ratios, 1982–87
(in percentages)

End of period	Industrial countries excluding the United States	G-5 countries excluding the United States	Oil-exporting countries	Latin America	Asian LDCs excluding Taiwan
1982	15.6	15.3	44.4	23.9	22.8
1983	17.1	16.2	47.6	30.2	25.4
1984	17.4	16.2	53.0	45.3	25.4
1985	18.8	18.3	70.6	45.5	23.6
1986	20.4	21.5	66.2	41.3	24.1
1987	27.2	30.2	81.0	45.5	24.2
Memorandum items					
1969	12.9	10.0	33.0	20.7	23.8
1972	34.8	40.3	69.4	38.7	27.4

potential was limited to whatever conditional credits they could obtain from the IMF and the international banking system.

The contrast between the situations of these two groups of countries has become more pronounced since end-1982 as a result of the increase in liquidity, both official and private, in the industrial countries, the huge increase in Taiwan's reserves and the continuing state of international illiquidity in much of the developing world. However, within the first of the two groups mentioned above the liquidity situation of the low-absorbing OPEC countries has deteriorated since end-1982, but not to such an extent as would justify their inclusion in the second group.

In the industrial countries one aspect of increasing reserve ease since end-1982 is illustrated by the evolution of their reserve/import ratio which is shown in Table 8. That ratio (which excludes the United States) improved in every year since 1983, with the biggest rise coming, of course, in 1987. In addition, it can be safely assumed that the lion's share of the increase in privately held foreign dollar assets since end-1982 has gone into the portfolios of investors in the industrial countries.

Increases in official reserves and privately held international liquidity of the kind seen in the industrial countries during recent years traditionally give rise to concerns of two kinds: firstly, that the countries concerned may be tempted to pursue unduly expansionary policies in the knowledge that they have the resources to finance large payments deficits; and secondly, that the reserve increases may, through their impact on domestic liquidity, increase the risks of inflation.

In the present situation, however, there are reasons for not being unduly concerned on either of those counts. In the first place, the industrial countries' reserve/import ratio is not at present obviously excessive by historical standards. In particular it is much lower than at the end of 1972, when industrial countries' reserves had been inflated by large central bank purchases of dollars during the years of the final breakdown of the Bretton Woods par value system. Secondly, the conservative approach to economic policy and the anti-inflationary record of many industrial countries during the 1980s makes it rather unlikely that today's greater reserve ease will tempt them into imprudent policies.

Thirdly, last year's massive central bank interventions in the exchange market were not accompanied by dramatic increases in domestic liquidity in the countries concerned. Moreover at the present time observed inflation rates in the major industrial countries are not currently at levels which give grounds for concern.

It does not follow from these considerations, however, that recent reserve increases are not a matter for concern at all. In the first place they are of concern as a symptom, and a consequence, of the slow pace at which the major current-account imbalances in the industrial world are being corrected. Secondly, there is some concern about the diversification of reserves out of dollars into other currencies that occurred in 1987, while the increases that have occurred in the rest of the world's dollar liquidity, both official and private, have added to the scope for further diversification out of dollars into other currencies should the dollar again come under strong downward pressure. Thirdly, some recent concerns about a

possible future revival of inflationary forces are in part linked to a belief that in certain countries last year's massive central bank interventions in the exchange market have, despite the sterilisation measures that were taken, had significant effects in terms of domestic liquidity creation.

Turning to the developing countries, the reserve/import ratio of the oil-exporting countries almost doubled between end-1982 and end-1987. However, this did not mean that reserve ease increased in these countries since the rise in the ratio resulted entirely from a sharp reduction, by nearly 50%, in these countries' aggregate imports produced by external financing constraints.

In the heavily indebted developing countries the situation of international illiquidity, as already mentioned, has not changed in recent years. It is true that in Latin America the reserve/import ratio has risen considerably since end-1982. But that has come about to a considerable extent on the imports side of the ratio: these countries' total imports, which had already fallen in current dollar terms by 21% in 1982, have since then been compressed by a further 18% in the face of external financing constraints. Moreover, on the other side of the ratio, the $11.5 billion increase in these countries' aggregate non-gold reserves since 1982 was more than accounted for by Mexico. Illiquidity in large parts of the developing world, like the present degree of reserve ease in the industrial world, is to a large extent the consequence of unresolved adjustment problems. Until those problems are overcome, these countries are unlikely to benefit much from any reserve creation through future US current-account deficits, nor will they regain spontaneous access to international market credits.

Looking at reserve developments since the early 1980s in a longer-term perspective, they have confirmed two major points that are related to one another. Firstly, the phenomenon of a global shortage of reserves, first envisaged back in the 1960s, seems as far off as ever. Secondly, the monetary system continues to generate its own reserve growth, at times on a considerable scale, and essentially in the form of additions to exchange reserves.

The absence at the present time of a global shortage of reserves is, as it has been for some years now, the result of the split situation in the system. While much of the developing world is short of reserves and unable to borrow them freely, elsewhere countries have adequate, or ample, reserves and are fully creditworthy in the eyes of the international financial markets. Over and above the facts of the present situation, however, the persistent failure of a global reserve shortage to materialise strongly suggests that this concept, which underlay the introduction of the IMF's Special Drawing Rights facility at the end of the 1960s, is not an easy one to operate with. That was in fact the case during the years that led up to the creation of the SDR facility, since the reserve shortage in the 1960s was limited to gold reserves. The concept has become even more elusive since then, for two reasons. Firstly, the hybrid nature of present exchange rate arrangements in the monetary system, notably with respect to the US dollar, can be characterised as managed floating, but with the extent of the management varying considerably over time. Secondly, the present very high degree of capital mobility internationally enables creditworthy countries to borrow at will in order to reinforce their reserves.

To say that the system continues to generate its own reserve growth does not, of course, imply that reserve developments in recent years have been optimal. Reserve growth (excluding gold) usually comes about in two main ways: firstly, as a result of policy decisions by individual governments that affect their balances of payments, either on current account or on capital account, in ways that cause reserves to grow; and, so far as borrowed reserves are concerned, through the international lending policies of financial institutions. As the policies of both governments and financial market institutions are sometimes imperfect, and as individual countries do not always find it easy to co-ordinate their policies internationally, it is not surprising that reserve developments are sometimes less than ideal.

When imperfect national policies, or imperfect co-ordination of different countries' policies, contribute to less than ideal reserve

developments, what may appear as reserve or liquidity problems, i.e. the emergence of a degree of reserve ease that is greater or less than would be desirable, are usually symptoms of underlying adjustment problems. Both the present shortage of liquidity in parts of the developing world and the present degree of reserve ease in industrial countries are, to a considerable extent, the latest exemplifications of this.

This means that the outlook for the future evolution of reserves and international liquidity depends first and foremost on the success with which current adjustment problems, in both industrial and developing countries, are handled. The principal question about the evolution of reserves in the near future is whether or not adjustment policies in the main industrial countries, and most importantly in the United States, will bring about a steadily declining trend in the US current-account deficit that will permit it to be, for the most part, financed in an orderly way through the market.

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