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February 10, 1993

To: Members of the Executive Board

From: The Secretary

Subject: A Note on Recent Trends and Developments in International
Financial and Capital Flows

There is attached for the information of Executive Directors a draft note on recent trends and developments in international financial and capital flows. This note was prepared by the staff at the request of the Group of Ten, and updates information that was contained in earlier Board papers, particularly in The Determinants and Systemic Consequences of International Capital Flows (SM/90/128, 6/29/90 and later Occasional Paper #77.).

Mr. Mathieson (ext. 37662) is available to answer technical or factual questions relating to this paper.

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A Note on Recent Trends and Developments in
International Financial Markets and International Capital Flows 2/

Prepared by Donald J. Mathieson

The past two decades have witnessed an unprecedented expansion in the volume and complexity of international financial transactions and capital flows which have been driven by economic fundamentals, technological changes, official policies and market distortions. The entry of new participants and the introduction of new financial instruments increased competitive pressures and produced important structural changes in international financial markets. These structural changes in turn raised concerns about new systemic risks and made the measurement of capital flows more difficult. To examine these developments, this note first identifies the key trends in international capital flows since the 1970s and discusses the factors that have influenced these trends. There follows consideration of the systemic implications of these developments for the effectiveness of monetary, fiscal and exchange rate policies; the risks associated with periods of high asset price volatility and excess debt accumulation, and the

1/ This note is preliminary. The views expressed should not be regarded as the official views of the Management or Executive Board of the International Monetary Fund.

2/ Further analysis of the issues examined in this note can be found in The Determinants and Systemic Consequences of International Capital Flows, (International Monetary Fund, Occasional Paper 77, March 1991) and Report on the Measurement of International Capital Flows (International Monetary Fund, September 1992). The macroeconomic and financial factors that affected foreign exchange markets and capital flows in Europe in the fall of 1992 are examined in A Note on Macroeconomic Causes of Recent Exchange Market Turbulence, and International Capital Markets, Developments, Prospects, and Key Policy Issues, Part 1, Exchange Rate Management and International Capital Flows in the Aftermath of the ERM Crisis (forthcoming).

access of developing countries to major international financial markets. Finally, there is a discussion of the difficulties that have been created for the measurement of international capital flows by the introduction of new participants and new instruments into international financial markets.

1. Key trends in international capital flows

Four key trends have characterized international capital flows in the period since the 1970s.

a. Sharp expansion in the scale of net and gross capital flows in the major industrial countries

First, there was a sharp expansion in the scale of net and gross capital flows among the industrial countries, as well as a much increased participation by foreign investors and foreign financial institutions in the major domestic financial markets. The sharp upswing in the level of net capital flows among the industrial countries was the counterpart to the historically large current account imbalances during the period (Table 1). Although large current account imbalances were evident in 1973-75 and in 1979-81, net capital flows between the industrial countries expanded most rapidly after 1982. Germany had an average annual net capital outflow of \$1 billion (equivalent to 0.5 percent of GNP) in 1970-72; in 1985-88, this outflow had grown to an average of \$39 billion a year (equal to nearly 4 percent of GNP). In the early 1990s, however, the reunification of Germany was accompanied by at first a reduced net capital outflow and, by 1991, a net capital inflow (of \$19 billion). Japan's capital outflow rose from \$5 billion a year in the early 1970s to \$75 in the mid-1980s (3.6 percent of GNP) before declining to \$55 in the early 1990s. The net capital

Table 1. Net International Capital Flows of Major Industrial Countries, 1970-91.
(Period averages)

	Germany				Japan				United States			
	1970-72	1979-81	1985-88	1989-91	1970-72	1979-81	1985-88	1989-91	1970-72	1979-81	1985-88	1989-91
Capital account balance 1/ (in billions of U.S. dollars)	-1.01	7.59	-38.51	-28.14	-4.81	4.91	-75.41	-55.25	1.63	-2.89	138.56	65.12
Capital account balance (in billions of U.S. dollars deflated by U.S. GNP deflator (1985=100))	-2.56	10.08	-36.44	-24.42	-12.10	7.01	-71.81	-46.01	3.83	-3.52	132.47	55.56
Capital account balance as percent of GNP	-0.46	0.97	-3.90	-2.22	-1.89	0.49	-3.57	-1.78	0.13	-0.10	3.13	1.21

Source: International Monetary Fund, Balance of Payments Statistics.

1/ This is taken as the counterpart to the current account imbalance. A positive value indicates a capital account surplus (inflow).

inflow into the United States accelerated from an average of \$2 billion a year (0.1 percent of GNP) in 1970-72 to an average of \$139 billion a year (3 percent of GNP) in 1985-88 before subsiding to \$65 billion a year in the early 1990s.

An even more rapid expansion occurred in gross capital flows (Table 2) which reflected increased cross-border banking transactions and flows of securities, the development of offshore (Eurocurrency) markets, and the entry of foreign financial institutions into domestic markets. For example, the stock of international loans (net of redepositing by banks) rose from \$175 billion at the end of December 1973 (5 per cent of industrial countries' GNP) to \$3.6 trillion at the end of 1991 (21 percent of the industrial countries' GNP). The stock of Eurocurrency and foreign bonds also increased from \$259 billion at the end of 1982 (3 percent of industrial countries' GNP) to \$1.7 trillion at the end of 1991 (10 percent of industrial countries' GNP). Moreover, between 1979 and 1991, the volume of international equity transactions increased on average by 15 percent a year; and reached \$1.5 trillion in 1991. Cross-border ownership of traded bonds and equities increased from about \$500 billion in 1983 to \$2 trillion in 1989.

These international capital flows were associated with sharp increases in both spot and derivative foreign exchange market transactions. Net spot turnover on the three largest foreign exchange (London, New York and Tokyo) increased three-fold between 1986 and 1992, rising from \$200 billion per day in March 1986 to over \$620 billion per day in April 1992. Since turnover in these market accounts for about two-thirds of turnover in all foreign exchange markets, global net turnover is currently estimated to

Table 2. International Bank Lending and International Bonds, 1973-1991¹
(in billions of dollars)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
International bank lending																			
BIS data (net of redepositing: stocks)	175	230	265	340	435	530	665	810	945	1,020	1,085	1,285	1,485	1,790	2,225	2,545	2,920	3,535	3,615
Growth rate (in percent)		31	15	28	28	22	25	22	17	8	6	18	16	21	24	14	15	21	2
BIS data (net of redepositing: flows)		45	50	70	55	85	125	160	165	95	85	90	105	195	300	260	410	465	85
Growth rate (in percent)		26	22	26	16	20	24	24	20	10	8	8	8	13	17	11	16	16	2
BIS data (gross: flows)		57	88	97	89	180	206	241	265	181	106	124	232	51	603	436	685	608	-57
Growth rate (in percent)		18	22	22	16	27	24	22	20	12	7	6	11	20	18	10	15	11	-1
IMF data (gross: flows)							347	414	404	186	166	180	278	539	802	554	836	729	-41
Growth rate (in percent)							27	24	20	8	7	7	10	17	20	11	15	11	-1
International bonds																			
BIS data (outstanding stock)										259	...	...	557	773	991	1,085	1,252.3	1,472.5	1,651.4
OECD data (net of redemptions: flows)										58	59	90	132	163	105	144	166.3	122	148.8

Sources: Bank for International Settlements (BIS); Organization for Economic Cooperation and Development (OECD); International Monetary Fund, International Banking Statistics (IBS); and IMF staff estimates.

¹IMF-based bank lending data on cross-border changes in bank claims are derived from the Fund's International Banking Statistics (cross-border interbank accounts by residence of borrowing bank plus international bank credits to non banks by residence of borrower), excluding changes attributed to exchange rate movements. BIS-based data are derived from quarterly statistics contained in the BIS's *International Banking Developments*; the figures shown are adjusted for the effects of exchange rate movements. Differences between the IMF data and the BIS data are mainly accounted for by the different coverages. The BIS data are derived from geographical analyses provided by banks in the BIS reporting area. The IMF data derive cross-border interbank positions from the regular money and banking data supplied by member countries, while the IMF analysis of transactions with nonbanks is based on data from geographical breakdowns provided by the BIS reporting countries and additional banking centers. Neither the IBS nor the BIS series are fully comparable over time because of the expansion of coverage.

be about \$1 trillion per day. By way of comparison, total non-gold foreign exchange reserves of the G-10 central banks amounted to roughly \$400 billion in early 1992. The share of derivative instruments transactions (swaps, forwards, futures, and options) grew markedly relative to spot transactions, rising from less than 40 percent of all foreign exchange transactions in 1986 to about 50 percent in 1992.

The "foreign" presence in major domestic financial markets has also increased as the need to finance large fiscal and current account imbalances in the industrial countries has created pressures for the breakdown of restrictions in domestic and external financial transactions. While data on the residency of the holders of industrial countries' bonds are notoriously poor, the United States reported that, while foreign and international entities held 7 percent of the Federal Government's outstanding securities at the end 1970, the proportion reached 12 percent at the end of 1991. In Germany, central government debt held by foreigners increased from 5 percent at the end of 1974 to 23 percent at the end of 1991. Competitive pressures in major domestic financial markets also increased with the entry of foreign institutions. Between 1970 and 1985, for example, the number of foreign banking offices in the United States rose from about 50 to over 780, whereas, in Germany, foreign banking offices rose from 77 to 287. Moreover, as restrictions on holding of foreign assets by institutional investors (mutual funds, insurance companies and pension funds) were relaxed, these investors accounted for a growing share of international securities transactions. For example, the 300 largest private pension funds in the world currently invest about 7 percent of their \$2 trillion of assets in foreign-currency denominated assets; and this is expected to rise to about

12 percent by the mid-1990s. The increased importance of such institutional investors has also been reflected in their growing share of foreign exchange transactions. While large international banks, securities houses, corporates, and central banks have continued to be the main players in foreign exchange markets, institutional investors such as mutual funds, pension funds, insurance companies, and, most importantly, hedge funds has shown that they are capable of larger shifts of funds across currencies on short notice.

b. Globalization and integration of offshore
and major domestic financial markets

The easing of capital controls and the broader liberalization of financial markets in industrial countries stimulated competition and brought about a growing integration of domestic and offshore markets--which in turn generated important efficiency gains. Indeed, the integration of global financial markets has proceeded much more rapidly than that of goods markets--in part because the latter has been inhibited by protectionism.

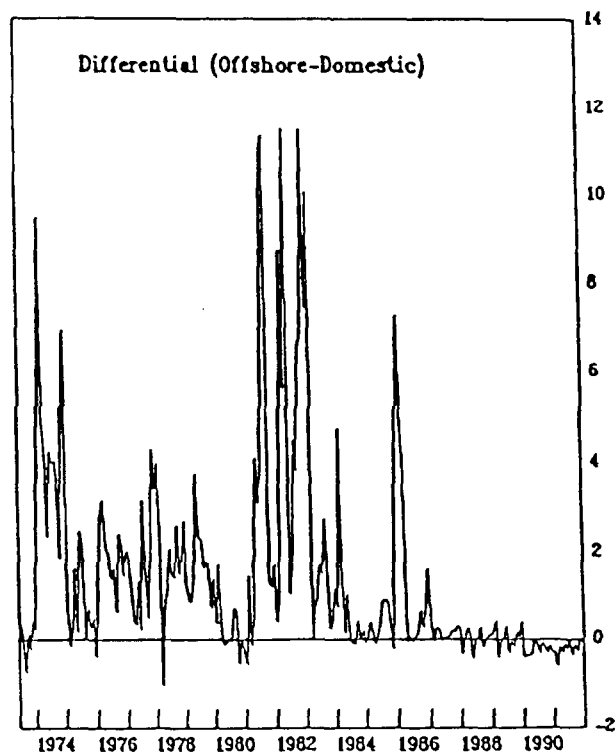
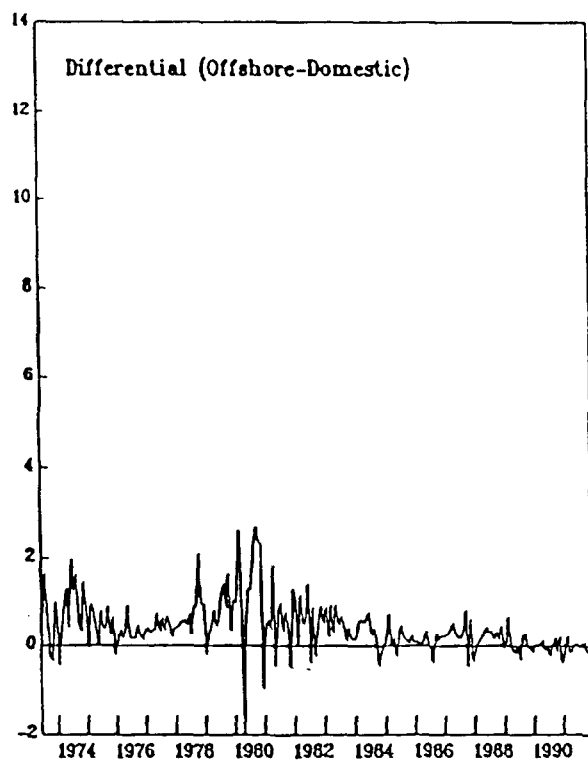
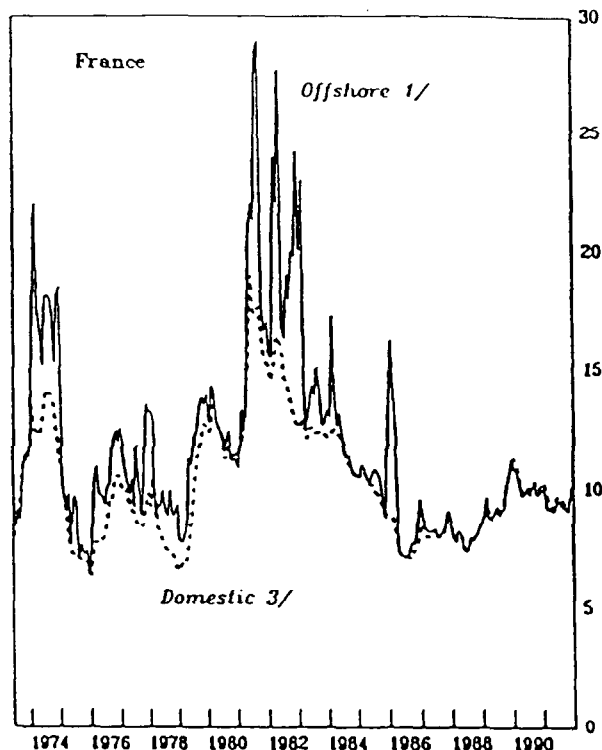
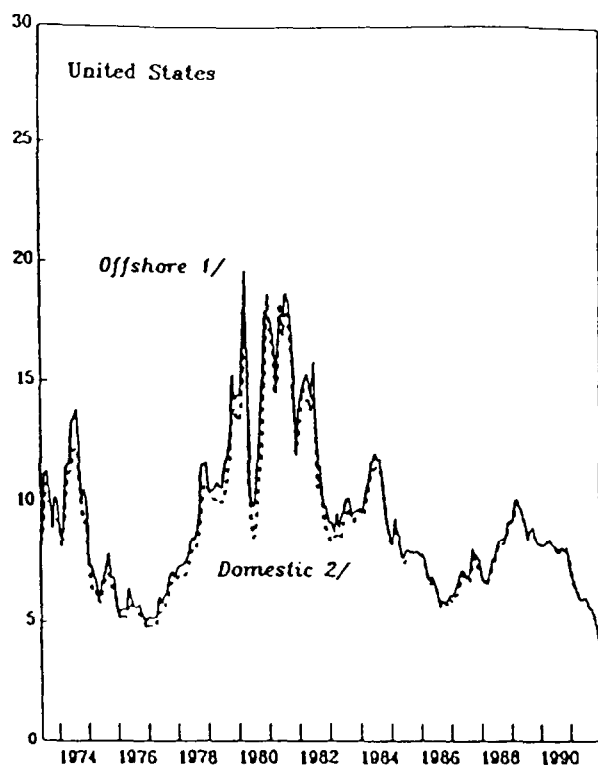
The degree of integration of international capital markets can often be better captured by rate of return differentials (appropriately defined) between the markets than by the scale of capital flows themselves. A high degree of integration can be present even without a large volume of capital flows. For example, trading of some benchmark U.S. Government securities often takes place simultaneously on markets both inside and outside the United States, and unanticipated events (such as an increase in the Federal Reserve's discount rate) trigger an immediate adjustment in the prices of these securities in the markets in all countries without any capital flows or even any transactions occurring.

Interest rate differentials suggest that the degree of integration of short-term markets increased markedly during the 1980s, especially for those countries removing capital controls. In Chart 1, for example, this growing integration is evident in the sharp reduction in the interest differential between the cost of interbank funds denominated in French francs in the domestic and offshore (Eurofranc) markets. Another measure of market integration is provided by covered interest rate differentials which are defined as the differences between the interest rates on instruments issued by comparable borrowers but denominated in different currencies, adjusted for the cost of cover in the forward exchange market (Chart 2). Recent empirical studies have concluded that the removal or weakening of capital controls has helped establish covered interest rate parity (which is achieved when the covered interest rate differential is zero). In contrast, deviations from uncovered interest rate parity, where the interest rate differential is adjusted for the expected rate of depreciation of the domestic currency rather than the cost of forward cover, appear to have remained more substantial, which could reflect a lack of integration, errors in measuring the expected rate of exchange rate depreciation, or a risk premium. Moreover, real interest rate differentials have remained large, for both short (Chart 3) and long-term instruments, when measured on an ex-post basis. These differentials suggest that the degree of integration of especially long-term markets still remains incomplete.

c. Dominant role of private flows in financing fiscal
and current account imbalances

Private capital flows provided most of the cross-country financing of fiscal and current account imbalances for the developing countries in the

Chart 1. Domestic and Offshore Interest Rates: United States and France,
June 1973-December 1991
(In percent)



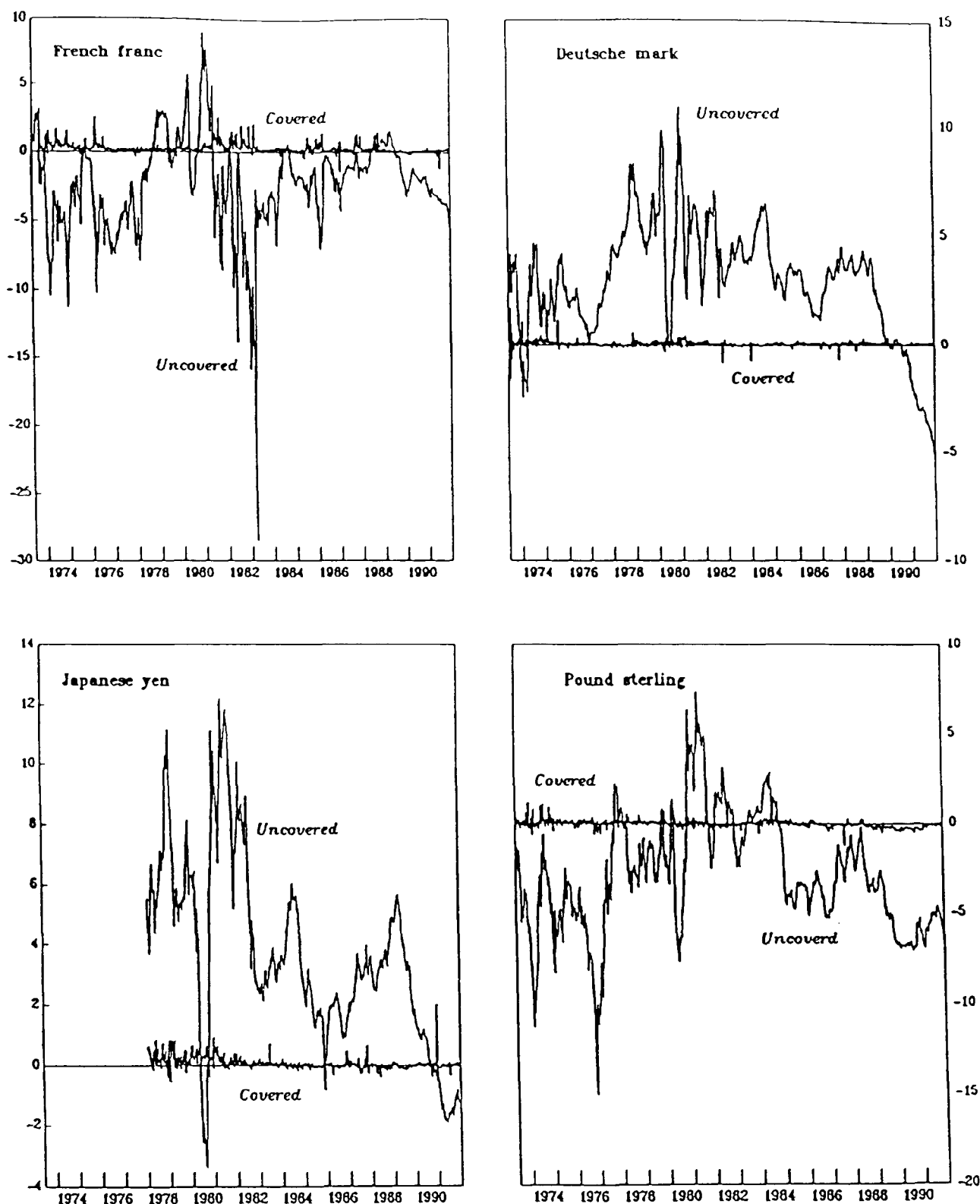
Source: Data Resources, Incorporated; Organization for Economic Cooperation and Development (OECD).

1/ Three-month Eurocurrency deposit bid rate.

2/ Rate on negotiable three-month certificates of deposit, secondary market.

3/ Three-month interbank loan rate (OECD).

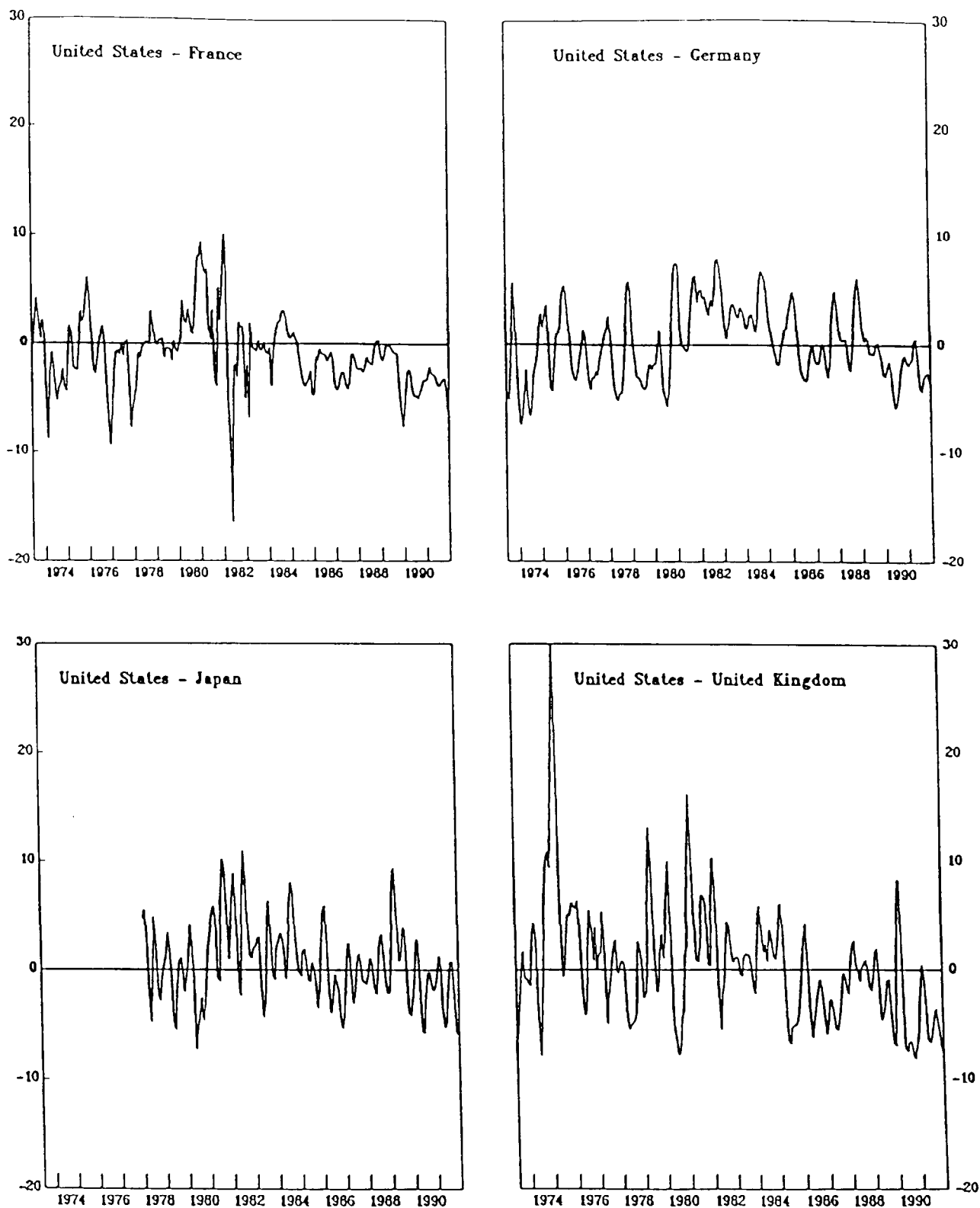
Chart 2. Covered and Uncovered Interest Rate Differentials: 1/
U.S. Dollar Versus Other Currencies



Source: Data Resources, Incorporated;

1/ The uncovered differential is the rate on three-month Eurocurrency U.S. dollar deposits minus the rate on three-month Eurocurrency deposits denominated in the specified currency. The covered differential is the uncovered differential minus the three-month forward exchange rate premium.

Chart 3. Real Interest Rate Differentials 1/
(in percent per annum)



Source: International Monetary Fund, International Financial Statistics; Data Resources, Incorporated.

1/ This differential equals the difference between the real rate of interest on instruments denominated in each currency. The real interest rate in each country is defined as the three-month Eurocurrency deposit rate adjusted for the inflation (as measured by the consumer price index) that occurred during the subsequent three months.

1970s and for the industrial countries in the 1970s and 1980s. Moreover, while banking flows were the dominant source of private financing to developing countries in the 1970s, flows of securities increasingly dominated private capital flows among industrial countries in the 1980s and 1990s.

In the 1970s, the financing of the current account imbalances of the non-oil developing countries (Tables 3 and 4) and the oil exporting developing countries (Tables 5 and 6) relied much more on indirect finance (through financial intermediaries) than direct finance (through securities markets or foreign direct investment) than in earlier periods. The large current account surpluses of the oil exporting developing countries initially led to the placement of funds in bank deposits and short-term government securities in industrial countries and offshore markets; only later was a large proportion of these funds invested in long-term securities and other less liquid assets. More than 80 percent of the current account deficits for the non-oil developing countries were financed by other net external borrowing which included borrowing from private creditors (mainly banks) and short-term official flows.

These inflows of private and official capital to developing countries were also accompanied by large scale capital flight. While the measurement of capital flight presents considerable conceptual and measurement problems, World Economic Outlook studies estimated the scale of capital flight from developing countries as \$165-200 billion in the period 1975-85. Since both net lending by foreign creditors to developing countries and capital flight increased sharply during the second half of the 1970s, the intermediation between domestic savings and investment in some

Table 3. Non-oil Developing Countries: External Financing, 1969-80.

(In billions of U.S. dollars)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Deficit on goods, services, and private transfers ¹	8.6	13.3	16.0	11.0	11.5	34.9	44.0	30.2	24.5	35.0	50.2	73.5
Non-debt-creating flows, net	4.6	5.4	6.8	6.6	9.8	14.0	11.9	12.2	14.2	15.9	21.1	21.0
Official transfers	2.4	2.5	3.0	3.4	5.3	8.5	7.4	7.2	8.2	8.0	10.9	11.7
Direct investment	2.1	2.3	2.7	2.8	4.3	4.8	5.0	4.6	5.3	6.4	8.6	8.4
SDR allocation, gold monetization, and valuation changes	0.1	0.7	1.2	0.4	0.2	0.7	-0.4	0.3	0.8	1.5	1.6	0.9
Asset transactions, net ²	-1.1	-0.6	-0.9	-2.7	-3.6	-2.3	-1.6	-4.3	-5.7	-4.3	-7.0	-7.7
Net errors and omissions ³	-0.9	0.3	0.6	0.2	-0.5	-1.2	-3.3	-5.0	-4.8	-8.7	-2.3	-8.9
Use of reserves	-3.0	-2.8	-3.5	-9.1	-10.9	-4.7	-1.9	-13.6	-14.4	-17.4	-12.1	-6.9
Net external borrowing	9.0	11.0	13.0	16.0	16.7	29.0	39.0	41.0	35.1	49.5	50.6	76.0
Reserve-related liabilities	-0.1	-0.4	0.2	0.2	0.2	1.6	2.6	4.0	0.8	1.8	1.1	4.1
Net credit from IMF ⁴	-0.1	-0.4	0.0	0.3	0.1	1.4	1.9	2.6	0.1	0.6	0.8	2.7
Liabilities constituting foreign authorities' reserves ⁵	0.0	0.0	0.2	-0.0	0.1	0.3	0.7	1.4	0.6	1.2	0.4	1.4
Long-term borrowing from official creditors, net ⁶	...	--	2.4	3.6	3.2	5.7	9.3	9.1	8.5	9.9	14.9	18.5
Other net external borrowing ⁷	...	11.4	10.3	12.2	13.3	21.7	27.1	27.9	25.9	37.8	34.5	53.4
Memorandum items:												
Net borrowing from commercial banks ⁸	...	...	...	...	...	...	...	...	...	...	...	...
Exceptional financing	-0.0	0.2	0.2	0.3	0.5	1.3	2.9	2.6	3.1	2.8	2.7	7.2
Of which,												
Arrears	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.5	1.8	0.9	0.4	-2.0
Reschedulings	0.0	0.0	0.1	0.4	0.3	0.6	0.3	0.0	0.0	0.5	1.6	6.5

Source: International Monetary Fund, World Economic Outlook, various issues.

Note: Except where otherwise footnoted, estimates shown here are based on national balance of payments statistics. These flows are not always easily reconcilable with year-to-year changes in either debtor- or creditor-reported debt statistics, in part because the latter are affected by changes in valuation.

¹Equivalent to current account deficit less official transfers. In this table, official transfers are treated as external financing.

²Pertains primarily to export credit.

³Positioned here on the presumption that estimates reflect primarily unrecorded capital outflows.

⁴Includes use of Fund credit under General Resource Account, Trust Fund structural adjustment facility, and enhanced structural adjustment facility. The impact of prospective programs is incorporated.

⁵Comprises short-term borrowing by monetary authorities from other monetary authorities.

⁶Estimates of net disbursements by official creditors (other than monetary authorities) derived from debt statistics. Official net disbursements include the increase in official claims caused by the transfer of officially guaranteed claims to the guarantor agency in the creditor country, usually in the context of debt reschedulings.

⁷Residually calculated. Except for discrepancies in coverage, amounts shown reflect net external borrowing from private creditors and short-term official flows (primarily interest arrears on official debt).

⁸Based on changes in cross-border bank claims reported in the Fund's International Banking Statistics, adjusted for valuation changes attributed to exchange rate movements. Excludes six offshore banking centers covered by the World Economic Outlook (The Bahamas, Bahrain, Hong Kong Netherlands Antilles, Panama, and Singapore).

Table 4. Non-oil Developing Countries: External Financing, 1981-91.

(In billions of U.S. dollars)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Deficit on goods, services, and private transfers ¹	98.2	81.3	50.2	36.9	40.2	31.7	8.9	17.2	30.1	41.5	48.8
Non-debt-creating flows, net	26.7	23.2	21.4	22.2	29.6	28.7	35.2	35.0	33.2	45.8	45.9
Official transfers	12.6	12.3	12.8	13.3	16.0	16.5	16.3	17.1	17.6	21.5	22.4
Direct investment	12.8	11.8	9.1	9.4	8.7	10.0	13.0	15.8	15.5	18.6	25.0
SDR allocation, gold monetization, and valuation changes	1.3	-0.8	-0.6	-0.5	4.9	2.3	5.9	2.1	0.1	5.8	-1.5
Asset transactions, net ²	-6.4	-5.5	-4.5	-4.2	-11.9	-7.8	-6.0	-17.0	-14.5	-14.0	1.0
Net errors and omissions ³	-15.3	-19.5	-10.8	-7.8	0.9	0.9	-1.4	-6.2	-1.8	-6.2	-3.8
Use of reserves	-6.1	2.8	-9.1	-15.3	-6.1	-25.1	-47.1	-8.6	-15.1	-40.7	-54.4
Net external borrowing	99.3	80.3	53.3	42.1	27.7	35.0	28.3	14.0	28.2	56.6	60.1
Reserve-related liabilities	6.1	10.0	6.4	3.8	1.4	-0.8	-4.8	-4.4	-2.6	-6.2	1.7
Net credit from IMF ⁴	5.8	5.8	9.7	4.2	0.7	-2.2	-5.3	-4.0	-3.1	-3.6	0.9
Liabilities constituting foreign authorities' reserves ⁵	0.3	4.1	-3.2	-0.4	0.7	1.4	0.6	-0.4	0.5	-2.6	0.8
Long-term borrowing from official creditors, net ⁶	27.3	29.4	32.9	32.7	17.7	26.3	21.7	16.3	23.7	41.4	17.3
Other net external borrowing ⁷	65.9	40.9	14.0	5.6	8.6	9.4	11.4	2.1	7.2	21.5	41.0
Memorandum items:											
Net borrowing from commercial banks ⁸	...	54.9	24.2	13.1	2.4	3.9	15.3	6.0	2.6	28.5	23.8
Exceptional financing	5.8	12.9	23.2	19.4	27.2	28.1	40.4	32.5	33.6	50.9	24.5
Of which,											
Arrears	1.0	5.9	4.5	3.0	1.2	5.7	6.6	7.0	13.7	17.4	-10.0
Reschedulings	2.3	2.1	16.1	14.3	18.1	20.2	33.5	24.2	17.9	17.4	31.4

Sources: International Monetary Fund, World Economic Outlook, various issues.

Note: Except where otherwise footnoted, estimates shown here are based on national balance of payments statistics. These flows are not always easily reconcilable with year-to-year changes in either debtor- or creditor-reported debt statistics, in part because the latter are affected by changes in valuation.

¹Equivalent to current account deficit less official transfers. In this table, official transfers are treated as external financing.

²Pertains primarily to export credit.

³Positioned here on the presumption that estimates reflect primarily unrecorded capital outflows.

⁴Includes use of Fund credit under General Resource Account, Trust Fund structural adjustment facility, and enhanced structural adjustment facility. The impact of prospective programs is incorporated.

⁵Comprises short-term borrowing by monetary authorities from other monetary authorities.

⁶Estimates of net disbursements by official creditors (other than monetary authorities) derived from debt statistics. Official net disbursements include the increase in official claims caused by the transfer of officially guaranteed claims to the guarantor agency in the creditor country, usually in the context of debt reschedulings.

⁷Residually calculated. Except for discrepancies in coverage, amounts shown reflect net external borrowing from private creditors and short-term official flows (primarily interest arrears on official debt).

⁸Based on changes in cross-border bank claims reported in the Fund's International Banking Statistics, adjusted for valuation changes attributed to exchange rate movements. Excludes six offshore banking centers covered by the World Economic Outlook (The Bahamas, Bahrain, Hong Kong Netherlands Antilles, Panama, and Singapore).

Table 5. Oil Exporting Developing Countries: External Financing, 1969-80.

(In billions of U.S. dollars)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Deficit on goods, services, and private transfers ¹	1.0	0.2	-2.6	-3.4	-9.0	-70.7	-43.2	-38.8	-27.6	-6.2	-66.5	-110.2
Non-debt-creating flows, net	0.6	0.6	1.0	-0.7	-0.6	-16.1	-2.8	-6.3	-4.0	-5.6	-5.1	-11.2
Official transfers	-0.1	-0.0	0.1	-0.1	-0.7	-2.1	-4.3	-3.6	-4.2	-5.8	-5.9	-7.4
Direct investment	0.6	0.5	0.5	-0.5	0.1	-6.3	1.2	-2.6	-0.6	0.5	-0.4	-4.7
SDR allocation, gold monetization, and valuation changes	0.1	0.1	0.4	-0.2	-0.0	-7.6	0.3	-0.1	0.8	-0.3	1.1	1.0
Asset transactions, net ²	0.0	-0.3	-0.3	-1.9	-3.3	-23.0	-17.9	-26.9	-19.5	-15.0	-37.8	-70.3
Net errors and omissions ³	-0.1	-0.1	-0.2	0.3	-2.4	1.8	-4.6	0.1	-3.8	-2.1	-7.7	-1.5
Use of reserves	0.4	-0.1	-3.0	-2.7	-4.4	-38.0	-9.1	-9.9	-11.5	3.4	-27.1	-30.1
Net external borrowing	0.1	0.2	-0.0	1.6	1.7	4.5	-8.8	4.2	11.1	13.0	11.2	2.9
Reserve-related liabilities	0.1	0.1	0.1	-0.3	-0.0	0.1	-0.2	--	0.0	-0.1	0.0	-0.2
Net credit from IMF ⁴	0.0	0.0	-0.0	-0.0	-0.1	-0.0	--	--	0.0	0.0	0.0	0.0
Liabilities constituting foreign authorities' reserves ⁵	0.0	0.1	0.1	-0.3	0.1	0.1	-0.2	--	0.0	-0.1	--	-0.2
Long-term borrowing from official creditors, net ⁶	...	--	0.9	0.6	0.9	0.4	0.8	1.6	2.4	4.2	1.3	1.7
Other net external borrowing ⁷	...	0.0	-1.0	1.4	0.8	4.0	-9.4	2.6	8.7	8.9	9.8	1.3
Memorandum items:												
Net borrowing from commercial banks ⁸	...	...	...	1.0	1.9	-0.9	2.2	7.7	6.6	18.2	14.5	11.0
Exceptional financing	--	--	--	--	--	--	1.2	0.3	--	--	--	--
Of which,	--	--	--	--	--	--	--	--	--	--	--	--
Arrears	--	--	--	--	--	--	--	--	--	--	--	--
Reschedulings	--	--	--	--	--	--	--	--	--	--	--	--

Source: International Monetary Fund, World Economic Outlook, various issues.

Note: Except where otherwise footnoted, estimates shown here are based on national balance of payments statistics. These flows are not always easily reconcilable with year-to-year changes in either debtor- or creditor-reported debt statistics, in part because the latter are affected by changes in valuation.

¹Equivalent to current account deficit less official transfers. In this table, official transfers are treated as external financing.

²Pertains primarily to export credit.

³Positioned here on the presumption that estimates reflect primarily unrecorded capital outflows.

⁴Includes use of Fund credit under General Resource Account, Trust Fund structural adjustment facility, and enhanced structural adjustment facility. The impact of prospective programs is incorporated.

⁵Comprises short-term borrowing by monetary authorities from other monetary authorities.

⁶Estimates of net disbursements by official creditors (other than monetary authorities) derived from debt statistics. Official net disbursements include the increase in official claims caused by the transfer of officially guaranteed claims to the guarantor agency in the creditor country, usually in the context of debt reschedulings.

⁷Residually calculated. Except for discrepancies in coverage, amounts shown reflect net external borrowing from private creditors and short-term official flows (primarily interest arrears on official debt).

⁸Based on changes in cross-border bank claims reported in the Fund's International Banking Statistics, adjusted for valuation changes attributed to exchange rate movements. Excludes six offshore banking centers covered by the World Economic Outlook (The Bahamas, Bahrain, Hong Kong, Netherlands Antilles, Panama, and Singapore).

Table 6. Oil Exporting Developing Countries: External Financing, 1981-91.

(In billions of U.S. dollars)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Deficit on goods, services, and private transfers ¹	-54.9	5.0	16.8	5.6	-0.8	30.1	12.3	21.9	2.3	-16.5	25.7
Non-debt-creating flows, net	-5.0	2.3	-3.7	-1.6	0.5	-1.6	3.0	-1.6	0.7	-8.1	-19.6
Official transfers	-6.4	-5.0	-4.9	-4.4	-3.2	-2.8	-0.5	-1.9	-1.2	-10.6	-26.1
Direct investment	4.9	8.1	4.3	4.4	1.5	0.6	1.3	0.5	2.7	2.2	6.4
SDR allocation, gold monetization, and valuation changes	-3.5	-0.8	-3.1	-1.7	2.2	0.5	2.1	-0.2	-0.8	0.3	0.1
Asset transactions, net ²	-64.1	-39.7	1.6	-4.5	1.4	-4.8	4.3	-2.5	-1.8	-9.8	31.0
Net errors and omissions ³	-7.8	-6.1	4.4	9.1	7.8	3.1	5.6	5.6	8.1	7.4	-0.9
Use of reserves	10.9	34.6	5.7	4.5	-6.4	17.8	-4.7	13.1	-7.9	-11.0	-0.8
Net external borrowing	11.0	13.9	8.8	-1.9	-4.0	15.8	4.2	7.3	3.2	5.0	16.0
Reserve-related liabilities	-0.1	-0.1	0.7	-0.1	-0.6	0.0	0.8	0.8	1.6	1.8	-0.5
Net credit from IMF ⁴	0.0	0.0	0.5	-0.0	-0.4	0.0	0.6	-0.1	1.6	1.7	0.2
Liabilities constituting foreign authorities' reserves ⁵	-0.1	-0.1	0.2	-0.1	-0.2	0.0	0.2	0.8	0.0	0.1	-0.7
Long-term borrowing from official creditors, net ⁶	2.4	6.3	3.3	2.9	7.8	5.7	8.9	5.1	7.9	11.8	10.7
Other net external borrowing ⁷	8.8	7.7	4.8	-4.7	-11.2	10.0	-5.4	1.4	-6.3	-8.6	5.8
Memorandum items:											
Net borrowing from commercial banks ⁸	8.7	9.8	5.4	-2.5	0.3	0.9	1.4	1.8	0.4	10.6	6.9
Exceptional financing	--	3.4	8.0	1.2	1.6	8.4	3.7	4.3	3.3	2.6	2.5
Of which,											
Arrears	--	3.4	6.1	0.9	-1.7	-0.9	-4.8	3.3	-4.9	0.8	-1.0
Reschedulings	--	--	1.9	0.3	3.3	1.0	8.5	1.0	7.7	2.3	3.3

Source: International Monetary Fund, World Economic Outlook, various issues.

Note: Except where otherwise footnoted, estimates shown here are based on national balance of payments statistics. These flows are not always easily reconcilable with year-to-year changes in either debtor- or creditor-reported debt statistics, in part because the latter are affected by changes in valuation.

¹Equivalent to current account deficit less official transfers. In this table, official transfers are treated as external financing.

²Pertains primarily to export credit.

³Positioned here on the presumption that estimates reflect primarily unrecorded capital outflows.

⁴Includes use of Fund credit under General Resource Account, Trust Fund structural adjustment facility, and enhanced structural adjustment facility. The impact of prospective programs is incorporated.

⁵Comprises short-term borrowing by monetary authorities from other monetary authorities.

⁶Estimates of net disbursements by official creditors (other than monetary authorities) derived from debt statistics. Official net disbursements include the increase in official claims caused by the transfer of officially guaranteed claims to the guarantor agency in the creditor country, usually in the context of debt reschedulings.

⁷Residually calculated. Except for discrepancies in coverage, amounts shown reflect net external borrowing from private creditors and short-term official flows (primarily interest arrears on official debt).

⁸Based on changes in cross-border bank claims reported in the Fund's International Banking Statistics, adjusted for valuation changes attributed to exchange rate movements. Excludes six offshore banking centers covered by the World Economic Outlook (The Bahamas, Bahrain, Hong Kong, Netherlands Antilles, Panama, and Singapore).

developing countries was essentially internationalized; a portion of domestic savings was placed offshore, and this portion was offset by increased bank claims on national governments and private corporations. With the onset of debt-servicing difficulties for many developing countries in the 1980s, this intermediation process stopped as voluntary private sector lending to many heavily indebted developing countries ceased.

During the 1970s and 1980s, fiscal and current account imbalances in the industrial countries were financed by large scale private capital flows. As already noted, large fiscal deficits were financed primarily through bond issuance. Moreover, between 1983 and 1988, when the United States ran a cumulative current account deficit of \$664 billion, inflows of portfolio investment, other private short-term capital, and net foreign direct investment financed about 75 percent of the external deficit. Over the same period, Germany and Japan had cumulative current account surpluses of \$165 billion and \$397 billion, respectively. While cumulative net foreign direct investment abroad was equivalent to about 22 percent of the cumulative current account surplus for both of these countries in this period, cumulative net portfolio investment abroad amounted to \$314 billion for Japan (88 percent of its cumulative current account surplus) versus \$16 billion for Germany (10 percent of its cumulative current account surplus).

d. Growing importance of institutional investors

in cross-border securities transactions

A fourth trend has been the growing importance of institutional investors in cross-border capital flows, especially in securities transactions. In the early 1970s, large institutional investors, such as pension funds, insurance companies, and mutual funds, played only a limited

role in cross-border capital flows due to both official restrictions and the high costs of acquiring and managing a diversified international portfolio. In some industrial countries, capital controls and domestic prudential regulations limited the proportion of institutional investors' total assets that could be held as foreign assets. In addition, the gains from acquiring an internationally diversified portfolio were diminished by the costs of obtaining information on borrowers in different markets operating under different reporting requirements, accounting standards, and legal arrangements. Even when such informational problems could be overcome, relatively inefficient linkages between national clearance, settlement, and payments systems raised the costs of international transactions.

In the 1980s, however, the role of institutional investors in channeling funds between savers and investors increased, both in their domestic markets and across national borders. At the end of September 1992, for example, open-end equity, bond, and money market mutual funds were estimated to have total assets of \$2.9 trillion. Moreover, as already noted, the 300 largest private pension funds have about \$2 trillion of assets. During the period from 1980 to 1990, pension fund holdings of assets rose from 25 to 35 percent of GDP in the United States and from 23 to 55 percent in the United Kingdom. The growing importance of institutional investors reflected the transactions (commission) cost advantages enjoyed by institutional investors over individual investors, the increased willingness of individual savers to allow their portfolios to be managed by agents, and, in some countries, the tax advantages enjoyed by contractual savings plans. Increased holding of foreign assets by institutional investors were stimulated by the general removal of capital controls as well as by the

relaxation of the restrictions on the share of their portfolios that could be invested in foreign assets. In addition, greater harmonization of accounting standards and disclosure requirements, as well as increased global role for credit rating agencies, improved information on the creditworthiness of different types of international borrowers. Moreover, improvements in cross-border clearance and settlement systems reduced both the costs and uncertainties associated with international securities transactions.

Despite the growing importance of institutional investors in cross-border flows, it has already been noted that the 300 largest private pension funds currently invest only 7 percent of their total funds (about \$2 billion) in foreign assets. However, this proportion is expected to continue to rise during the 1990s. Within the European Community (EC), equity and bond mutual funds already hold a higher proportion of their total assets in cross-border securities. At the end of September 1992, for example, open-end equity mutual funds based in the EC held 38 percent of their assets in foreign equities; whereas open-end bond mutual funds held 18 percent of their assets in foreign bonds. Although activities of institutional investors have increased the scale of capital flows, their influence on the volatility of these flows is unclear. While institutional investors tend to hold an investment position for the longer term, they have demonstrated the ability to undertake large portfolio shifts when economic fundamentals change or when there are increased uncertainties about the authorities exchange rate commitments.

2. Determinants of capital flows

Over the past two decades, net and gross capital flows have responded to technological changes, economic fundamentals, official policies, and market distortions. Domestic and international financial markets channel resources from surplus units--households, firms, or governments--that spend less than their revenues, or save, to deficit units--that are spending more than their revenues. Such financial transactions can help overcome the limitations imposed by self-finance; and, if asset prices appropriately reflect the inherent returns and risks associated with holding that asset, savings can be directed to its most productive investments. In an international context, these transactions give rise to net international capital flows that are the financial counterpart to a real transfer of resources through a trade or current account imbalance, which occurs only when savings and investment are unbalanced across countries.

However, channeling resources from surplus to deficit units is not the only function of financial markets; and gross capital flows between countries, which may be mutually offsetting, can be important in improving the liquidity of a portfolio and in diversifying risks. Gross capital flows need not correspond to a transfer of real resources across countries.

a. Technological advances

It would have been difficult to envision that the scale of net and gross international capital flows that occurred in the 1980s and early 1990s would have taken place without the major advances which occurred in telecommunication and computer technologies. By sharply reducing the cost of transmitting and processing information, these new technologies greatly

facilitated the management of global portfolios, the search for arbitrage profits, and the pricing of new, complex financial instruments. Such technological advances also made possible a move toward shorter settlement periods, which helped reduce counterparty risk in international and domestic financial transactions. In addition, these new technologies often created new channels for cross-border financial transactions that thereby reduced the effectiveness of existing capital controls.

b. Economic fundamentals

Economic fundamentals including the global investment opportunities available, the co-variances between the expected returns on various instruments, the growth of wealth in different countries, and differences across economic agents in their willingness to assume risks and in rates of time preference have played key roles in stimulating net and gross capital flows. One problem in attempting to measure empirically the relative influence of these fundamental factors on capital flows is that international capital markets can respond to a shock in one country either through capital flows or through changes in the prices of the country's financial claims, or through some combination of capital flows and asset price changes. This trade-off between asset prices changes and capital flows helps explain why most studies have had difficulties in obtaining stable empirical relationships between measures of gross and net capital flows and the fundamental determinants of capital flows. As a result, most econometric models now incorporate financial linkages across countries in terms of interest rate parity relationships that link domestic interest rates through arbitrage to foreign interest rates and to anticipated exchange rate movements.

c. Official policies

Official policies that have had important effects on international capital flows included capital controls; limitations on the entry of foreign firms into domestic markets; restrictions on the domestic activities, products, locations, and interest rates charged by financial institutions; tax policies; and monetary and fiscal policies. While capital controls were seldom designed to completely eliminate all capital flows, they made international transactions more costly and eliminated certain types of flows. As these controls were removed in the industrial countries, there was increased arbitrage activity between domestic and offshore markets, new competitive pressures as foreign financial institutions entered major domestic markets, and sharp increases in capital flows as domestic and foreign residents sought to diversify their portfolios.

In the 1970s and early 1980s, restrictions on the domestic activities, interest rates, products, and location of financial institutions often stimulated activity in offshore markets as financial institutions provided restricted financial services to domestic enterprises through offshore subsidiaries. However, the gradual removal of many of these restrictions in the 1980s as part of extensive financial liberalizations played a key role in restoring the competitive positions of many major domestic markets.

Taxation has also affected the pattern and scale of capital flows. Holdings of foreign assets sometimes allowed domestic residents to avoid (or evade) taxation. Divergent tax withholding rates at times caused capital flows into countries or offshore markets where tax is not withheld. Turnover taxes on securities also tended to shift transactions to other countries or offshore markets.

Since most financial claims are denominated in national currencies, domestic monetary policies, exchange rate changes, and inflation can alter the expected relative returns on assets denominated in different currencies and thereby influence decisions regarding where and in what currencies wealth will be held. The perception that the monetary policies of the major industrial countries were at times pursuing conflicting or inconsistent objectives led to sharp changes on exchange rates and other asset prices, as well as to capital flows.

As already noted, the large fiscal imbalances in industrial countries were often financed in part by large scale capital flows. Capital inflows could provide a short-term substitute for the interest rate increases and the resulting private sector adjustments that at times accompanied rising fiscal imbalances.

d. Market imperfections

Since there are often significant transactions costs associated with carrying out transactions in financial assets, these costs help explain why many individuals fail to hold internationally diversified portfolios, the standardization of financial assets, the existence of financial centers in which trading activity is concentrated, and the establishment of specialized financial institutions. In addition, these costs indicated why much of the international diversification of portfolios in the 1980s was carried out by large institutional investors.

Obtaining the information needed to evaluate and to monitor a borrower's investment activities can also be quite costly; and financial market participants are often faced with asymmetrical information, a problem that can be made more serious as a result of different national systems for

accounting standards, disclosure requirements, and the commercial codes governing the enforcement of contracts. While banks traditionally had a cost advantage in gathering information and monitoring of the activities of borrowers, especially in cross-lender transactions, the development of new computer and telecommunication technologies, the expanded global role of credit rating agencies, the increased importance of institutional investors and improved disclosure of corporate financial information have combined to erode the informational advantages of commercial banks.

Since savers and investors seldom deal with each other directly, especially in cross-border transactions, competitive financial arrangements work well only if they ensure that the savers' agents act in the interest of savers (the principals). While complex institutional and supervisory frameworks have evolved in most countries to meet this requirement, the extension of this protection to international transactions has raised intricate legal, regulatory, and supervisory issues. While progress was made during the 1980s in the international coordination of legal codes governing international capital flows and of the supervision of bank branches and subsidiaries and foreign branches of securities houses, many legal, accounting, and disclosure requirements (as well as taxes) have not been harmonized. Such differences make it difficult for savers to compare the performance of different agents and can create incentives for "regulatory arbitrage"--the shifting of financial activities to locations with least comprehensive supervision, or the lowest taxes.

3. Systemic consequences

While it is widely recognized that the closer integration of major domestic and offshore financial markets has yielded important efficiency

benefits by reducing the cost and increasing the availability of credit for many borrowers, there have been concerns that structural changes in international capital markets could subject the world economy to new systemic strains. In part, these concerns reflect the experience with increased asset price variability, the speed with which major financial shocks have been transmitted across global markets, and the rapid accumulation of debts by some borrowers. In addition, these structural changes have created new uncertainties about the financial linkages between countries and the environment in which monetary and fiscal policies must be implemented.

a. Monetary and fiscal policy effectiveness

As financial liberalizations have taken place and the linkages between major domestic and offshore markets have increased, financial innovation and the availability of credit from offshore markets have forced the monetary authorities to move away from quantitative restrictions on domestic lending toward instruments that operate more through "market prices" such as exchange rates and interest rates. During the 1950s and 1960s, financial institutions and regulatory structures in each of the major industrial countries evolved in relative isolation from external development, especially in countries with extensive capital and exchange controls (such as France, Japan, and the United Kingdom). These diverse structures led the monetary authorities to employ different operational techniques, with some authorities (such as in France) relying on direct controls on credit expansion and other authorities (such as in the United States) using indirect money market instruments (such as open market operations). In addition, domestic financial regulations often influenced the channels by

which monetary policy influenced economic activity. Even where direct credit controls were not employed, liquidity and credit constraints were often key elements in transmitting monetary policy effects. A rise in market interest rates relative to regulated interest rates on deposits could often induce credit rationing by regulated institutions to certain sectors of the economy (such as housing investment) that had few alternative sources of credit.

During the 1970s and 1980s, institutional structures and monetary policy operating procedures were forced to adapt to greater macro-economic instability, to the need to finance large fiscal and current account imbalances, and to the expansion of offshore markets. Offshore markets, in particular provided market participants with "safety valve" sources of credit (whenever domestic credit condition tightened) and with alternatives for the placement of funds that offered market-related rates of return.

To allow institutional structures to adjust to these new conditions, the authorities in the major industrial removed or relaxed capital controls and eliminated a variety of restrictions on domestic financial market activities, instruments, and interest rates. This process generally weakened the predictability of the relationship between the authorities operating instruments, monetary aggregates, and nominal income; reduced the effect of a change in the level of interest rates on the substitution between money and nonmonetary assets; and implied that monetary policy increasingly worked through changes in interest rates and exchange rates rather than through liquidity or credit constraints.

Difficulties with monetary targeting and direct credit controls led the authorities in a number of industrial countries toward a more "eclectic"

approach to monetary policy. While this approach continued to involve the announcement of targets for monetary aggregates, a broader range of indicators of monetary conditions was also monitored. The focus was mainly on nominal variables (such as nominal spending).

The scope for such an eclectic, independent monetary policy was naturally influenced by the country's exchange rate arrangements. While an increase in the degree of capital mobility affected the channels by which monetary policy was transmitted under any exchange rate regime, the loss of monetary policy effectiveness was typically greatest with a fixed exchange rate. With a high degree of capital mobility and a fixed exchange rate, any elements of monetary independence would have to reflect the existence of a subset of domestic borrowers and intermediaries that have only limited ties to international markets. This could allow the authorities to influence the cost and availability of credit from local intermediaries through the use of reserve requirements, credit ceilings, direct credit surveillance, or through deposit interest rate ceilings. However, such controls can create strong incentives, even for smaller firms, to develop linkages with external financial institutions.

During the 1970s and 1980s, the fiscal authorities in the major industrial countries used a variety of financial instruments to attract new domestic and foreign creditors and to add flexibility to their debt management operations. In some countries, these innovations reflected to need to attract funding for historically large fiscal deficits. The increased availability of external funding for financing fiscal imbalances raised the issue of whether "fiscal discipline" had been weakened. One answer was that private markets would impose discipline progressively on

errant borrowers by first charging a widening interest rate differential and then, only if this warning was ignored, by excluding the borrower from the market. But if market discipline is to operate in such a progressive manner, the following four conditions needed to be satisfied: (1) there must not be any explicit or implicit guarantee of a bailout by the central or regional authorities; (2) there must not be a "monetization" of a private or semi-official borrower's debts by central bank purchases of these debts; (3) market participants must be fully aware of the debtor's obligations so that an accurate assessment can be made of its debt-servicing obligations and capacity; and (4) the financial system must be strong enough that no single borrower is regarded as "too large to fail". Experience suggest that these conditions have often not been fulfilled. Many borrowers are viewed as carrying implicit or explicit guarantees either from some government entity or, if government units, from the central government or regional government bodies. The perception that some financial institutions are too large to fail is hard to dispel, short of actually allowing some large institutions to fail. Moreover, it could prove difficult to establish credibility that large sovereign borrowers would not be assisted if the failure to rescue could lead to fragmentation of regional institutions in which members have already invested high political stakes.

b. Coordination of financial and macroeconomic policies

The growing integration of international capital markets has also increased the incentives and pressures for greater coordination of financial and macroeconomic policies as a result of greater macroeconomic interdependence and the growing importance of safeguarding the soundness of financial systems and payments mechanisms. Since financial institutions are

now relatively free to relocate their activities, differences in regulatory and tax policies can induce a shift of activities from one market to another. This has led to a coordinated and uniform approach to bank capital adequacy requirements across the Group of Ten countries. Efforts are also under way to develop more uniform capital adequacy standards for securities houses, disclosure requirements, accounting standards, and the legal codes governing financial transactions.

As noted earlier, spillover effects from domestic macroeconomic policies have also increased as the linkages between major financial markets have expanded. Monetary policy effects are increasingly transmitted through interest rates and exchange rates, which are at the cutting edge of the short-term linkages between countries. In addition, since foreign savers have played an increasingly important role in the financing of fiscal deficits, reduced savings in one country could have a major impact on the financing of fiscal imbalances in other countries.

Given the speed with which major financial markets shocks can now spread across global markets (as in the equity market crash of October 1987), the case for coordinated crisis management policies, especially among central banks, seems also to have been strengthened. Since the global markets for key government securities and foreign exchange operate on a 24-hour basis, emergency liquidity support during a major financial crisis may need to be coordinated to provide both continuing market support and the appropriate amount of different currencies.

c. Stability and contagion in international financial markets

As already noted, international capital flows will yield an efficient reallocation of savings across countries only if global capital markets

generate prices that appropriately reflect the underlying risks and returns associated with holding financial claims. While financial liberalizations have increased financial market efficiency, there have been concerns that they have also increased financial instability, asset price volatility, and introduced new risks--some of a systemic nature--that make the pricing of financial instruments more difficult and can contribute to abrupt changes in the availability of credit.

The authorities in the major industrial countries have had to confront a number of financial crises during the past two decades that have had an international as well as national dimension. These disturbances shared certain common features. Several were preceded by the introduction of a new financial instrument or by a sharp increase in debt; and lenders accepted a concentration of risks and charged interest rates that, ex post, did not reflect underlying risks. This was particularly evident in the growth of interbank positions prior to 1974, the expansion of developing country debt prior to 1982, the accumulation of high risk real estate loans in Japan, the United Kingdom and the United States in the 1980s, and the highly concentrated lending of Canadian regional banks to the agricultural and energy sectors in the early 1980s. Some crises were also preceded by major, often unanticipated, changes in macroeconomic conditions or policies. Finally, the emergence of a major crisis has typically resulted in sharp increases in the risk premiums charged to certain classes of borrowers and in more restrictive credit rationing. The collapse of Bankhaus Herstatt in June 1974 was such a case, where there a "tiering" of interest rates charged for interbank borrowing, with some large Italian and Japanese banks paying premiums as high as 200 basis points.

These crises suggest that a disturbance in markets for securities or foreign exchange would be most likely to threaten systemic stability if it fundamentally disrupted major national and international payments, settlement, and clearance systems. The global equity markets crash of October 1987 illustrated all too well that the systems for execution of orders, for dissemination of trading information, for clearance and settlement of securities, and for payments of funds can be severely strained during a crisis.

In addition to efforts to improve the discipline and consistency of macroeconomic policies through surveillance and policy coordination, official measures to limit contagion and to reduce systemic risks in international financial markets have focused on (1) strengthening the structures of major financial institutions and payments, clearance, and settlement systems so that they can better withstand financial crises; and (2) developing improved techniques for crisis management. Efforts have been made in both the private and official sectors to improve the ability of financial institutions and market structures to withstand the effects of financial shocks. New capital adequacy standards for international banks, which come into effect fully at the end of 1992, specify the minimum amount of bank capital for such banks in relation to the credit risks that they incur in their on- and off-balance sheet activities. Capital adequacy standards for securities houses are also being discussed by the International Organization of Securities commissions (IOSCO).

Another area of institution strengthening involves efforts by major securities exchanges to increase the computer capacity of their trading systems and to improve their telecommunications systems. Limits on daily

price movements have also been employed to give investors time to evaluate the fundamentals and therefore to avoid contagion effects. However, uncoordinated trading halts, whether within a country or across borders, may generate cross-market selling pressures as portfolio managers excluded from using one market shift their selling to other markets that remain open.

A principal reason why the major international financial crises of the 1970s and 1980s had only a modest short-run impact on real economic activity in the industrial countries is that they did not extensively disrupt major national and international clearance, settlement, and payment systems. During the past two decades, however, the growing integration of major financial markets has sharply increased the volume of transactions both within and across these systems. As a result, there is a legitimate concern whether existing institutional arrangements can cope efficiently with the new volume of transactions and manage effectively the risks created by counterparty failure and liquidity crises.

In response, the authorities and private institutions in the clearinghouses have taken steps to limit the risks they face by requiring higher-quality and larger amounts of collateral from members, by shortening the settlement period by moving toward delivery versus payments (DVP) methods, by placing limits on "daylight" overdrafts in payments systems, and by making more intensive use of netting arrangements to reduce the volume of transactions. The members of clearing-houses have also clarified the legal arrangements governing the sharing of losses arising from a payments or settlement failure.

Authorities have also sought to contain the spread of major financial crises through a "safety net" encompassing the provision of emergency

liquidity assistance by central banks, intervention to assist particular institutions, and the establishment of official or private deposit insurance arrangements. As with other types of insurance, however, a potentially serious "moral hazard" arises if the official safety net induces the managers of some financial institutions, especially those close to insolvency, to undertake an unduly large share of potentially high-return but also high-risk activities; this can occur if managers perceive that, with good outcomes, they will earn high profits for shareholders, but, with bad outcomes, the losses will be absorbed by the taxpayer. Such a risk-taking bias could lead to significant future public sector liabilities, as the savings and loan institutions crisis in the United States so vividly illustrated. Deposit insurance systems have therefore taken steps appropriately to limit their risk exposure by restricting the extent of their coverage of deposits, by enhancing supervision of the activities of insured institutions, by developing procedures for more rapid closing of insolvent institutions, and by relating insurance premiums more closely to the riskiness of the institutions' portfolios.

d. Role of official capital flows

As noted above, official capital flows have at times been a major component of total capital flows--both to indebted developing countries and between industrial countries during periods of foreign exchange market instability. While some official flows (such as military assistance) have been motivated by noneconomic considerations, others have reflected attempts either to alter the redistribution of global savings and investment produced by private capital flows or to influence the asset prices (especially exchange rates) produced by financial markets.

be imposed on a global basis. If implemented in only a few markets, activity could quickly shift to other markets.

Official transfers and credits from industrial to developing countries encompass a broad range of economic, humanitarian, and military assistance. The terms and conditions under which these official credits are made available vary considerably. Some development credits are supplied on concessionary terms for long periods; other official flows represent short- and medium-term credits that are subject to conditionality and carry market-related interest rates. Despite the heterogeneous nature of the terms and conditions of these loans, their availability helped cushion the sharply reduced access to private international financial markets experienced by many indebted developing countries in 1982. Since the experience of the 1980s suggests that re-establishing creditworthiness can be a lengthy process--even for countries undertaking strong adjustment measures--official credits are likely to play an important role during the 1990s as well.

4. International capital flows and developing countries

Developing countries should be major beneficiaries of an international system that efficiently transfer resources from relatively capital-abundant to relatively capital-scarce regions. However, the 1970s and 1980s have provided only mixed evidence of a smooth transfer of resources. Some developing countries that have consistently implemented sound policies have maintained or achieved good access to international financial markets, and still others have even been net creditors to these markets. At the same time, ten years after the emergence of the debt crisis, many indebted developing countries still have very limited access to spontaneous credits

from international financial markets. As a result, official transfers and long-term credits, rather than private financial flows, have become the primary source of financing for this latter group's current account deficit.

Experience since 1982 has demonstrated that creditworthiness considerations play a dominant role in determining both the cost and availability of credit from international markets. While there is considerable debate about how well the markets evaluate the willingness and ability of borrowers to service their debt obligations, it is clear that the perception that a borrower's creditworthiness has deteriorated, or is about to deteriorate, can lead to an abrupt curtailment of funding that may be difficult to reverse even in the medium term.

One key issue is whether perceptions of creditworthiness are subject to "contagion effects" in the sense that an otherwise creditworthy country's access to international credits is curtailed because other countries at a similar stage of development or with a similar external debt position are experiencing external payments difficulties. Even in the industrial countries, it is evident that debt-servicing difficulties for a particular institution lead to a close scrutiny of similar institutions. The experience with financial crises suggests that contagion can occur both when information about a borrower's current financial position is lacking and when the adverse economic news is such that all similar borrowers are viewed as equally likely to be affected. Both of these factors were evident during the early stages of the debt crisis in 1982.

The extent to which developing countries could benefit from a more integrated international financial system would depend largely on perceptions of creditworthiness, on how adept developing countries become in

utilizing financial instruments and markets most suitable to their needs, on how successful developing country policy reforms are in both attracting greater private inflows and stemming capital flight, and whether external resources are put to productive uses.

5. Measurement of international capital flows

The preceding analysis of international capital flows in the period since the 1970s implicitly assumed that measurement problems were not severe enough to invalidate the broad trends evident in the data. However, the Working Party's Report on the Measurement of International Capital Flows (International Monetary Fund, September 1992), found that the growing volume and complexity of international financial transactions has been accompanied by a significant deterioration in the coverage and quality of the data on these transactions.

The measurement of capital account transactions raises the fundamental issues of defining what constitutes a cross-border financial transaction and of deciding how to treat changes in the value of holdings of foreign financial instruments that do not arise as a result of transactions with a nonresident. If all countries adopted symmetrical accounting treatments of cross-border transactions, the reported capital outflows and inflows of all countries (inclusive of changes in official reserves) would, in principle, just match. However, discrepancies can arise if a transaction is not recorded or recorded asymmetrically in the accounts of the capital exporting and capital importing countries and if official reserve transactions are recorded by partner countries, as portfolio investment or as "other capital flows. Moreover, the scale of capital flows may be understated if a transaction is missed in both sets of accounts.

In practices, reported inflows have not equalled reported outflows in any component (Table 7). From 1985 through 1991, for example, recorded global capital inflows in each year have exceeded global outflows by an average of about \$57 billion per year.

Direct investment is the only category in which recorded outflows have persistently exceeded inflows during the period 1985-1991. The excess averaged more than \$15 billion per year. The main reason for the excess outflow was that many countries did not report the reinvestment of the earnings of multinational enterprises as direct foreign investment. There is a tendency for reinvestment of earnings to be recorded as a capital outflow by the major investing countries, but not to be recorded as a capital inflow by the host countries.

Portfolio investment has become one of the most difficult areas for compilers because of the liberalization of capital markets, financial innovation, and the changing behavior of investors. While there was only a relatively small measured discrepancy for portfolio investment during 1986-1989 (averaging about \$8 billion), this discrepancy rose sharply in 1991 and could conceal larger errors and omissions. The Working Party was not able to fully explain these discrepancies. Surveys of holdings of foreign securities are essential to provide a necessary benchmark for comparison with the flows data.

Other capital is a heterogeneous group of international capital flows that includes transactions of the private nonbank sector, of domestic banks, and resident official entities. This group has shown the largest excess of measured inflows over outflows (averaging more than \$37 billion per year between 1985 and 1991). Examinations of international banking data from the

Table 7. Global Balances on Capital Account, 1985-91.
(In billions of SDR's)

	1985	1986	1987	1988	1989	1990	1991
Capital account balance ¹	65.4	31.4	52.2	48.2	70.9	63.6	67.1
Direct investment	-7.2	-15.1	-13.5	-15.7	-20.5	-27.3	-8.1
Abroad	7.4	-79.9	-107.9	-127.6	-169.1	-175.0	-132.6
In reporting economy	0.2	64.8	94.4	111.9	148.6	147.7	124.4
Portfolio investment	46.4	4.6	11.5	-3.5	30.9	-2.7	82.2
Assets	-118.6	-158.5	-87.4	-147.2	-214.1	-129.8	-218.5
Liabilities	165.0	163.1	98.9	143.7	245.0	127.1	300.7
Other long-term capital	-23.8	-28.6	-20.9	-21.9	11.9	35.8	65.1
Other short-term capital	21.1	39.5	75.1	58.5	19.6	78.3	-53.9
Reserves	-13.3	-22.9	-120.4	-30.2	-41.8	-71.1	-42.4
Liabilities constituting foreign authorities' reserves	2.3	18.8	85.1	29.7	35.8	19.6	-5.0
Exceptional financing	39.9	35.2	35.3	31.3	34.9	30.9	29.2
Memorandum items:							
Current account balance	-78.9	-56.4	-37.6	-44.3	-59.2	-82.9	-66.6
Net errors and omissions	13.5	25.0	-14.7	-4.0	-11.6	19.4	-0.5

Source: International Monetary Fund, Balance of Payments Statistics Yearbook, Vol. 42, Part 2.

¹Including exceptional financing transactions.

Fund and the Bank of International Settlements provided strong evidence that cross-border flows of both assets and liabilities of domestic nonbanks have been seriously understated in the balance of payments accounts; assets have been understated more seriously than liabilities.

Transactions in official reserve asset are generally well measured. However, because limited information is divulged on the instrument breakdown of reserves, it was difficult to identify the counterpart transactions in debtor countries' capital accounts. It is not always known where these reserves are invested and whether they are held as securities, as bank deposits, or in some other form.

The Working Party also found that balance of payment information for offshore financial centers was incomplete; activities in some financial centers have not been included at all (for example, the Cayman Islands).

In addition, the Working Party was unable to separately identify capital flows that were deliberately concealed (drug money and other illegal activities).

The Working Party was able to identify a number of sources of the global discrepancies and made adjustments to publish capital flows for the recent past. However, the substantial gaps remained in the net data and probably even more exist in the underlying gross data. The Working Parties' findings indicated, inter alia, an urgent need to begin enhancing the world balance of payments statistical systems to an acceptably effective level for users, particularly policymakers. Improvements will take time, commitment, and resources.