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SM/87/246

October 22, 1987

To: Members of the Executive Board

From: The Secretary

Subject: Innovations and Institutional Change in the Financial Markets

There is attached for consideration by the Executive Directors a paper on innovations and institutional change in the financial markets, which is tentatively scheduled for discussion on Wednesday, November 18, 1987. This paper focuses on the trends in international financial markets over the past decade and on the areas in which they have implications for Fund policies. A supplement containing background material on financial market terms, liberalization measures in selected countries, and major innovations in financial instruments will be issued shortly.

When "International Capital Markets - Developments and Prospects, 1987" (SM/87/194) was considered by the Executive Board on September 4, 1987 (EBM/87/130 and EBM/87/131), it was agreed that the aspects of that paper relating to developments within or between industrial countries, which had not been addressed at that time, could be taken up in connection with the discussion after the Annual Meetings on "Innovations and Institutional Change in the Financial Markets." Accordingly SM/87/194 (8/5/87), will also be on the agenda for the meeting on November 18, 1987.

It is planned that a publication, which would include the above two papers as well as "Capital Market Financing for Developing Countries - Recent Developments, 1987" (SM/87/207), would be issued in the World Economic and Financial Surveys series. The text of the publication will reflect Executive Directors' comments on the staff papers and will delete certain sensitive material. Comments on the attached paper would be appreciated by November 25.

Mr. Mathieson (ext. 7662) or Mr. Folkerts-Landau (ext. 7665) is available to answer technical or factual questions relating to this paper prior to the Board discussion.

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INTERNATIONAL MONETARY FUND

Innovations and Institutional Change in the Financial Markets

Prepared by the Research Department and the  
Exchange and Trade Relations Department

(In consultation with other departments)

Approved by Jacob A. Frenkel and L.A. Whittome

October 21, 1987

Table of Contents

	<u>Page</u>
I. Introduction	1
II. Trends in International Financial Markets	4
1. Aggregate financial relationships	4
2. Offshore markets	9
3. Evolution of international financial markets	11
a. Internationalization of financial activity	12
b. Securitization	15
c. Liberalization and innovations	17
d. Supervision and regulation of financial markets	21
III. Forces Creating Change in Financial Markets	25
1. Macroeconomic disturbances	26
2. Technological advances	29
3. Differences in regulatory, supervisory, and tax structures in the mid-1970s	30
a. Regulations on yields, activities, and market access	30
b. Prudential regulation and supervision	32
c. Tax, legal, and disclosure systems	33
4. Impact on financial structures	33

IV. Policy Implications	36
1. Resource allocation, market access, and market stability	36
2. Formulation and effectiveness of macro-economic policies	41
3. Foreign exchange reserves, SDRs, and international financial markets	46
4. Coordination of supervisory and regulatory policy	47

List of Tables

Table 1. Aggregate Financial Structures of Major Financial Markets	5
Table 2. Size of International Financial Markets, 1976-86	6
Table 3. Domestic Nonfinancial Sectors' Gross Debt/GNP Ratios	8
Table 4. Size of Major Bond Markets, 1980-86	10
Table 5. Euromarkets Financial Activities	13
Table 6. Position of Foreign Banks in Selected Countries, 1960-First Half of 1985	14
Table 7. International Facilities by Category of Instrument, 1982-First Half of 1987	16
Table 8. Capital-Asset Ratios of Banks in Selected Industrial Countries	23
Table 9. Macroeconomic Developments, 1968-86	27
Table 10. Major Industrial Countries: Variability Levels for Velocity 1974-86	44

List of Charts

Chart 1. Monthly Averages of Daily Percentage Changes on U.S. Dollar/National Currency Exchange Rate Levels	28a
Chart 2. Major Industrial Countries: Velocities of Monetary Aggregates, 1970-1986	44a

## I. Introduction

At the request of the Executive Board, this year's review of international capital markets has been split into two separate discussions. The first Board discussion occurred on September 4 and examined recent developments in these markets, with particular reference to the debt problem (SM/87/194, "International Capital Markets, Developments and Prospects"). The focus of this paper and Board discussion is on the trend changes in international financial markets and their implications for policy areas of interest to the Fund. In considering these trends, emphasis is on those innovations and institutional changes that have been evident in the major domestic <sup>1/</sup> and offshore financial markets. While these trend changes are illustrated by reference to developments in each of these financial markets, there is not a detailed review of the evolution of the financial system in each country for the entire period. <sup>2/</sup>

During the 1980s, international financial markets experienced rapid growth and major structural changes. New instruments and issuance techniques emerged; extensive changes occurred in the role of financial institutions; regulations have been liberalized; and supervisory practices have adapted to changing financial relationships. Many of these developments represent a continuation of trends that have been evident since the 1970s but whose pace has accelerated in the 1980s. The structural changes in these markets represent responses to major macroeconomic disturbances, to technological advances in telecommunications and data processing, and to opportunities created by differences in financial structures (including regulations, tax codes, and portfolio preferences). Most major countries have increased the scope for international financial transactions by reducing their restrictions on both short- and long-term external capital flows. Liberalization has generally reduced restrictions on the products, activities, and location of financial institutions as well as on the interest rates that could be charged on loans or offered on liabilities. As these structural changes have taken place, integration between major domestic and offshore financial markets has increased.

This increased financial integration has important implications for areas of concern to the Fund: the transmission of the effects of changes in monetary, exchange rate, and fiscal policies within and

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<sup>1/</sup> In this paper, attention is focused principally on the domestic markets in the Federal Republic of Germany, France, Japan, Switzerland, the United Kingdom, and the United States.

<sup>2/</sup> A summary of recent financial liberalization measures for the major countries is provided in Appendix II, and the major innovations in financial instruments are described in Appendix III. The detailed changes in financial structures in the major countries have been discussed on a year-by-year basis in previous International Capital Markets reports and in relevant Article IV consultation reports.

across countries, the financing of payments imbalances, the global allocation of savings and investment, and the stability of the international monetary system. Innovations in financial instruments and techniques, especially in the major industrial countries, have made the control of monetary and credit aggregates more difficult, have complicated the interpretation of financial conditions, and have facilitated the issuance by the fiscal authorities of larger volumes of debt instruments. In addition, the domestic and international effects of macroeconomic policies have been influenced by the fact that the integration of major financial markets has been increasing rapidly. In such an environment, surveillance over exchange rate and other policies must consider the likely response of participants in international financial markets to any proposed policies. Moreover, since activity in offshore (Eurocurrency) markets has tended to expand at a more rapid rate than that in many major domestic markets, a comprehensive view of developments in international financial markets can no longer be obtained solely through a country-by-country study of activities in the major domestic markets.

The expansion of activity in international financial markets has also increased the role of these markets in the financing of payments imbalances and in the global allocation of savings and investment. While official transfers and lending have played an important role in allocating resources to some countries, the financing of sectoral imbalances (e.g., public sector budget deficits) across countries has principally occurred through private markets. In particular, many public and private sector borrowers found that issuing securities, or obtaining bank loans, in the offshore (Eurocurrency) markets was the lowest-cost source of funding. The efficiency of these relatively unregulated markets--measured in terms of producing financial services at a lower cost--reflected the presence of strong competitive pressures that led to the development of a variety of new financial instruments, which better reflected the portfolio preferences of borrowers and lenders, and new financial techniques, which lowered issuance and borrowing costs.

To encourage similar efficiency gains in major domestic financial markets, the authorities in a number of industrialized countries undertook liberalization of domestic financial markets during the late 1970s and early 1980s. In general, ceilings on interest rates were removed. The range of activities that financial institutions could undertake was expanded, and the use of a variety of new instruments and techniques was permitted. However, these developments raised an important concern: can financial market participants correctly price the risks inherent in financial activities--and more broadly--self-manage an increasingly complex and rapidly changing financial system.

Moreover, access to these markets has been strongly linked to the perceptions of market participants regarding borrowers' creditworthiness. In particular, the emergence of debt servicing problems in many

developing countries in the early 1980s demonstrated how abruptly market access could change when evaluations of creditworthiness shifted markedly. While a return to more normal market access for those countries depends upon a number of external and internal factors (including the maintenance of firm adjustment policies), the types of financial instruments and techniques that will be used to re-establish access will naturally be influenced by developments in financial markets. Furthermore, even countries with limited access to borrowing from international financial markets may be affected indirectly by developments in these markets. For example, an expansion of the secondary market for external bank debt might well influence the relationship between debtor countries and their principal creditors.

The efficiency and stability of the reserve system is likewise dependent on developments in international financial markets as foreign exchange reserves are now acquired, in large part, via borrowing in these markets. Many countries have used borrowing from international financial markets to manage their reserve positions at a relatively low net cost (equal to the difference between the return on reserve assets and the cost of borrowed funds). Disturbances that would hinder the ability of those markets to supply reserve assets could have major implications for Fund policies. An evaluation of the adequacy of the stock of international reserves and the need for SDR allocations would necessarily involve some judgment about the ability of international capital markets to meet the long-term global need for reserves in an efficient and reliable manner.

To consider the implications of changes in international financial markets for areas of policy interest to the Fund, the remainder of this paper is divided into three sections. Section II reviews the principal changes in the structure of international financial markets that have been evident during the past decade. Attention is focused principally on the changes in the offshore markets and the domestic markets in the major industrial countries. Since the broad issues relating to the external payments difficulties of many developing countries have been examined in a number of recent Board papers 1/ and will be discussed

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1/ These include: SM/85/61 and Supplement 1, "Developing Countries' External Indebtedness to Commercial Banks," February 20, 1985; SM/85/62 and Supplement 1, "Developing Countries' Indebtedness to Official Creditors," February 20, 1985; EBS/85/173 and Supplement 1, "The Role of the Fund in Assisting Members with Commercial Banks and Official Creditors," July 23, 1985; EBS/86/41, "Implementing the Debt Strategy: Financing Issues," February 24, 1986; EBS/86/41 and Supplement 1, "Implementing the Debt Strategy: Financing Issues; Conversion of External Debt to Equity and Liquidation of Loan Claims at a Discount," March 21, 1986; EBS/87/38 and Supplement 1, "Implementation of the Debt Strategy: Current Issues," February 20, 1987; and SM/87/190, "Financing for Countries With Payments Difficulties--Recent Experiences and Possible Adaptations," July 31, 1987.

again in a forthcoming Executive Board paper, <sup>1/</sup> this study considers only those aspects of recent structural changes in international financial markets that bear directly on the relationship between these markets and developing countries. Section III examines the main factors behind these structural changes in international financial markets, with emphasis on macroeconomic disturbances, technological advances in telecommunications and computing, and differences in financial regulations, institutions, and instruments. Section IV considers the implications of recent structural changes in financial markets for: the allocation of resources in the world economy; the formulation, implementation, and effectiveness of monetary, exchange rate, and fiscal policies; the stability of the international monetary system; the role of the SDR; and the international coordination of supervisory and regulatory policy.

## II. Trends in International Financial Markets

### 1. Aggregate financial relationships

During the past decade, real activity in the major domestic and offshore financial markets has expanded at a more rapid rate than has real output in the major industrial countries. For example, bank lending (net of redepositing) and net bond issuance measured in U.S. dollars and deflated by the U.S. GNP deflator grew 2 1/2 times faster than real GNP in the industrial countries during 1976-86 (7 percent versus 3 percent per annum, respectively) (Tables 1 and 2). <sup>2/</sup> The expansion of securities and equity markets have been evidenced in the sharp rise in the ratios of outstanding bonds to GNP and capitalization of equity markets to GNP (see lines 5-6 of Table 1). In part, this reflects the higher real returns earned on financial assets in the 1980s in comparison to those earned in the 1970s. The expansion of securities and equity markets has exceeded that of money markets as indicated by the more modest increases, and indeed declines in two industrial countries, in the ratios of broad money to GNP.

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<sup>1/</sup> This includes "Issues in Managing the Debt Situation."

<sup>2/</sup> International bank lending and bond issuance also rose from being equal to 10.3 percent of the value of world imports in 1976 to 11.9 percent in 1986. This study measures bank lending using the Bank for International Settlements (BIS) data on lending net of redepositing. Previous International Capital Markets reports have employed this data series as well as the Fund's International Banking Statistics (IBS) data on bank lending. The BIS data are used to examine trends in financial activity between the mid-1970s and mid-1980s because the IBS data does not extend back before 1978. The BIS and IBS series differ in terms of country coverage, the inclusion of banking centers, and the breakdown of lending to banks and nonbanks.

Table 1. Aggregate Financial Structures of Major Financial Markets

(Averages for period, in percent)

	United States		Japan		France		Switzerland		United Kingdom		F.R. of Germany	
	1973-76	1983-86	1973-76	1983-86	1973-76	1983-86	1973-76	1983-86	1973-76	1983-86	1973-76	1983-86
1. Gross savings ratio (GS/GNP)	17.1	14.5	35.0	31.5	26.0	19.7	29.2	28.8	18.3	17.7	25.5	23.6
2. Gross investment ratio (GI/GNP)	15.8	16.1	33.7	27.9	24.9	19.2	25.8	23.1	20.0	16.9	22.2	20.0
3. Narrow money/GNP <sup>1/</sup>	18.1	15.0	29.8	26.2	29.9	25.8	34.1	30.8	15.1	15.5	14.9	16.3
4. Broad money/GNP <sup>2/</sup>	61.0	62.0	77.1	92.8	66.1	63.8	90.8	113.7	36.3	33.7	43.2	49.3
5. Bonds/GNP	54.2 <sup>3/</sup>	85.3 <sup>4/</sup>	37.3 <sup>3/</sup>	83.6 <sup>4/</sup>	15.2 <sup>3/</sup>	31.5 <sup>4/</sup>	44.8 <sup>3/</sup>	75.3 <sup>4/</sup>	39.2 <sup>3/</sup>	38.7 <sup>4/</sup>	54.0 <sup>3/</sup>	86.2 <sup>4/</sup>
6. Equity Market Capitalization/GNP	53.4 <sup>3/</sup>	69.8 <sup>4/</sup>	29.2 <sup>3/</sup>	86.3 <sup>4/</sup>	10.9 <sup>3/</sup>	19.3 <sup>4/</sup>	29.9 <sup>3/</sup>	81.5 <sup>4/</sup>	36.1 <sup>3/</sup>	92.4 <sup>4/</sup>	13.1 <sup>3/</sup>	23.3 <sup>4/</sup>
7. Sector balances <sup>5/</sup> (relative to GNP)												
a. Government	-2.3	-5.1	-5.3	-5.2	--	-2.9	--	--	-5.9	-3.3	-1.9	-1.7
b. Business	-2.2	-1.7	-5.7	-1.7	--	-1.1	--	--	-2.4	1.5	-5.0	-2.7
c. Households	5.3	4.8	10.3	10.0	--	4.0	--	--	5.7	3.2	8.2	6.3
d. Foreign	-0.7	2.0	0.1	-3.1	--	0.0	--	--	1.9	-0.1	-1.3	-1.8
8. Net foreign asset position (relative to GNP <sup>6/</sup> )	3.3	-4.6	3.0	8.5	-1.3	-4.1	6.0	2.6 <sup>7/</sup>	-1.9	5.7	7.5	7.6
9. Rate of inflation (GNP deflator)	7.6	3.3	12.1	1.3	10.0	6.6	5.9	4.4	15.8	5.3	5.6	2.3
10. Interest rates												
a. Nominal												
(i) Short-term	7.5	8.6	9.3	5.9	9.6	10.5	2.3	3.0	4.5	9.5	6.8	5.2
(ii) Medium- or long-term	7.5	10.5	8.6	6.4	9.3	11.4	6.0	4.6	13.6	10.5	9.0	7.1
b. Real <sup>8/</sup>												
(i) Short-term	-0.1	5.1	-2.3	4.6	-0.4	3.6	-2.0	-1.3	-8.6	4.8	1.2	4.3
(ii) Medium- or long-term	-0.1	7.0	-2.9	5.0	-0.6	4.4	0.2	0.2	-0.7	5.7	3.2	6.2

Sources: International Monetary Fund, International Financial Statistics; Salomon Brothers, How Big is the World Bond Market? and International Equity Analysis.

<sup>1/</sup> Narrow money equals M1 in all countries.

<sup>2/</sup> Broad money equals M2 for the United States, M2 + certificates of deposit for Japan, and M3 for the other countries.

<sup>3/</sup> End of 1975.

<sup>4/</sup> End of 1986.

<sup>5/</sup> Sectoral imbalances measured by net decumulation of financial assets in flow of funds data (a minus sign denotes a sector that is a net user of credit). Where relevant, unidentified residual not shown.

<sup>6/</sup> Cumulative current account balance—positive value indicates net holdings of foreign assets. The cumulation started in 1956 for the Federal Republic of Germany, Japan, and Switzerland, 1953 for the United States, 1967 for France, and 1952 for the United Kingdom. This measure is biased to the extent that it ignores accumulations for periods prior to the starting year and capital gains and losses that arise from price and exchange rate movements.

<sup>7/</sup> Average for 1983-85.

<sup>8/</sup> Nominal interest rate (r) deflated ( $[(1+r)/(1+i)]$ ) by actual inflation (i) measured by the percentage change in the GNP deflator.

Table 2. Size of International Financial Markets, 1976-86

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
<u>(In billions of U.S. dollars)</u>											
Total international lending through banks and bond markets	96	95	114	148	179	194	144	131	152	181	245
International bond issues (net) <sup>1/</sup>	26	27	24	23	19	29	49	46	62	75	85
International bank lending (net of redepositing)	70	68	90	125	160	165	95	85	90	105	160
International bond issues (net) deflated by U.S. GNP deflator	24	24	20	17	13	18	29	26	34	40	44
International bank lending (net) deflated by U.S. GNP deflator	66	60	74	94	111	105	56	49	50	56	83
<u>(In percent)</u>											
Bond issues as ratio to world imports (in U.S. dollars)	2.8	2.5	1.9	1.5	1.0	1.5	2.7	2.6	3.3	4.0	4.1
International bank lending (net) as ratio to world imports (in U.S. dollars)	7.5	4.6	7.2	7.8	8.6	8.7	5.2	4.9	4.9	5.6	7.8
International bond issues (net) as ratio to international bank lending (net)	37.1	39.7	26.7	18.4	11.9	17.6	51.6	54.1	68.9	71.4	53.1

Sources: International Monetary Fund, World Economic Outlook and International Financial Statistics; Organization for Economic Cooperation and Development, Financial Market Trends; Bank for International Settlements.

<sup>1/</sup> New international bond issues less redemptions, repurchases, and bank purchases of bonds.

During this period, the debt-to-income and asset-to-income ratios of the public, corporate, and household sectors have risen in most major countries (Table 3). The higher ratios of debt-to-income for the public sectors reflect the large-scale fiscal deficits that have persisted in most major countries in recent years. The higher private sector ratios of debt-to-income appear to be associated with a number of economic factors. For example, the tax deductibility of interest payments (in some countries) and the largely unanticipated increases in inflation of the late 1970s combined to reduce the real after tax interest cost of borrowing. In addition, financial liberalization has been accompanied by the removal of many of the quantitative controls on the growth of bank lending, and financial innovations have opened up new borrowing opportunities and lowered intermediation costs.

This relatively rapid expansion of financial assets holdings and debt relative to output has occurred despite declines in the gross savings rates in the six industrial countries listed in Table 1 between the mid-1970s and the mid-1980s. The declines in aggregate savings ratios appear to reflect the influence of such longer-term factors as demographic trends and the availability of pensions provided by the public sector as well as the effects of short-term changes in countries' terms of trade and business cycle developments.

The expansion in the real size of financial markets has been accompanied by major shifts in the flow of funds among sectors of the major countries as well as sharp movements in the net international positions of each of these countries. In all major countries, the household sector has remained the main source of savings for other sectors, although the size of this sector's financial surplus relative to GNP has fallen in all countries between the mid-1970s and mid-1980s (Table 1). While the business sector has traditionally been a net user of credit, its share of total credit has declined relative to that received by governments. In some countries, the large declines in the share of total credit going to the business sector also have been accompanied by declines in the ratios of investment to GNP. In the major industrial countries, including those that have an external savings surplus with the rest of the world, the government has become a net absorber of funds. In the United States, the foreign sector has switched to a net absorber of credit to a net supplier; whereas the opposite has occurred in the Federal Republic of Germany and in Japan. This change in the position of the foreign sector has been reflected in corresponding changes in their net external creditor positions.

Table 3. Domestic Nonfinancial Sectors' Gross Debt/GNP Ratios 1/  
(In percent)

Countries	Public Sector	Corporate Sector	Personal Sector
United States			
1975	42	37	50
1986	56	45	65
Japan			
1975	39	94	33
1986 <u>2/</u>	91	102	47
Germany, Federal Republic of			
1975	25	63	42
1986	41	71	55
United Kingdom			
1975	63	46	33
1986 <u>2/</u>	58	48	55

Source: Bank for International Settlements, Annual Report, 1986.

1/ National balance-sheet data.

2/ Third quarter.

## 2. Offshore markets <sup>1/</sup>

Although the real size of domestic financial markets has expanded at a more rapid rate than real GNP, the growth of real financial activity in the offshore markets has been even more rapid. Between 1975 and 1986, the stock of Eurocurrency banks' loans increased at an annual real rate of about 14 percent to reach \$3.2 trillion; whereas the outstanding stock of Eurocurrency bonds grew at an annual real rate of growth of nearly 21 percent to reach \$618 billion. The scale of the annual flows of Eurocurrency bank loans and net issues of Eurobonds have also increased relative to the value of world trade (Table 2).

Bond markets have expanded more rapidly than bank lending during much of the 1980s for several reasons. Innovations in the Eurocurrency market and deregulation in domestic markets made possible new types of security transactions for both banks and nonfinancial firms. Moreover, when the perceived creditworthiness of some large banks deteriorated as problems emerged with the servicing of both domestic and foreign loans, many nonbank borrowers found that they could obtain credit at a lower cost through direct issues in the securities markets. <sup>2/</sup>

The expansion of the Eurocurrency market has also been more rapid than growth in the major domestic markets. Although domestic bond issuances climbed sharply in a number of major countries as large fiscal deficits arose in both the mid-1970s and the early 1980s, Eurocurrency bond issues grew even more rapidly. The more rapid expansion of Eurocurrency bonds has been most notable in the Eurodollar sector where Eurodollar bonds have risen from roughly 4 percent of total (both public and private) domestic bonds issued in the United States in 1980 to nearly 10 percent in 1986 (Table 4). Similarly, Eurobonds denominated in pounds sterling were about 12 percent of total domestic U.K. bonds in

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<sup>1/</sup> In this paper, international financial markets are viewed as comprising the major domestic and offshore financial markets. A domestic market includes those financial centers in each country that provide financial intermediary services principally to domestic residents and whose operations are subject to a set regulatory, supervisory, tax, accounting, and disclosure requirements established or supported by the national authorities. The offshore markets include those financial centers which provide financial intermediary services primarily for nonresident borrowers and lenders, usually in a currency other than that of the country in which they are located. In general, institutions in such markets are not subject to direct national regulations, including interest rate ceilings, reserve requirements, controls over portfolio decisions or certain taxes. The distinctions between domestic and offshore markets have diminished over time as a result of the liberalization of domestic financial markets and innovations in financial instruments.

<sup>2/</sup> The securitization of international finance is discussed in Section II.3.b.

Table 4. Size of Major Bond Markets, 1980-86  
(In billions of local currency units at end of period; or in percent)

	1980		1981		1982		1983		1984		1985		1986	
	Amount	Percent of Total												
<b>France</b> (in French francs)														
Public sector	376.9	77.1	437.3	78.4	565.9	80.2	690.0	80.4	852.9	80.9	1,034.7	79.7	1,282.8	81.2
Corporate sector	108.1	22.1	116.6	20.9	134.4	19.1	161.5	18.8	194.4	18.4	251.7	19.4	285.2	18.0
Foreign bonds <sup>1/</sup>	3.9	0.8	4.1	0.7	5.3	0.7	6.4	0.8	7.3	0.7	11.8	0.9	13.0	0.8
Total:	488.9	100.0	558.0	100.0	705.6	100.0	857.9	100.0	1,054.6	100.0	1,298.2	100.0	1,581.0	100.0
Eurobonds <sup>2/</sup>	8.7	1.8	11.1	2.0	10.5	1.5	10.1	1.2	9.0	0.9	11.0	0.9	32.2	2.0
<b>Germany, Federal Republic of</b> (in deutsche mark)														
Public sector	130.8	13.2	127.9	11.3	156.6	12.5	191.0	14.0	228.0	15.5	272.4	17.3	329.7	19.6
Schuldscheine (promissory notes) <sup>3/</sup>	360.6	36.5	439.1	38.7	480.1	38.3	504.2	36.8	520.1	35.5	527.5	33.5	514.5	30.6
Corporate sector	417.9	42.3	488.0	43.0	533.7	42.5	586.6	42.8	622.0	42.4	657.0	41.7	688.1	41.0
International bonds	79.2	8.0	80.3	7.0	83.6	6.7	87.6	6.4	96.3	6.6	117.4	7.5	147.2	8.8
Total:	988.5	100.0	1,135.3	100.0	1,254.0	100.0	1,369.4	100.0	1,466.4	100.0	1,574.3	100.0	1,679.5	100.0
<b>Japan</b> (in yen)														
Public sector	109,893	74.5	127,013	75.7	144,670	76.2	163,979	76.7	178,996	76.3	196,528	76.6	208,231	75.3
Corporate sector	35,867	24.3	38,590	23.0	42,312	22.3	46,503	21.7	51,346	21.9	54,930	21.4	62,846	22.8
Foreign bonds	1,784	1.2	2,251	1.3	2,874	1.5	3,427	1.6	4,171	1.8	5,174	2.0	5,337	1.9
Total:	147,544	100.0	167,854	100.0	189,856	100.0	213,909	100.0	234,513	100.0	256,632	100.0	276,414	100.0
Eurobonds	125	0.1	205	0.1	322	0.2	385	0.2	749	0.3	1,855	0.7	4,890	1.8
<b>United Kingdom</b> (in pound sterling)														
Public sector	82.7	93.9	90.4	93.8	96.3	92.8	105.5	92.9	114.9	91.4	124.6	91.7	131.9	90.8
Corporate sector	5.3	6.0	5.4	5.6	6.2	6.0	6.2	5.4	7.9	6.3	7.6	5.6	9.5	6.6
Foreign bonds	0.1	0.1	0.6	0.6	1.3	1.2	1.9	1.7	2.9	2.3	3.7	2.7	3.8	2.6
Total:	88.1	100.0	96.4	100.0	103.8	100.0	113.6	100.0	125.7	100.0	135.9	100.0	145.2	100.0
Eurobonds	0.7	0.8	0.8	0.8	1.2	1.2	2.6	2.3	5.4	4.3	10.0	7.4	16.8	11.6
<b>United States</b> (in dollars)														
Public sector	1,043.3	67.0	1,171.5	68.6	1,377.5	70.5	1,624.0	72.2	1,920.2	73.0	2,301.3	73.5	2,670.3	74.4
Corporate sector	465.4	29.9	483.7	28.3	516.1	26.4	562.3	25.0	643.0	24.4	756.9	24.2	867.3	24.2
Foreign bonds	47.8	3.1	53.2	3.1	59.9	3.1	63.7	2.8	67.6	2.6	72.7	2.3	51.5	1.4
Total:	1,556.5	100.0	1,708.4	100.0	1,953.5	100.0	2,250.0	100.0	2,630.8	100.0	3,130.9	100.0	3,589.1	100.0
Eurobonds	63.8	4.1	80.3	4.7	113.4	5.8	145.1	6.5	195.9	7.5	267.2	8.5	350.6	9.8
<b>Switzerland</b> (in Swiss francs)														
Public sector	23.4	24.6	23.6	22.3	23.8	19.4	23.5	17.8	24.5	16.8	25.0	10.9	24.8	9.3
Corporate sector	45.8	48.1	51.0	48.3	56.3	45.9	59.1	44.6	63.3	43.6	66.7	29.1	77.5	28.9
Foreign bonds	26.0	27.3	31.1	29.4	42.6	34.7	49.7	37.6	57.5	39.6	67.4	29.4	90.6	33.8
Foreign notes (private placements)	—	...	—	...	—	...	—	...	—	...	70.0	30.6	75.0	28.0
Total:	95.2	100.0	105.7	100.0	122.7	100.0	132.3	100.0	145.3	100.0	229.1	100.0	267.9	100.0

Source: Salomon Brothers, Inc., *How Big is the World Bond Market?*

<sup>1/</sup> Foreign bonds are issued by a borrower who is of a nationality different from the country in which the bonds are issued. Such issues are usually underwritten and sold by a group of banks of the market country and are denominated in that country's currency.

<sup>2/</sup> Eurobonds are those underwritten and sold in various national markets simultaneously, usually through international syndicates of banks.

<sup>3/</sup> These include certain public sector issues.

1986. However, the recent liberalization of access to major domestic bond markets as well as the removal of withholding taxes on foreign holdings of domestic securities have improved the competitive position of these domestic markets relative to the Eurocurrency market.

The growing importance of external financial transactions for domestic banks in the major industrial countries has been reflected in the rise in the proportion of total bank business accounted for by foreign loans or foreign security purchases. For example, the ratio of the external assets to total assets of banking institutions in France, the Federal Republic of Germany, Japan, Switzerland, the United Kingdom, and the United States rose from 14 percent at the end of 1975 to 19 percent at the end of 1985. As will be discussed in Section III, this expansion of external assets reflects both economic factors and the arbitrage of tax, accounting, and regulatory differences between the major markets. 1/

### 3. Evolution of international financial markets

The evolution of international financial markets during the past decade reflected four broad trends: the progressive internationalization of financial transactions, the securitization of international finance, the liberalization of national financial markets, and the strengthening of the supervisory and regulatory framework that had existed in the mid-1970s. Developments in 1986 and 1987 (reviewed in SM/87/194) represented largely a continuation of these trends, albeit at a slower pace than in most of the 1980s. Moreover, there were some departures from these trends including a more rapid expansion of bank lending relative to bond issuance and a major disturbance in the floating rate note market. In addition, during the period since 1982, the increased activity in international financial markets has also been accompanied by a continuing decline in lending to developing countries experiencing debt-servicing problems.

As will be discussed in Section III, these trend changes reflect the continuing interaction between macroeconomic disturbances, technological advances, and official financial policies regarding capital controls, supervisory practices, and regulatory restrictions. It is this interaction between policies and financial market developments that has provided much of the momentum for the extensive changes in financial markets. While innovations in financial instruments and the expanding use of offshore financial markets were often stimulated by regulatory restrictions in domestic markets, for example, these same innovations have eventually led to adjustments in regulatory policies and altered the effectiveness of macroeconomic policy instruments.

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1/ This involves the shifting of transactions to particular markets to take advantage of tax, legal, and regulatory differences.

a. Internationalization of financial activity

During the 1960s and 1970s, the trend toward the internationalization of financial activity was most evident in the growth of the Eurocurrency markets (Table 5). Internationalization continued with the progressive integration of these offshore markets with domestic markets as restrictions on capital flows were liberalized by the United States in 1974, the United Kingdom in 1979, and other countries, most notably Japan and France during the 1980s. Another aspect of this internationalization has been the entry of foreign financial firms (e.g., in banking, insurance, and securities) into domestic markets (Table 6). Finally, the spread of new financial instruments and techniques from the Euromarkets to the domestic markets reduced further the segmentation between domestic and international markets.

The internationalization of financial activity is readily apparent in the financial statistics of the past decade. 1/ Total lending through international bank credit (net of redepositing) and bond markets grew from \$96 billion in 1976 to \$245 billion in 1986 (Table 2). International bank lending (net of redepositing) rose from \$70 billion in 1976 to \$160 billion in 1986. 2/ The net issue of international bonds increased at a somewhat faster pace, i.e., from \$26 billion in 1975 to \$85 billion in 1986. Medium-term borrowing in the form of note issuance facilities 3/ expanded from nearly \$3 billion in 1982 to \$39 billion in 1985, but fell \$21 billion in 1986 due to the emergence of the Eurocommercial paper programs; while the Eurocommercial paper programs grew to \$57 billion in 1986 from their first issue in 1984. Finally, the issue of international equity 4/ (initial public offerings of shares and other equity-linked instruments) has grown from about \$2 billion in 1984 to \$8 billion during 1986. The expansion of the international equity market in 1986 and 1987 provides the most recent example of the continuing internationalization of financial activity.

The greater participation of foreign financial entities in domestic markets has also been evident in most major markets. The number of foreign banking firms in the major industrial countries increased sharply and accounted for a considerably greater share of total bank assets (Table 6). The introduction of foreign securities firms into domestic markets also proceeded at a rapid pace. For example, several stock exchanges (e.g., in Japan and the United Kingdom) further expanded their membership in 1986 and 1987 to include foreign firms. Moreover,

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1/ For details of recent developments, see SM/87/194:

2/ Total international bank lending (including interbank activity) grew even more rapidly from \$100 billion in 1976 to \$562 billion in 1986. Interbank flows have grown rapidly in response to increased activity in the major financial centers and to arbitrage of regulatory restrictions.

3/ See Appendix I for the definition of this type of facility.

4/ See Appendix I for a definition of such equity.

Table 5. Euromarkets Financial Activities

(In billions of U.S. dollars)

	1973	1975	1980	1981	1982	1983	1984	1985	1986	First half of 1987
Eurobonds	4.2	8.7	20.4	31.3	50.3	50.1	81.7	135.4	187.0	86.3
International bank loans <u>1/</u>	20.8	20.6	81.0	144.4	96.0	73.5	108.5	110.3	82.8	43.6 <u>2/</u>
Issuance facilities <u>3/</u>						9.5	28.8	68.6	92.2	28.8 <u>2/</u>
Note issuance facilities						3.5	17.4	36.3	21.4	7.2 <u>2/</u>
Other						6.0	11.4	32.3	70.8	21.6 <u>2/</u>
Of which:										
Other committed facilities						...	(11.4)	(10.5)	(5.6)	(1.2) <u>2/</u>
Eurocommercial paper programs						...	...	(11.2)	(56.7)	(17.4) <u>2/</u>
Other non-under- written facilities						...	...	(10.6)	(8.5)	(3.0) <u>2/</u>
Equity-related bonds						8.0	10.9	11.5	22.3	10.2 <u>2/</u>

Source: Organization for Economic Cooperation and Development: Financial Statistics Monthly and Financial Market Trends.

1/ Defined here as credits extended by commercial banks wholly or in part out of eurocurrency funds.

2/ Estimated.

3/ Excludes merger-related standbys.

Table 6. Position of Foreign Banks 1/  
in Selected Countries, 1960-First Half of 1985

(End of year data)

Host Country	1960			1970			1980			First Half 1985		
	Number of institutions	Number of banking offices <u>2/</u>	Foreign bank assets as percent of total bank assets	Number of institutions	Number of banking offices <u>2/</u>	Foreign bank assets as percent of total bank assets	Number of institutions	Number of banking offices <u>2/</u>	Foreign bank assets as percent of total bank assets	Number of Institutions	Number of Banking Offices <u>2/</u>	Foreign bank assets as percent of total bank assets
Belgium <u>3/</u>	14	...	8.2 <u>4/</u>	26	...	22.5	51	...	41.5	57	...	51.0
Canada	—	—	—	—	—	—	—	—	—	57	—	6.3
France	...	33	7.2	...	58	12.3	...	122	15.0	...	147	18.2 <u>5/</u>
Germany, Federal Republic of <u>6/</u>	...	24	0.5	...	77	1.4	...	213	1.9	...	287 <u>7/</u>	2.4
Italy <u>8/</u>	1	...	...	4	...	...	26	...	0.9	36	...	2.4
Japan <u>9/</u>	...	34	...	...	38	1.3	...	85	3.4	...	112	3.6
Luxembourg <u>10/</u>	...	3	8.0	...	23	57.8	...	96	85.4	...	106	85.4
Netherlands <u>11/</u>	...	...	...	23	...	...	39	...	17.4	40	...	23.6
Switzerland	8	...	...	97	...	10.3	99	...	11.1	119	...	12.2
United Kingdom	51 <u>12/</u>	...	6.7	95	...	37.5	214	...	55.6	293 <u>13/</u>	...	62.6
United States <u>14/</u>	...	...	...	...	... <u>15/</u>	5.8 <u>16/</u>	...	579	8.7	...	783 <u>17/</u>	12.0

Source: Bank for International Settlements, *Recent Innovations in International Banking*, 1986.

1/ Number of foreign banking institutions ("families") operating in the country through branches or majority-owned subsidiaries unless otherwise specified.

2/ Foreign banking organizations represented by more than one entity are double-counted.

3/ Belgian-owned banks are not considered foreign banks.

4/ End-1958.

5/ End-1984.

6/ Assets are for branches only.

7/ At end-June 1985, these offices represent 95 different banking organizations.

8/ Branches only; at end-June 1985 there were five foreign-owned subsidiaries.

9/ Branches only; at end-June 1985 there were 76 different foreign banks operating in Japan.

10/ Belgian-owned banks are not considered foreign banks.

11/ Universal branches only.

12/ 1962.

13/ At end-June 1985, 357 if joint ventures and consortium banks are included.

14/ Assets are for foreign agencies and branches only.

15/ In the early 1970s there were about 50 foreign banking offices.

16/ At end-1976.

17/ At end-June 1985, these offices represented approximately 350 institutions.

the standardization of market practices, such as bond ratings, settlement procedures, and codes of conduct, served to facilitate cross-border transactions.

b. Securitization

Securitization has occurred in tandem with the internationalization of financial activity. Securitization has involved a greater use of direct debt markets--in which the lender holds a tradable direct claim on the borrower, and a shift away from indirect finance--in which an intermediary holds a nontradable loan asset and the saver holds a liability (which may be tradable) of the intermediary. In particular, syndicated loans have been increasingly displaced by issues of international bonds or, more recently, by the use of note issuance facilities or nonunderwritten Eurocommercial paper. 1/ In all major countries, the funds raised in the bank loan market as percentage of GNP have declined from 1980 to 1986 (except in Japan), while funds raised through securities markets have increased. 2/

The role of banks in the securities markets has changed with the trend toward securitization. The total holding by banks of international bond and other long-term securities rose from \$47 billion in 1981 to \$158 billion by the end of 1985, while the volume of securities (excluding certificates of deposits) issued by banks rose from about \$7 billion in 1981 to \$43 billion by the end of 1985. In addition, the banks provided almost all the lines of credit used to secure note-issuance facilities. It therefore appears that, while securitization has changed the form in which banking institutions provide credits, banks have remained an important source of credit.

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1/ Syndicated lending (excluding reschedulings) declined from its peak of \$98 billion in 1982, to \$58 billion in 1986, while the international bond market grew from \$76 billion to \$226 billion over the same period and the volume of Euro-note borrowing facilities (including non-underwritten Eurocommercial paper) grew from \$5 billion in 1982 to \$84 billion in 1986 (Table 7). Moreover, the structure of borrowing in the Euronote market has shifted significantly away from underwritten note issuance facilities towards the nonunderwritten Eurocommercial paper market. Part of the decline in the note facilities appears to be associated with the proposal to apply capital requirements against facilities arranged by banks in the U.S. and the U.K. In 1984, underwritten facilities amounted to \$29 billion, while Eurocommercial paper was not yet significant; by 1986 the importance of the two sources of funds had been reversed and underwritten facilities amounted to \$27 billion while Eurocommercial paper had grown to \$57 billion (see Table 7).

2/ In some countries, this decline may have reflected the general improvement in the liquidity positions of nonbank firms (which reduced the need for bank borrowing) due to a recovery from cyclical downturns and improvements in conditions in the securities markets (reflecting lower interest rates).

Table 7. International Facilities by Category of Instrument,  
1982-First Half of 1987

(In billions of U.S. dollars)

	1982	1983	1984	1985	1986	First half of 1986	First half of 1987
Total note issuance facilities	2.7	3.5	17.4	38.7	21.4	9.9	9.7
Of which:							
Multiple component facilities	—	—	8.0	18.0	9.3	4.8	5.6
Backup for Euronotes	2.5	0.9	6.4	17.9	9.8	3.7	2.7
Banker's acceptances	2.0	1.8	5.8	2.5	1.8	0.5	0.5
Of which: Sterling	1.5	1.3	1.1	2.1	0.8	0.1	0.4
Commercial paper backups	0.2	3.0	2.8	6.2	2.1	1.7	0.1
Other instruments	0.5	1.2	2.8	2.5	1.7	1.1	1.0
Subtotal	5.4	9.5	28.8	49.9	27.0	13.2	11.3
Merger-related stand-bys	—	4.0	26.5	7.0	0.7	—	—
Subtotal	5.4	13.5	55.3	56.9	27.7	13.2	11.3
Eurocommercial paper programs	...	...	...	11.2	56.7	29.2 <sup>1/</sup>	17.4 <sup>1/</sup>
Total	5.4	13.5	55.3	68.1	84.4	42.4	28.7

Source: Organization for Economic Cooperation and Development, Financial Market Trends.

<sup>1/</sup> Estimates.

In addition to the shift of credit flows from bank lending to securities markets, a second form of securitization has involved the packaging of assets that are normally not traded (e.g., bank loans, corporate receivables, and household liabilities) into tradable securities. This has been done either by using the original assets as collateral for a new tradable securities issue (collateralized obligation) or by issuing a new tradable security that is being serviced by the proceeds of the original assets (pass-through security). For example, the sale of loans, notably residential mortgages, has continued to grow in the domestic as well as the external markets. The share of new mortgages being securitized in the United States has grown from 15 percent in 1981 to over 50 percent in 1986. In addition, many lending instruments, which are technically not securitized, carry provisions allowing for their transfer to third parties (e.g., transferable loan certificates).

A third form of securitization has involved the creation of exchange traded futures and options contracts. In this case, a certain type of risk, usually one associated with price volatility, is securitized. During 1986 and early 1987, several new contracts for financial futures and options were introduced on major exchanges and the turnover volume of existing contracts showed unprecedented increases (Appendix III). A relatively new development was the progressive introduction of embedded options in international bonds, where the bond's principal redemption is typically linked by a specific formula to an index or the price (including exchange rates) of another instrument. Several countries introduced new financial futures and options contracts, and trading volume increased significantly in 1986; e.g., the total financial futures trading volume on all U.S. exchanges increased by 23 percent in 1986 and the total trading volume of financial options increased by 64 percent in 1986. The fastest growth, by way of turnover volume and outstanding contracts, has been in the currency option markets (Appendix III).

Yet a further aspect of the securitization of international financial markets has been the increased volume of secondary trading in various securities markets. For example, the volume of secondary market trading in Eurobonds (such trading takes place in the over-the-counter market) was \$2.2 trillion in 1985 and \$3.6 trillion in 1986. Since 1980, the primary issue of Eurobonds has grown at an annual rate of about 45 percent, while secondary market trading has expanded by nearly 60 percent.

c. Liberalization and innovations

The liberalization of financial markets during the past decade has proceeded along four avenues: the liberalization of cross-border financial flows, the growing foreign participation in domestic markets, the introduction of new instruments, and the removal of domestic price and quantity restrictions. A detailed discussion of recent liberalization measures in selected countries was provided in the staff report on

international capital markets in 1986, <sup>1/</sup> and this discussion has been updated in Appendix II. This section provides an overview of the major trends in the liberalization of financial markets.

A major liberalization of financial markets during the past decade has involved the gradual removal of capital controls in the major economies and the more recent removal of restrictions on the participation of foreign financial firms in domestic financial markets. Heretofore, a variety of legal and fiscal restrictions on international transactions had been used to control both capital inflows and capital outflows for the purpose of macroeconomic management.

An early but significant step towards the liberalization of capital flows came with the removal of controls on capital outflows from the United States. An Interest Equalization Tax had discouraged foreign borrowers from issuing securities in U.S. financial markets and a Voluntary Foreign Credit Restraint Program may have inhibited U.S. banks and financial institutions from increasing the level of loans to foreign entities. By 1974, these measures and various other administrative guidelines had been removed. Foreign banks and other financial entities have generally had access to U.S. domestic markets, and the access for banks has been on the basis of national treatment since the International Banking Act of 1978. The U.S. authorities also abolished the withholding tax levied on nonresident holders of bonds issued by U.S. residents in 1984.

The United Kingdom undertook a major step toward the liberalization of sterling cross-border transactions by removal of exchange controls in 1979. The controls were designed to prevent capital outflows and their removal, along with the lifting of lending restrictions on banks (the so-called corset), opened the sterling banking and securities markets to foreign borrowers.

The German authorities too have significantly reduced restrictions on capital inflows. In the 1970s, these restrictions were principally authorization requirements for nonresident purchases of domestic bonds and money-market instruments and, for a few years, restrictions on payments of interest on bank deposits held by foreigners. Such restrictions were gradually removed in the 1980s. Access to the German capital markets was further liberalized with the recent replacement of the calendar for issues in securities markets with a simple notification system, and with the removal of a 25 percent withholding tax on interest payments on domestic bonds to nonresidents. However, it has been proposed that effective January 1989, a 10 percent withholding tax be

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<sup>1/</sup> Maxwell Watson, Russell Kincaid, Caroline Atkinson, Eliot Kalter, and David Folkerts-Landau, "International Capital Markets, Development and Prospects," World Economic and Financial Surveys, December 1986.

reimposed on interest payments on bonds issued in the Federal Republic of Germany.

In the case of Japan, the authorities have, since the early 1980s, undertaken an extensive liberalization of cross-border financial activities. The set of foreign institutions allowed to borrow from Japanese banks, or to issue in the Japanese securities markets, has been gradually extended. In addition, the Euroyen bond market was opened to foreign corporations in 1984, and access to this market was further extended to foreign banks in 1986. The depth and breadth of the Euroyen market was significantly increased by authorization of Euroyen floating rate notes, dual currency bonds, currency conversion notes, deep discount and zero coupon bonds.

Throughout the 1970s and early 1980s, French authorities employed controls on capital outflows for the purpose of monetary and exchange rate management. However, in the mid-1980s, the authorities undertook an extensive liberalization of cross-border financial flows. The Euro-French franc bond market was reopened and exempted from a 10 percent withholding tax applied in domestic markets, and foreign exchange repatriation and hedging restrictions were reduced. Furthermore, the activities that foreign financial firms could undertake were greatly expanded.

The past decade--and particularly the last six to seven years--have also witnessed a significant expansion of the instruments used in international and domestic financial transactions. 1/ Many of these innovations originated in either the domestic U.S. market or in the Euro-dollar markets, and then spread to domestic financial markets in other countries. The introduction of the floating rate note in the early 1970s represented one of the first major innovations. Over time, the volume of international lending through this instrument grew to exceed the volume of lending through the syndicated loan market. The introduction in 1981 of note-issuance facilities--medium-term arrangements which allow borrowers to issue short-term notes in the Euromarkets backed by underwriting commitments of commercial banks--represented another important broadening of the choice of instruments. Currency and interest rate swaps--first undertaken in 1981 and amounting to over \$500 billion by 1986--are particularly significant, because of both their scale and their apparent availability. 2/

The range of financial instruments available in domestic securities markets has also expanded. Innovations have generally occurred in financial instruments that compete mostly closely either with bank liabilities, such as mutual funds or short-term government bills, or with bank assets, such as commercial paper.

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1/ For a detailed discussion of major innovations in instruments, see Appendix III.

2/ A more detailed discussion of swaps is provided in Appendix III.

In France, the volume of mutual fund assets quadrupled between 1982 and 1986. French banks started issuing negotiable certificates of deposits in 1985. In addition, the government made short-term treasury securities available to nonbanks and banks. Also, to complement the domestic bond market, the financial authorities opened a financial futures market (MATIF).

In the Federal Republic of Germany, the range of new instruments was extended by granting permission for zero-coupon bonds with debt-warrants, floating rate notes, certificates of deposits, dual currency bonds, and currency and interest rate swaps. In Japan, the liberalization effort centered on the creation of money market instruments. The authorities authorized negotiable certificates of deposits, removed restrictions on the interbank call and bill discount markets, and permitted repurchasing of bonds and certificates of deposit to grow. The maturity spectrum of money market instruments was broadened further with the introduction of money market certificates and of auctioned, discount, short-term government refinancing bonds. In the United Kingdom, commercial paper was introduced into domestic financial markets, while in the United States, the introduction of exchange-traded financial futures and options was noteworthy (Appendix III).

The structure of principal financial markets was also reformed, either directly or indirectly. In the United States, the New York Stock Exchange was induced in 1975 to replace fixed with negotiated brokerage commissions; and the so-called shelf registration, which allowed borrowers in U.S. securities to register a proposed issue up to one year in advance of the issue day, was introduced in 1983 by the U.S. Securities and Exchange Commission, thus allowing for a flexible response to market conditions. Furthermore, the U.S. Commodities Futures Trading Commission authorized many new types of exchange-traded futures and options contracts. Perhaps most important of all, interest rate ceilings on bank liabilities were removed. Banks were also authorized to issue money market deposit accounts and to underwrite mutual funds. In addition, geographic constraints on bank expansion were relaxed.

The U.K. authorities have undertaken a major regulatory reform and liberalization of their financial markets (the so-called "Big Bang"). The authorities induced the Stock Exchange to end a fixed schedule of brokerage commissions in favor of negotiated commissions. In addition, the Exchange's operations have been liberalized through the introduction of new trading practices and systems, and the participation of foreign institutions has been greatly expanded. Stock exchange members are now permitted to deal directly with investors (i.e., to act as agents and principals). The gilt-edged market has been reorganized along the lines of the market for U.S. government securities, i.e., a system of primary dealers served by a number of interdealer brokers.

d. Supervision and regulation of financial markets

As liberalization and innovation have swept through markets, and as the scale of cross-border financial transactions has grown, supervisors and regulators have faced greater challenges. The various risks inherent in increasingly complex financial transactions--credit risk, liquidity risk, interest rate risk, and settlement risk--have become less transparent. Furthermore, the array of new instruments has made it more difficult to prevent financial firms from exploiting explicit or implicit guarantees (of liquidity and solvency) provided by financial authorities. The response has been to strengthen supervision of financial firms, and to encourage, via the mechanism of appropriate capital requirements, a pricing of on- and off-balance sheet activities of banks in accordance with their risk, and to seek greater convergence and coordination of supervisory and regulatory efforts among various national authorities.

The disturbances in 1974 surrounding the failures of Bankhaus I.D. Herstatt and Franklin National Bank led to the formation of the Committee on Banking Regulation and Supervisory Practices (Cooke Committee), under the auspices of the Bank for International Settlements. The Committee's main objective has been to try to establish comprehensive prudential practices including, notably, practices designed to ensure that banks' foreign operations do not "escape supervision." In December 1975, the Cooke Committee endorsed a Concordat on international bank supervisory cooperation, indicating the division of supervisory responsibilities between parent and host country supervisors. The Committee also initiated contacts with offshore and regional bank supervisors.

In 1978, the BIS Governors endorsed the Cooke Committee's proposal that banks' capital adequacy should be monitored on a consolidated basis, inclusive of foreign branches and of majority-owned subsidiaries, and, where possible, minority holdings and joint ventures. 1/ Nonetheless, events such as the problems of Banco Ambrosiano Holding in 1982 indicated that there were still gaps in the supervisory net. 2/ In

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1/ For a more detailed discussion of international coordination of bank supervision see "Aspects of the International Banking Safety Net," Occasional Paper No. 17, March 1983.

2/ Since Banco Ambrosiano Holding was a bank holding company--a 65 percent controlled subsidiary--and not a bank, under Luxembourg law, the Luxembourg authorities did not have supervisory powers. The Italian authorities felt limited responsibility for foreign subsidiaries whose activities they were unable to supervise. Subsequently, consolidated supervision was required by the Italian authorities of foreign banking and financial companies controlled, either directly or indirectly through the possession of more than 50 percent of capital.

1983, a revised version of the concordat was published 1/ which examined ways of avoiding gaps in supervision that may arise as a result of inadequately supervised centers or the existence of intermediate holding companies within banking groups. By the end of 1986, consolidated supervision for purposes of capital adequacy of foreign branches and majority owned subsidiaries for capital adequacy purposes had been established among the G-5 and Switzerland. 2/

Since the emergence of widespread debt-servicing difficulties among developing countries and weaknesses in certain sectors of industrial economies during recessions in the early 1980s, there has been a coordinated effort to strengthen banks' balance sheets, reversing the downward trend that prevailed during the 1970s and early 1980s. Banks in industrial countries, except Japan, have increased their capital relative to total assets (Table 8). However, these measures are not comparable across countries due to accounting differences; the trend--including in Japan--also should be interpreted with caution due to unpublished changes in undisclosed or unrecorded reserves. While the composition of assets and definitions of capital differ, there was a growing consensus among supervisors in major industrial countries that capital adequacy requirements should converge internationally.

Two principal supervisory techniques exist for assessing capital adequacy--a gearing ratio, which is the unweighted total of all on-balance sheet items divided by capital, or a risk asset ratio, which is a risk-weighted total of on- and off-balance sheet items relative to capital. During this period, agreement was reached among supervisors on the advantages of the risk-asset approach, especially for coping with off-balance sheet risks. At end-1986, France, the Federal Republic of Germany, Switzerland, and the United Kingdom utilized a risk-asset approach, and this approach was also applied to overseas activities of

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1/ This document ("Principles for the Supervision of Banks' Foreign Establishments") was published in Appendix I of R. Williams, P. Heller, J. Lipsky, and D. Mathieson, International Capital Markets, Developments and Prospects, 1983, Occasional Paper, No. 23 (International Monetary Fund, Washington, July 1983).

2/ The Cooke Committee has also considered ways in which central banks could cooperate to provide official emergency assistance for temporary liquidity shortages in the Euromarkets. The communique of the Governors of the BIS issued in 1974 stated that

[t]he Governors ... had an exchange of views on the lender of last resort in the Euromarkets. They recognized that it would not be practical to lay down in advance detailed rules and procedures for the provision of temporary liquidity. But they were satisfied that means are available for that purpose and will be used if and when necessary.

This statement, which has been reaffirmed on a number of occasions, remains the major policy statement on the lender of last resort function for international markets.

Table 8. Capital-Asset Ratios of Banks in Selected Industrial Countries, 1978-86 1/

(In percent)

	1978	1979	1980	1981	1982	1983	1984	1985	1986
Canada 2/	3.3	3.2	3.0	3.5 3/	3.7	4.1	4.4	4.6	5.0
France 4/	2.3	2.6	2.4	2.2	2.1	2.0	1.9	2.2	2.6
Germany, Federal Republic of 5/	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.5	3.6
Japan 6/	5.1	5.1	5.3	5.3	5.0	5.2	5.2	4.8	4.8
Luxembourg 7/	...	...	3.5	3.5	3.5	3.6	3.8	4.0	4.1
Netherlands 8/	3.9	4.3	4.2	4.3	4.6	4.7	4.8	5.0	5.2
Switzerland 9/									
Largest five banks	7.8	7.6	7.6	7.4	7.3	7.1	7.1	7.8	7.8
All banks	7.8	7.6	7.6	7.5	7.5	7.3	7.4	7.8	7.9
United Kingdom									
Largest four banks 10/	7.5	7.2	6.9	6.5	6.4	6.7	6.3	7.9	8.4
All banks 11/	5.2	5.1	5.0	4.5	4.1	4.4	4.5	5.5	5.4
United States									
Nine money center banks 12/	4.7	4.5	4.5	4.6	4.9	5.4	6.2	6.8	7.3
Next 15 banks 12/	5.4	5.4	5.5	5.2	5.3	5.7	6.6	7.2	7.5
All country reporting banks 12/, 13/	5.5	5.3	5.4	5.4	5.6	5.9	6.5	6.9	7.2

Sources: Data provided by official sources; and Fund staff estimates.

1/ Aggregate figures such as the ones in this table must be interpreted with caution, due to differences across national groups of banks and over time in the accounting of bank assets and capital. In particular, provisioning practices vary considerably across these countries as do the definitions of capital. Therefore, cross-country comparisons may be less appropriate than developments over time within a single country.

2/ Ratio of equity plus accumulated appropriations for contingencies (before 1981, accumulated appropriations for losses) to total assets (Bank of Canada Review).

3/ The changeover to consolidated reporting from November 1, 1981 had the statistical effect of increasing the aggregate capital-asset ratio by about 7 percent.

4/ Ratio of capital, reserves, and general provisions, to total assets. Data exclude cooperative and mutual banks. This ratio is not the official one (ratio of risk coverage), which includes loan capital and subordinate loans in the numerator and in the denominator weights according to quality. This ratio provides the groundwork for the control of the banking activities by the Commission Bancaire (Commission de Controle des Banques, Rapport).

5/ Ratio of capital including published reserves to total assets. From December 1985, the Bundesbank data incorporate credit cooperatives (Deutsche Bundesbank, Monthly Report).

6/ Ratio of reserves for possible loan losses, specified reserves, share capital, legal reserves plus surplus and profits and losses for the term to total assets (Bank of Japan, Economic Statistics Monthly).

7/ Ratio of capital resources (share capital, reserves excluding current-year profits, general provisions, and eligible subordinated loans) to total payables. Eligible subordinated loans are subject to prior authorization by the Institut Monetaire Luxembourgeois and may not exceed 50 percent of a bank's share capital and reserves. Data in the table are compiled on a nonconsolidated basis, and as a weighted average of all banks (excluding foreign bank branches). An arithmetic mean for 1986 would show a ratio of 7.7 percent. Inclusion of current-year profits in banks' capital resources would result in a weighted average of 4.3 percent for 1986. Provisions for country risks, which are excluded from capital resources, have been considerably increased in the last year. The 1986 level of provision represents almost five times the level of 1982.

8/ Ratio of capital, disclosed free reserves, and subordinated loans, to total assets. Eligible liabilities of business members of the agricultural credit institutions are not included (De Nederlandsche Bank, N.V., Annual Report).

9/ Ratio of capital plus published reserves, a part of hidden reserves, and certain subordinated loans to total assets (Swiss National Bank, Monthly Report).

10/ Ratio of share capital and reserves, plus minority interests and loan capital, to total assets (Bank of England).

11/ Ratio of capital and other funds (sterling and other currency liabilities) to total assets (Bank of England). Note that these figures include U.K. branches of foreign banks, which normally have little capital in the United Kingdom.

12/ Ratio of total capital (including equity, subordinated debentures, and reserves for loan losses) to total assets.

13/ Reporting banks are all banks which report their country exposure for publication in the Country Exposure Lending Survey of the Federal Financial Institutions Examination Council.

Japanese banks with foreign branches. U.S. Federal regulators circulated in 1986 a proposal for a risk-asset ratio approach. Notwithstanding this progress, substantial differences remain among major industrial countries in the risk weights assigned and in the definition of capital.

In 1986 the Cooke Committee published a report <sup>1/</sup> that outlined a basic framework for supervisory reporting systems that sought to integrate off- and on-balance sheet risks. The main conclusion was that risks associated with most off-balance sheet activities--market risk, credit risk, and management risk--are not different in principle from those risks arising from on-balance sheet business. The report proposed an integrated approach to assessing a bank's risk exposure that would allow banks and supervisors to evaluate more accurately the hedging opportunities afforded by off-balance sheet transactions for on-balance sheet exposures. The report translated various types of off-balance sheet instruments into their rough "equivalent" on-balance sheet credit risks. Underwriting commitments for note issuance facilities have been assigned risk weights, of varying magnitudes, in France, the Federal Republic of Germany, Japan, United Kingdom, and Switzerland; a similar increase was proposed for the United States. Supervisors in the United States and the United Kingdom are also weighing the merits of capital weights for interest rate and currency swaps of varying maturities.

The issuance in March 1987 of a joint United Kingdom/United States convergence proposal for monitoring capital adequacy marked a significant step toward a common supervisory framework for credit risk. In June 1987, Japanese authorities announced their support, in principle, for the U.K./U.S. proposals. A common supervisory framework for monitoring capital adequacy would significantly diminish the opportunities for regulatory arbitrage by banks among the three largest international financial centers.

Supervision of banking and securities markets in the United Kingdom underwent a major reform in 1986 with the passage of the Financial Services Act. Under that Act, which became effective in January 1987, the Secretary for Trade and Industry was empowered to regulate businesses that provide financial services. These powers were in turn delegated to a private body--the Securities and Investment Board (SIB) which recognized several self-regulatory organizations (SROs) covering activities in the securities and investment field. Financial institutions undertaking a range of financial market activities may report to several SROs. The gilt-edged market is regulated by the Stock Exchange and the Bank of England. Primary dealers and interdealer brokers are required to have dedicated pound sterling capital and to be members of the Stock Exchange, although prudential supervision is carried out by

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<sup>1/</sup> "The Management of Banks' Off Balance Sheet Exposures: A Supervisory Perspective," Committee on Banking Regulations and Supervisory Practices (Basle, March 1986).

the Bank of England. Prudential supervision of deposit-taking institutions continues to be the responsibility of the Bank of England.

In the United States and Japan banking and securities institutions are separated by law as are prudential supervisory functions; whereas, in continental Europe, these business activities are carried out within the same institution and subject to a common bank supervisory framework. The separation of supervisory regimes in the United States and Japan has been maintained even as the activities of banks and investment houses have tended to blur in these markets. In addition, international activities of subsidiaries of investment houses and minority-owned subsidiaries of banks have not yet been fully integrated into the supervisory framework of major industrial countries.

In Japan, securities companies are prescribed by a Cabinet Order to meet certain minimum capital standards. Those standards were in effect from 1963 to October 1980. During that period the scale of securities business grew dramatically, so that the Ministry of Finance circulated a release among securities companies in November 1980 indicating "a desirable size of capital" which was double the existing standard and urged them to meet the new standard within two to three years. The Securities Bureau of the Ministry of Finance supervises securities companies, including their financial position, and determines whether the security company has a sound financial and revenue basis to continue stable operations.

### III. Forces Creating Change in Financial Markets

The extensive changes in financial instruments, financial institutions, and regulatory structures of the previous decade represent the competitive response of market participants (in both the private and public sectors) to a series of macroeconomic disturbances and technological advances and to the arbitrage opportunities created by differences in financial market conditions. In a number of respects, borrowers and lenders operating in international financial markets in the 1970s and 1980s were confronted with macroeconomic conditions that were less stable and more uncertain than those in the 1960s--in particular, higher and more variable rates of inflation and interest rates, greater exchange rate variability, the presence of large fiscal and external imbalances in both developing and industrial countries, and the emergence of external payments difficulties for many developing countries.

These more uncertain macroeconomic conditions led to the development of new financial instruments, which were designed to allow market participants to hedge the new risks better, as well as to arbitrage cross-country differences in financial market conditions. Floating rate notes and exchange rate and interest rate swaps, as well as futures and options markets, emerged to provide new means for hedging greater

interest rate and exchange rate variability. <sup>1/</sup> Moreover, there were, at times, strong incentives for borrowers and lenders to arbitrage cross-country differences in the returns and risks of financial investments as well as in tax structures and regulatory restrictions. In particular, residents in some countries at times found it profitable to undertake transactions with other residents of the same country through the offshore markets. This arbitrage process was facilitated by technological change, which lowered the cost of telecommunications and of data processing. In addition, activities in international markets were also stimulated by the recycling of the current account surpluses of the oil exporters in the 1970s, and the emergence of large fiscal deficits and current account imbalances in the industrial countries in the late 1970s and the early 1980s. During the late 1970s and 1980s, the pace of these structural changes in financial markets accelerated as all major countries undertook financial liberalizations designed to increase market efficiency and to adapt domestic financial structures to the new financial instruments and techniques that had emerged in other domestic and offshore markets. Supervisory practices were also adjusted to reflect these structural changes and to meet prudential concerns regarding the stability of new markets.

This section examines in more depth the forces that have created pressures for structural change in financial markets.

#### 1. Macroeconomic disturbances

In the early 1970s, the structure of the major financial markets across the larger industrial countries was quite diverse. Although these countries had shared an extended experience with sustained growth and low inflation during much of the late 1950s and 1960s (Table 9), each nation's financial markets developed largely independently of others, reflecting both economic factors and government policies. Communication and transportation costs, differences in financial and legal arrangements, and even cultural and social traditions made it costly to undertake new financial operations in different national markets. In addition, capital and exchange controls on external financial transactions in France, Japan, and the United Kingdom discouraged financial integration. In this environment of relative macroeconomic stability and of incomplete cross-country linkages between financial markets, the structure of domestic financial institutions, and the attendant regulatory arrangements, primarily reflected domestic concerns.

Nonetheless, international financial intermediation grew rapidly during the late 1950s and 1960s, as financial institutions attempted to service the needs of domestic nonfinancial firms engaged in international trade in goods and services, and as market participants attempted to arbitrage the differences between yields on financial transactions in

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<sup>1/</sup> These instruments could also be used to take on additional risk in order to earn a higher return.

Table 9. Macroeconomic Developments, 1968-86

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
(In billions of U.S. dollars)																			
I. Current Account Balances																			
Industrial Countries	4	4	6	9	6	13	-22	9	-10	-15	15	-23	-60	-19	-22	-20	-58	-51	-20
Germany, Fed. Rep. of	...	...	...	1	1	5	10	4	4	4	9	-6	-16	-5	4	4	8	15	35
Japan	1	2	2	6	7	—	-5	-1	4	11	16	-9	-11	5	7	21	35	49	86
United States	1	—	2	-1	-6	7	2	18	4	-15	-15	-1	2	7	-9	-46	-107	-116	-141
Developing Countries	-10	-10	-16	-15	-6	—	39	-6	9	2	-35	6	30	-48	-87	-64	-33	-24	-46
Oil-exporting countries	-2	-2	-1	1	3	6	67	32	36	25	-1	57	104	50	-10	-22	-7	4	-32
Non-oil-developing countries	-8	-8	-15	-16	-9	-6	-28	-38	-27	-23	-34	-50	-74	-98	-77	-42	-26	-27	-14
Countries with debt-servicing problems	-7	-7	-11	-12	-9	-6	-9	-24	-22	-23	-34	-35	-43	-72	-67	-23	-10	-6	-22
(In percent)																			
II. Real GNP growth																			
Industrial countries	5.2	4.6	2.7	3.5	5.1	6.0	0.6	-0.5	4.9	3.7	4.2	3.4	1.3	1.4	-0.4	2.7	4.7	3.0	2.4
Developing countries	5.1	8.3	7.9	6.6	5.9	7.7	5.2	4.9	5.0	6.2	5.1	4.3	3.4	1.6	1.6	1.6	4.1	3.3	4.0
Oil-exporting countries	9.1	12.4	11.8	10.0	11.1	10.8	5.9	5.9	8.3	6.9	1.4	2.4	-1.1	-1.3	0.1	-1.2	0.2	-0.4	0.9
Non-oil-developing countries	4.5	7.6	7.2	6.0	4.9	7.1	5.0	4.7	4.2	6.0	6.1	4.8	4.6	2.5	2.1	2.5	5.4	4.5	5.0
Countries with debt-servicing problems	6.6	6.5	4.7	6.8	6.9	7.9	6.7	3.3	5.7	5.3	4.1	6.1	6.1	0.1	-1.0	-2.8	3.6	3.5	4.4
(In percent)																			
III. Inflation 1/																			
Industrial countries	3.9	4.8	5.6	5.2	4.6	7.7	13.1	11.0	8.2	7.8	7.5	8.0	9.2	8.7	7.2	4.9	4.2	3.8	3.4
Developing countries	5.7	5.5	6.2	7.0	8.3	14.6	20.6	20.5	22.0	19.9	17.8	25.8	29.9	23.6	23.8	30.1	37.9	39.0	24.1
Oil-exporting countries	8.7	6.9	4.7	5.4	4.4	11.6	16.4	19.4	16.8	11.5	6.5	26.2	29.7	11.1	1.4	2.2	8.2	3.0	-5.8
Non-oil-developing countries	5.3	52.9	6.5	7.3	9.1	15.3	21.5	20.7	23.2	22.1	21.1	25.7	30.0	27.5	31.9	40.8	49.1	52.8	35.0
Countries with debt-servicing problems	11.7	10.3	11.6	13.6	18.6	27.9	34.9	47.2	66.5	49.7	42.5	47.6	57.0	57.1	67.6	105.8	134.0	151.3	84.3

Source: International Monetary Fund, International Financial Statistics.

1/ As measured by the percentage change in the GNP deflator.

various markets. The offshore (Eurocurrency) markets expanded rapidly, in response both to attempts to evade certain financial restrictions imposed by the authorities and to the need for international financial intermediary services. The decisions by the United Kingdom to place restrictions on the use of sterling for financing third country trade (in 1957), and by the United States to impose a penalty (interest equalization tax) on purchases by U.S. residents of securities issued by foreigners (in 1963), encouraged borrowers to seek financing in the Eurocurrency markets.

Financial systems have been forced since the early 1970s to adapt to increased uncertainty about macroeconomic conditions, and to the need to finance large fiscal and current account imbalances in many countries. The greater uncertainty about macroeconomic conditions reflected the emergence of a series of historically large and unanticipated shocks to the international economy. The abandonment of the Bretton Woods system of fixed exchange rates was accompanied by a sharp expansion of cross-border financial flows and by the increased variability of nominal and real exchange rates--a factor that was to continue, albeit to varying degrees--throughout the floating rate period (Chart 1). Moreover, the uneven pattern of growth and recession in economic activity that was evident in the 1970s and 1980s may have further contributed to uncertainty about future developments. 1/

Inflation in the 1970s was higher and more variable than in the 1960s. 2/ In the early 1980s, nominal and real interest rates also reached levels not experienced in most industrial countries during much of the post-World War II period. The scale of the debt-servicing difficulties encountered both by many developing countries and by interest-sensitive sectors of major industrial countries, was also outside the range of experience since the 1930s.

Taken together, these developments implied a fundamental adverse shift in the degree of macroeconomic instability in comparison with the late 1950s and 1960s. Since the instruments and financial arrangements in the major industrial countries were developed during periods of lower inflation and more stable conditions, immediate pressures were created for adapting instruments, institutions, and regulations.

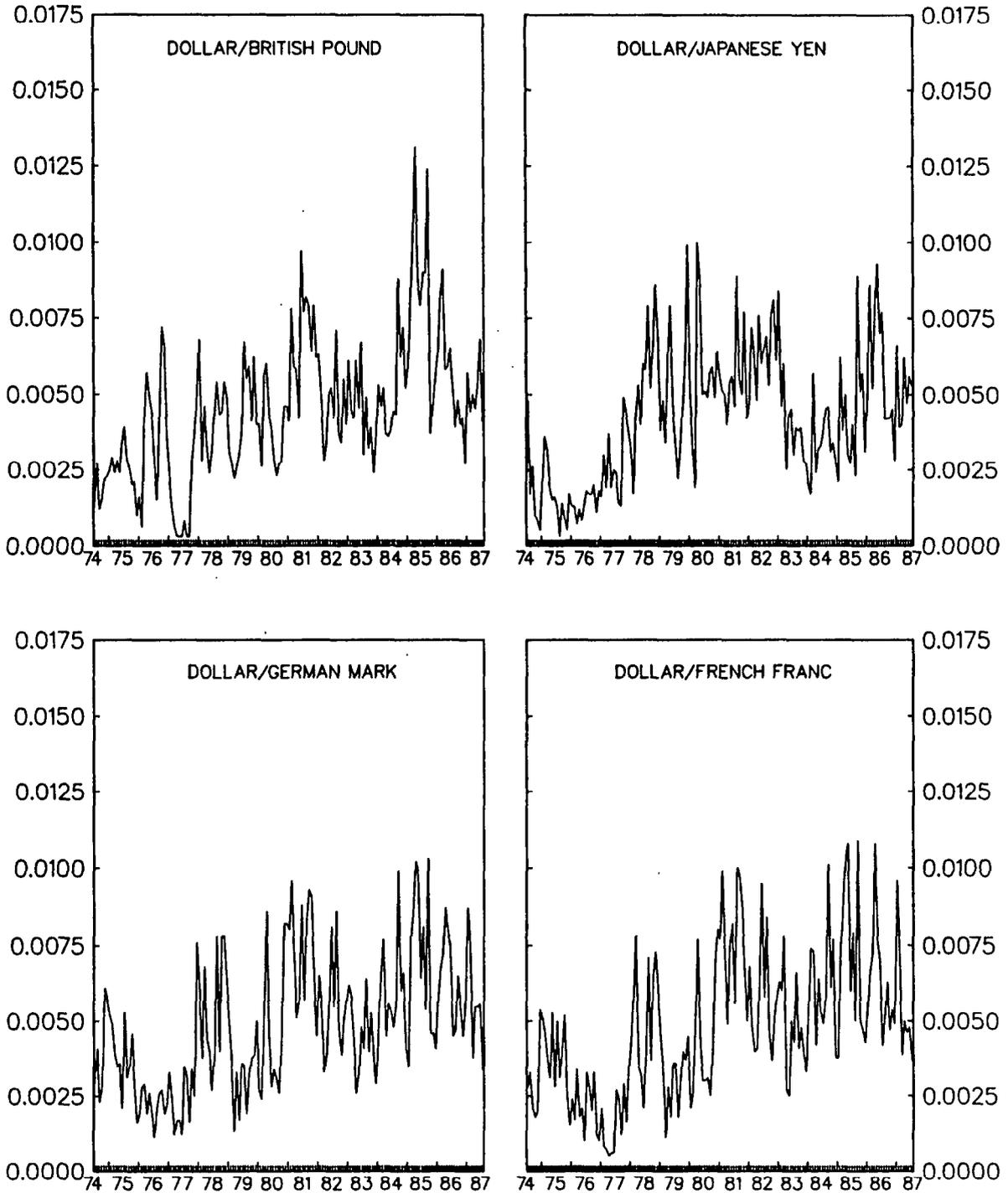
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1/ The average rate of growth in the industrial countries fell from 4.8 percent per annum in the 1960s, to 3.3 percent and 2.3 percent in the 1970s and the period 1980-86, respectively. In contrast, the variability of GNP growth rates (as measured by the variance) was ten times as high in the 1970s and 1980s (4.1 percent) as in the 1960s (0.4 percent).

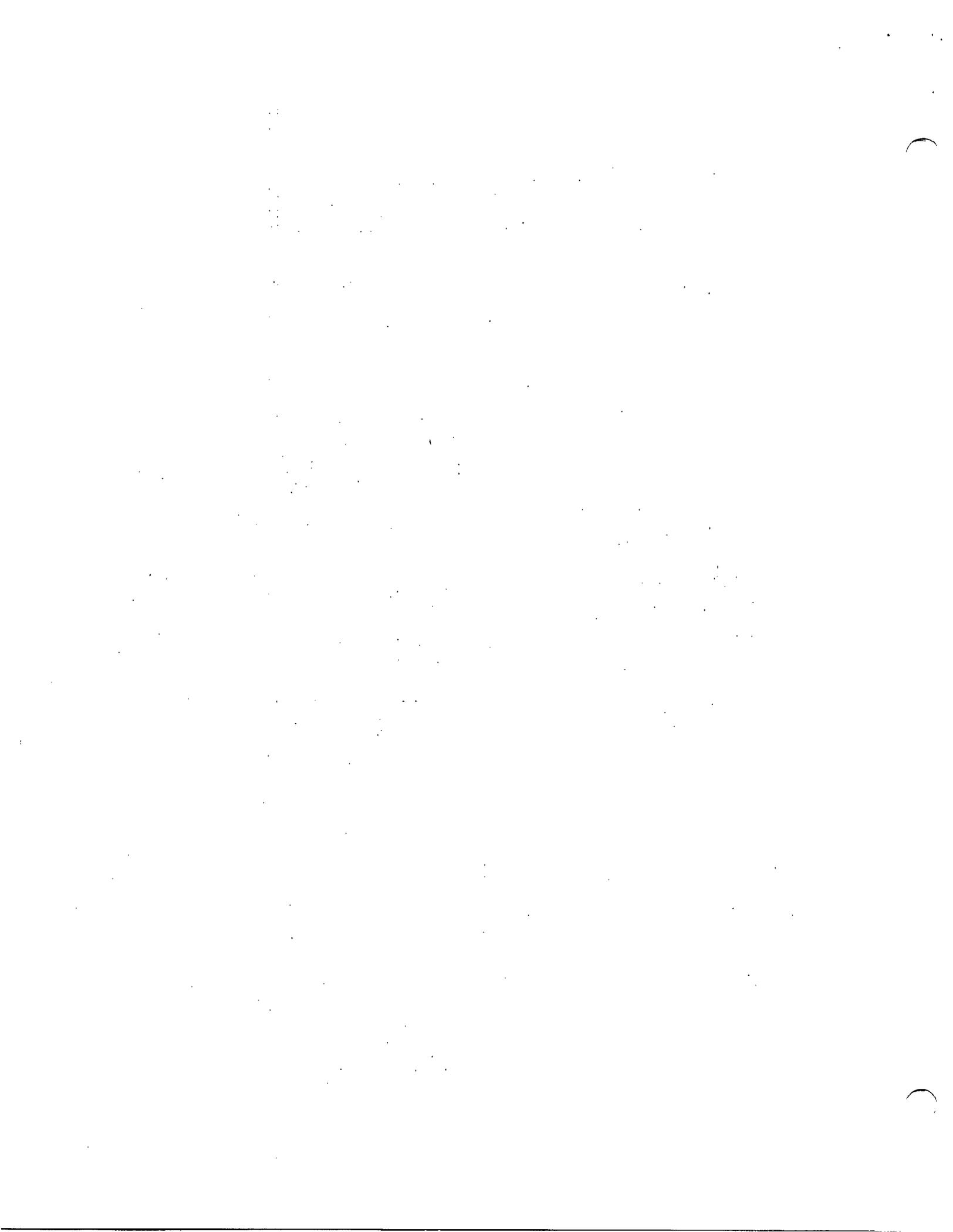
2/ The average rate of inflation in the industrial countries in the 1960s was 3.1 percent per annum but rose to 7.9 in the 1970s before declining to 5.0 percent in the period 1980-86. The variance of inflation rates also increased from 0.6 percent in the 1960s to 6.7 percent in the 1970s, before declining to 5.5 percent in the 1980s.

CHART 1

# MONTHLY AVERAGES OF DAILY PERCENTAGE CHANGES ON U.S. DOLLAR/NATIONAL CURRENCY EXCHANGE RATE LEVELS



Source: IMF.



While these macroeconomic disturbances stimulated changes in financial instruments and institutions, they had a more diverse effect on the level of activity in financial markets. Higher and more variable rates of inflation, especially in the late 1970s, made holding financial assets less attractive. Moreover, the sharp rise in interest rates in the late 1970s and early 1980s created large capital losses for holders of long-term, fixed interest rate securities. However, the level of activity in international financial markets was sharply stimulated by sectoral imbalances that emerged as a result of the macroeconomic shocks. The recycling of the current account surpluses of the oil-exporting countries associated with the oil price increase of 1973 and 1979 was accomplished primarily by private rather than public sector intermediaries. Most of the reserves accumulated by oil-exporting countries as a result of current account surpluses were initially held as deposits in banks in offshore financial markets and in the major industrial countries (Table 9). During the same period, the current account deficit of the industrial countries and that of the non-oil developing countries rose sharply. Lending from banks and other private creditors financed nearly half of the current account deficits of the non-oil developing countries.

In the early 1980s, sharp changes in access to these markets for many developing countries also had a major impact on the scale and distribution of credits through these markets. For countries with external payments difficulties, most additional credits from private financial markets were obtained through new money packages accompanied by Fund-supported adjustment programs. In contrast, flows between borrowers and lenders in the industrial countries accelerated sharply, with much of the growth being in the securities markets as opposed to bank lending. In addition, the emergence of large fiscal deficits in some major industrial countries in both the mid-1970s and early 1980s led over time to sharp increases in the stocks of government securities outstanding. In order to market those securities, governments removed restrictions on purchases by both the domestic nonfinancial sector (especially of short-term securities) and foreigners. In some countries, foreign purchases also began to account for an increasingly larger share of the sales of new issues.

## 2. Technological advances

The ability of financial institutions to adjust to these changes in macroeconomic conditions was influenced profoundly by innovations in telecommunications and data processing. New developments in such areas as computer technology, computer software, and telecommunications permitted more rapid processing and transmissions of information, completion of transactions, and less costly confirmation of payments. These advances made possible 24-hour a day trading by linking exchanges in different time zones. Moreover, information about financial conditions in all major markets became much more readily available. Such changes basically enlarged the set of markets in which financial institutions could provide intermediary services. Since more

institutions could efficiently service the various markets, competitive pressures naturally increased. In addition, improved computer technology made possible new hedging instruments, including options and financial futures, whose initial pricing required the solution of complex mathematical and statistical problems.

3. Differences in regulatory, supervisory,  
and tax structures in the mid-1970s

While macroeconomic shocks, payments imbalances, and technological changes provided the principal stimulus for the rapid expansion of activity in international financial markets during the 1970s and 1980s, attempts to arbitrage financial conditions (including regulatory and institutional differences) between the offshore and domestic markets of the major industrial countries often played a role in determining the scale and composition of the flows between particular markets. In general, financial structures in the major industrial countries differed most in terms of: (1) regulations concerning yields on financial instruments, the activities and location of financial institutions, and access to markets; (2) prudential supervision of the financial sector; and (3) tax, legal, and disclosure systems. The liberalizations of domestic financial markets were to play an important role in removing many of these differences.

a. Regulations on yields, activities, and market access

In the mid-1970s, interest rate ceilings were important constraints in France, Japan, and the United States, but were not present in the Federal Republic of Germany or in the United Kingdom. In Japan, interest rates on most financial assets were closely linked to the official discount rate charged by the Bank of Japan on discounts of commercial bills and on loans secured by eligible paper. The ability of Japanese borrowers and lenders to evade those interest rate ceilings was constrained by the limited availability of short-term money market instruments and by a comprehensive system of exchange controls. However, the need to sell larger volumes of government securities when bond-financed central government fiscal deficits emerged in the mid-1970s, put considerable pressure on the system. As fiscal deficits created alternative portfolio instruments and exerted upward pressure on free market interest rates, strong incentives were created to shift away from assets with low fixed yields.

In the United States, statutory restrictions (Regulation Q) prohibited the payment of interest on demand deposits and set interest rate ceilings on savings and time deposits at depository institutions. As inflation and market interest rates rose in the late 1960s and early 1970s, relative to the Regulation Q ceiling rates, there were repeated episodes of withdrawal of deposits (disintermediation) from financial institutions, with the result that the availability of credit (especially for housing) was often sharply reduced. Depositors sought higher yields through direct purchases of U.S. government securities and money

market funds. In addition, large borrowers and lenders turned to the Eurocurrency market to obtain additional funds and to earn a market return on their financial assets.

Restrictions on the products, activities, and location of financial institutions differed significantly between financial systems with universal banks and those with more segmented markets and activities. In the Federal Republic of Germany and in Switzerland, banks were allowed to undertake both commercial and investment banking activities, and they have extensive branch networks in their domestic economies. In contrast, commercial banks in the United States and Japan were more restricted, especially with respect to investment banking activities. In the United States, the Banking Act of 1933 (frequently referred to as the Glass-Steagall Act) prohibited commercial banks from underwriting either nonpublic bond issues or revenue bonds of state and local governments. In addition, under the McFadden Act of 1922, national banks in the United States could branch no farther in a particular state than was allowed for the state chartered banks. In a number of states, no branching was allowed. In Japan, commercial banking was formally separated after World War II from underwriting and trust business by Article 65 of the Japanese Securities Law. However, Japanese banks were legally permitted to branch nationwide.

In some cases, restrictions on activities limited the ability of certain types of financial institutions to attain a diversified portfolio. This lack of diversification at times made these institutions vulnerable to geographic or sector-specific shocks. Where restrictions on activities or branching existed, some financial institutions attempted to undertake restricted operations in the Eurocurrency markets (unless prevented by capital controls) or through domestic operations under alternative corporate forms.

During the early and mid-1970s, the maintenance of extensive capital controls and limitations on entry of foreign financial institutions into the domestic market were part of the effort to isolate domestic financial systems from external developments. As noted earlier, France, Japan, and the United Kingdom placed a variety of controls on capital flows, especially those involving short-term instruments.

The ability of foreign institutions to enter domestic markets was influenced by a number of factors. Communications and transportation costs, differences in legal, cultural, and social structures, and difficulties in evaluating local markets worked against the establishment of foreign branches and subsidiaries. In addition, entry of foreign institutions was sometimes restricted through controls on chartering and licensing, through restrictions on the activities that these institutions could undertake, and through constraints on their access to certain markets.

There was nonetheless a movement toward a national treatment of foreign financial institutions (especially banks). Foreign financial

institutions became subject to the same regulations as comparable domestic institutions. For example, in the United States, the International Banking Act of 1978 provided for a uniform national treatment of foreign banks. <sup>1/</sup> In this situation, the number of foreign banks in the United States expanded rapidly, rising from about 150 banks in the mid-1970s (with \$40 billion in assets) to 369 banks (with \$223 billion of assets) by 1981. They brought new competitive pressures to the major financial centers in the United States. A number of other countries have also expanded the scope of activities, especially in the stock exchanges, for foreign financial institutions.

In the United Kingdom, foreign banks played active roles in both the London Eurocurrency market and in the domestic markets. As the Eurocurrency market expanded, the number of foreign banks either directly or indirectly represented in London grew from 138 in 1969 to 335 in 1975. In the Federal Republic of Germany, foreign banks could compete with domestic banks in most areas, but they were restricted in their ability to lead manage securities issues. Foreign banks in Japan represented only about 3 percent of total commercial bank assets in the mid-1970s, and their primary focus was on international rather than domestic banking. These banks were not allowed to branch; they were restricted in their solicitation of yen deposits, and their access to the discount facilities of the Bank of Japan was sharply limited.

b. Prudential regulation and supervision

Prudential regulations, the supervision of financial institutions, and the taxation of financial market activities and income were diverse in the mid-1970s. As noted earlier, the presence of exchange controls and transaction costs had limited the interdependence of the major financial markets during the 1950s and 1960s, and thereby contributed to a diverse mix of disclosure and accounting standards, legal arrangements, and institutions that prevailed in the major domestic financial systems. Prudential regulations and supervisory practices were primarily focused on domestic activities of national institutions. The oversight of banks' international operations lagged behind the growing integration of banking markets.

In some cases, prudential regulations created incentives for institutions to adjust the location or types of their activities. Some financial institutions used off-balance-sheet activities (e.g., guarantees or currency swaps) or operations in the external markets to minimize the costs of satisfying capital requirements. In particular, to the extent that the operations of branches or subsidiaries in the

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<sup>1/</sup> Foreign banks were made subject to federal supervision in a manner similar to U.S. domestic banks, required to hold minimum reserves, faced with Regulation Q ceilings, required to have deposit insurance if they accepted retail deposits, and confronted with new limitations on branching.

Eurocurrency markets were not consolidated, booking business offshore often reduced the effective level of capital needed for the firm as a whole.

c. Tax, legal, and disclosure systems

Differences between the taxation of financial transactions and income from financial assets often led to a situation where financial transactions would take place (be "booked") in a given market or country solely to reduce a tax liability. The withholding tax typically levied in domestic markets on payments of interest to foreign holders of domestic securities or deposits also stimulated the issuance of Eurobonds (not subject to any withholding tax) and acquisition of Eurocurrency deposits. In addition, transfer taxes on security transactions (such as existed in the Federal Republic of Germany and Switzerland) discouraged the use of domestic money market instruments and encouraged the use of external money markets.

Accounting standards also differed significantly across the major countries. One key difference, for example, was associated with the extent of "hidden" reserves (typically associated with below market valuation of assets) in the accounts of financial and nonfinancial institution. In countries such as the Federal Republic of Germany, Switzerland, and Japan, these reserves were more important than in other countries. Unreported charges against, and additions to, such reserves made it difficult to compare profit and loss statements across countries.

Disclosure requirements were also diverse. In part, this difference reflected alternative philosophies about the types of borrowers that should be allowed to access financial markets. One view was that market participants should be allowed to take on whatever risks (at a market related price) that they desired so long as there was full disclosure of the relevant financial information about the borrower's condition. The alternative view was that market access should be limited to more creditworthy borrowers (i.e., through merit-regulation often imposed by the market); with the quality of the borrower being more assured, less detailed disclosure could be required. In the mid-1970s, the disclosure requirements established by the U.S. Securities and Exchange Commission (SEC) came closest to the first view. In contrast, borrowers in the Eurobond markets were traditionally limited to the more well known firms, banks, and governments whose credit standing was considered sufficient. In line with the second view, that market, therefore, required less detailed disclosure, although to some degree additional disclosure existed when bonds were also issued in domestic markets.

4. Impact on financial structures

Innovations, liberalizations, and technological advances of the 1970s and 1980s have made the major domestic financial markets and the

Eurocurrency market more homogeneous in a number of respects and sharply increased the degree of integration, although such integration still remains incomplete. Financial institutions in some countries continue to face more significant domestic restrictions on certain of their activities (e.g., underwriting) than in the offshore or in other major markets. Moreover, accounting standards and disclosure requirements still remain quite diverse across the major markets. Different tax structures and contrasting legal arrangements also limit the arbitrage of differences in risk adjusted yields across countries. In some situations, taxes on financial transactions, interest income, and profits as well as legal costs and complexities can inhibit otherwise profitable financial intermediary transactions or the use of certain types of instruments.

Economic agents within each major economy also may have different sensitivities to the cross-border and cross-currency risks and returns associated with international financial intermediation. Thus, as the share of financial flows that passes through these agents changes, the types of instruments, as well as their maturity and currency composition, could be influenced by their varying portfolio preferences. While the markets for short-term, highly liquid assets (e.g., government treasury bills or Eurocurrency deposits denominated in different currencies) are closely linked, the markets for long-term, less liquid instruments have not been as completely arbitrated because it has been more difficult and costly to hedge against long-term exchange rate and interest rate risks. During the past decade, technological advances and instrument innovations (e.g., options, futures, and swaps) have reduced the cost of hedging these risks. Consequently, the integration of medium-term debt instruments has increased.

In summary, three major changes in the institutional and regulatory environment of international financial markets have been evident. First, the authorities have placed greater reliance on measures to promote competition both within and across major markets as a means of obtaining greater efficiency--in the sense of reducing the cost of financial intermediary services--within financial systems. Competition has been enhanced by the weakening of capital controls and restrictions on the entry of foreign firms into domestic markets. In addition, most industrial countries have also undertaken extensive domestic financial liberalizations focused on either removing or weakening restrictions on interest rates that could be paid on financial institution deposit liabilities, the use of instruments, and access to markets. 1/

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1/ During these reforms, tax policies have also been modified to some extent to avoid creating incentives for undertaking offshore activities. Most major industrial countries have removed withholding taxes on foreign-held domestic securities in order to reduce the tax advantage associated with using Eurobonds as opposed to domestic bonds.

The reductions in these restrictions have enabled domestic financial institutions to compete more readily in nontraditional markets. This liberalization has created a tendency toward the emergence of more universal financial institutions. Such institutions have had the ability to achieve a better diversification of activities and a broad range of financial services and funding options. While there are still important specialized or sector-specific financial institutions, the viability of these institutions increasingly depends on economic factors (e.g., market expertise and economies of scale) rather than official restrictions on entry or competition.

A second major change in the structures of financial markets has been the emergence of a broad range of financial instruments that are now widely used in the major financial markets. One aspect of competitive behavior in the Eurocurrency market has been a willingness to try a variety of novel techniques and instruments in order to gain additional business (Appendix III). The more successful instruments (e.g., syndicated loans, floating rate notes, Eurocommercial paper, and interest rate and exchange rate swaps) have had characteristics closely tailored to the portfolio preferences of borrowers and lenders and have been introduced in other domestic markets.

A third major change in the structure of international financial markets has been the evolution of supervisory policies in response to the increased internationalization of financial transactions. Some of the most significant changes in this area have related to concerns about greater credit and market risks and the changing patterns of activities undertaken by different types of financial institutions.

Changes in institutional structure, regulations, instruments, and supervisory practices are likely to continue. While the pace of structural change in international markets in 1986 and 1987 slowed somewhat from that evident during the early 1980s, the major markets are continuing to become more closely integrated. The impetus for cross-border finance continues to be provided by macroeconomic developments and financial factors. Moreover, the further relaxation of controls on cross-border financial flows, the spread of new instruments and techniques, and the continuing effects of earlier innovations and deregulation measures provide new opportunities for cross-border lending and borrowing. <sup>1/</sup> In addition, the greater depth, efficiency, and the regulatory and fiscal advantages of some external financial markets will also create incentives for certain flows between domestic savers and investors to be intermediated through external markets.

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<sup>1/</sup> In some countries, there is continuing discussion of removing certain remaining restrictions on financial activities or market access. In the United States, for example, the legal separation of commercial and investment banking is being examined by the authorities.

A relatively new factor encouraging further internationalization of financial markets has been the establishment of a closer linkage through common trading and settlement procedures. A formal linkage has been achieved for several financial futures contracts which can be traded and settled on several exchanges. In addition, many larger firms have globalized their trading operations. Thus, disturbances in any one market are immediately "traded into" the market prices of such globally-traded securities. The continuing improvement in international settlement and clearing procedures can be expected to contribute to the integration of national markets.

#### IV. Policy Implications

Continuing structural change in the financial markets carries important implications for the policy interests of the Fund. These include the allocation of savings and investment among countries; the formulation and effectiveness of monetary, exchange rate, and fiscal policies; the Fund's surveillance over exchange rate and other macroeconomic policies (as well as the specification of appropriate indicators); the adequacy of international liquidity; the international coordination of financial supervisory and regulatory policies; and the stability of the international monetary system. This section examines those issues most clearly related to the Fund's activities.

##### 1. Resource allocation, market access, and market stability

Throughout the 1970s and 1980s, international financial markets have played an important role in the cross-country intermediation of savings and investment, external payments, and fiscal imbalances. Although official grants and loans to certain developing countries have been substantial during this period, private flows often have been the main channel through which resources have been reallocated among countries. In this situation, access to the financial markets, as well as the efficiency and stability of the financial institutions comprising these markets, have strongly influenced the scale and direction of the resource transfers that took place. Moreover, the institutional structure of international financial markets (e.g., the reliance on syndicated bank loans in the 1970s) and the portfolio preferences of borrowers and lenders influenced not only the composition and direction of capital flows but also the potential vulnerability of those flows to financial market disturbances.

The efficiency of the allocation of resources occurring through private financial markets depend upon the extent to which market prices adequately reflect the relative scarcity of capital in alternative uses

as well as the risks associated with these activities. <sup>1/</sup> If financial instruments are appropriately priced, then credit will be allocated in a productive manner. However, some observers have expressed concerns that international markets may not properly allocate resources due to incorrect pricing decisions by market participants, the presence of official guarantees and regulations, or macroeconomic factors (e.g., high and variable rates of inflation). For example, they have argued that market participants sometimes are too short sighted in evaluating and monitoring credit risks associated with tradable asset-backed securities, because they assume that these instruments will be held for only a short period and could be sold before problems emerge. Recent large trading losses have also suggested to some observers that financial institutions have not yet adequately managed the risks involved in the activities of their traders, and, at times, this has resulted in excessive price volatility. It has also been argued that official regulations (e.g., interest rate ceilings) and guarantees (e.g., deposit insurance or availability of a lender of last resort) could influence the pricing of certain financial instruments (e.g., bank loans and large bank certificates of deposits). Macroeconomic developments may also make it difficult to evaluate the risks associated with holding particular financial instruments. The possibility of high and variable rates of inflation, unanticipated exchange rate movements, and sharp changes in interest rates can create considerable uncertainty about the ultimate returns that would be realized on holdings of financial assets. A key and still unresolved issue in the analysis of financial markets has been the extent to which these factors actually distort market prices or whether "efficient" market prices prevail (i.e., those that reflect all the relevant current information as well as the fundamental determinants of the demand and supply of credit).

During the 1980s, changes in access to international financial markets, financial innovations, and financial liberalization (along with other macroeconomic developments) exerted important effects on the distribution of savings and investment across countries. In the major domestic and offshore financial markets, those borrowers regarded as creditworthy were generally able to obtain credit at highly competitive terms. In contrast, most developing countries that experienced

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<sup>1/</sup> Two concepts of "efficiency" have at times been employed in evaluating the allocation of resources produced by financial markets. The most general concept (used above) involves the allocation of capital to activities that yield the highest risk-adjusted returns. An alternative concept (from capital market analysis) is that markets will efficiently allocate resources if market prices fully reflect all the relevant current information as well as the fundamental determinants of supply and demand. In the absence of market distortions, these concepts would be in general technically identical. However, distortions (e.g., due to official ceilings on some interest rates) might cause the two measures of efficiency to diverge. Unless noted, the more general concept of efficiency is used in this paper.

debt-servicing problems in the 1980s faced no spontaneous access to private financial markets. While private financial markets played a major role in financing payments imbalances in many developing countries in the 1970s, their recent financing requirements have been met largely by official flows, limited nondebt-creating flows (e.g., foreign direct investment) and new money packages accompanying Fund-supported adjustment programs. The difficulties of the developing countries in obtaining external finance of their current account imbalances stands in sharp contrast to the ability of some major countries to obtain external financing of their fiscal deficits. However, the reduced access of many developing countries has not been related principally to the nature of new financial instruments or regulatory considerations since some developing countries regarded as having a high credit standing have been able to use those new instruments in international securities markets.

To date, many of the structural changes in international financial markets have had mainly indirect effects on the developing countries with recent debt-servicing problems. <sup>1/</sup> For example, the efficiency of the foreign exchange reserve management practices of developing (as well as developed) countries have been improved by the availability of new reserve assets, more competitive rates of return on these assets, and new hedging opportunities. Moreover, these countries have benefited from the innovations in instruments and financing techniques that have allowed multilateral development banks to reduce their borrowing costs. In addition, the payment of market-related yields on many types of deposit liabilities of the financial institutions in major countries, as well as the introduction of new types of investment instruments, may have increased the relative attractiveness of external assets for residents of developing countries.

Moreover, the emergence of a secondary market for the external bank debt of developing countries has affected both banks and debtor countries. Although the volume of transactions in this secondary market has been relatively low (it is estimated to be at an annual rate of about \$10 billion in 1987), the discounts prevailing in this market were reportedly one factor (as well as the desire to strengthen a bank's position relative to its competitors) influencing decisions regarding provisioning for loan losses undertaken in 1987 by banks with large exposures to countries experiencing payments difficulties.

The restoration of access of many developing countries to international financial markets is likely to depend not only on the types of adjustments undertaken by these countries but also by the response of financial institutions in international markets to provisioning

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<sup>1/</sup> The use of floating interest rate syndicated loans was an example of an earlier direct effect. However, for those developing countries with access to international bond markets, the recent disturbances in the floating rate note market could have an adverse effect on their ability to fund in that market.

requirements, regulatory constraints (e.g., capital requirements), and tax structures. These financial market considerations will influence both the willingness of financial institutions to undertake new lending and the types of instruments that can best be used to establish access. Since the issues surrounding the current debt situation and alternative approaches for dealing with the problem are being addressed in a forthcoming Executive Board paper ("Issues in Managing the Debt Situation"), the focus of the remainder of this section will be on whether recent changes in international markets have affected the stability of international markets and their ability to provide efficient financial intermediary services.

While the recent innovations in financial instruments and techniques in international financial markets have generally been viewed as increasing market efficiency--in the sense of lowering the cost of delivering financial services--concerns have nonetheless been expressed that they may also have adversely affected the stability of the financial system. In particular, there is the issue of whether the stability of liberalized financial markets is adequately ensured by the maintenance of appropriate macroeconomic policies or whether other policy steps are required. <sup>1/</sup> As noted earlier, it has been argued that the pricing of assets might not appropriately reflect the underlying risks, and this could lead to excessive risk-taking, which may involve both liquidity and credit risks. Liquidity risks arise when a borrower is unable to obtain the necessary funds to meet its obligations as they fall due. For example, banks have underwritten or provided back-up facilities, and questions have been raised whether the pricing or the fees charged have reflected the underlying liquidity risks. Credit risks arise when a borrower is unable to meet its obligations in full. Margins on swap transactions have been viewed by some as providing limited compensation for the potential credit risks.

These concerns about excessive risk taking and asset market volatility reflect a desire to avoid the disruptions that can be generated by financial crises. The fear is that, once a crisis starts, contagion may result in the failure of otherwise solvent institutions. Moreover, with the growing integration of major financial markets, it has been argued that cross-border and cross-currency transactions could intensify any crises, especially if lines of credit in the interbank market were restricted suddenly. Such disturbances could have their greatest potential for damage if they impeded the operation of the payments system. In particular, a sharp contraction of interbank lines of credit could inhibit the ability of the private clearing systems (e.g., the Clearing House Interbank Payments System (CHIPS)) to settle financial transactions, especially those relating to the clearing of security transactions across international markets.

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<sup>1/</sup> This is considered in Bank for International Settlements, Recent Innovations in International Banking, April 1986.

The concerns about the overall stability of the financial system, including maintenance of the payments system and protection of depositors and investors, provide the basic rationale for macro-prudential policies that include not only the central bank's lender of last resort function but also supervision of financial institutions. The changes in international financial markets have introduced new complexities into the formulation of macro-prudential policies. The issues created by structural changes in financial markets for the international coordination of the supervision and regulation of financial institutions are discussed in the last section of this paper. The provision of lender of last resort services (or in some countries of public sector deposit insurance) has also been affected by these structural changes. While no central bank provides a detailed description of the circumstances under which it will provide emergency liquidity assistance, the growing integration of financial markets, the expanded presence of foreign financial institutions in domestic markets, and the blurring of the distinctions between banks and other financial institutions have raised additional questions about which institutions or markets may have to be supported during a crisis period and by whom. In particular, the close linkages between major short-term money markets (especially to the interbank markets) makes it more difficult to confine the effects of a major domestic bank or nonbank financial institutional failure solely to the domestic market. Moreover, the extensive growth of international financial markets implies that the scale of emergency assistance needed (such as in the period surrounding the difficulties of the Continental Illinois Bank) could be significantly larger than in earlier periods.

One difficulty in providing emergency assistance is that knowledge of such potential assistance might encourage less prudent policies on the part of banks or other financial institutions, i.e., the problem of moral hazard. <sup>1/</sup> In particular, troubled institutions could engage in high-return and high-risk activities in the hope of earning sufficient profits to avoid failure. Effective market discipline (through proper disclosure and reporting requirements) and prudential supervision are essential for preventing such situations from arising.

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<sup>1/</sup> The nature of this problem was stated clearly by Governor Henry Wallich of the Federal Reserve in testimony to the U.S. Congress:

There are dangers in trying to define and publicize specific rules for emergency assistance to troubled banks, notably the possibility of causing undue reliance on such facilities and possible relaxation of needed caution on the part of all market participants. Therefore, the Federal Reserve has always avoided comprehensive statements of conditions for its assistance to member banks. Emergency assistance is inherently a process of negotiation and judgment, with a range of possible actions varying with circumstances and need.

## 2. Formulation and effectiveness of macroeconomic policies

The growing integration of international financial markets has affected both the formulation and effectiveness of macroeconomic policies, especially monetary and exchange rate policies and the transmission of macroeconomic conditions among countries. 1/ In general, an increase in the degree of interdependence between countries tends to increase the effects of a country's policy instruments on the other countries relative to their effects on the domestic economy. 2/

Financial market interdependence has especially important implications both for the formulation of national monetary policy and the coordination of such policies across countries. In the major industrial countries, financial liberalizations, the emergence of new financial instruments, and the removal of capital controls have been viewed as affecting both the linkages between traditional monetary policy instruments and the level of activity and prices in the domestic economy and the transmission of the effects of monetary policy across countries. The changes in financial structure may have made the timing, incidence, and ultimate impact of a given change in monetary policy more difficult to predict.

In the mid-1970s, the effectiveness of restrictive monetary policies in some countries at times relied on rationing the credit available to certain sectors of the economy (e.g., consumer credit and housing). This typically involved either direct limits on the expansion of bank credit or the presence of ceiling interest rates on deposits that resulted in withdrawals of deposits as market interest rates rose relative to the ceiling rates. However, the removal or weakening of interest rate ceilings and the availability of deposit liabilities bearing market related interest rates helped stem such outflows of funds from depository institutions. Moreover, the removal or weakening of capital controls allowed many borrowers to access external financial markets as an alternative source of credit. The channels through which

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1/ This section draws, in part, on discussions of the implications for monetary policy of changes in international financial markets that have appeared in earlier International Capital Markets reports.

2/ There is an extensive theoretical and empirical literature on the cross-country effects of macroeconomic policies under different assumptions regarding the degrees of integration in both the goods and financial markets. For an economy closely integrated with other economies, the impact of a change in a policy instrument is more likely to spill over into other economies through both goods and financial market linkages than for less closely integrated economies. However, there has been relatively little analytical (especially empirical) work on the issue of how the effectiveness of macroeconomic policies (especially monetary policy) is affected during periods when the degrees of market integration and the structure of financial markets are undergoing change.

monetary policy affects the economy have thus tended to shift from those associated with limitations on the amount of credit toward those which relied on price (interest rate and exchange rate) adjustments. As a result, a higher interest rate may now be associated with a given degree of monetary restraint.

The growing integration of major financial markets also has been associated with increased sensitivity of capital flows to interest rate differentials and anticipated changes in exchange rates. For some countries, the exchange rate has thus become a relatively more important channel through which monetary policy effects are transmitted both to the domestic and world economies. In comparison with earlier periods, the growing responsiveness of capital flows and exchange rates to domestic policy actions implies that in these countries the effects of such actions tend to be felt relatively less on the domestic activity and more on external variables (e.g., exchange rate and current and capital account flows). Within the domestic economy, it is therefore possible that the incidence of monetary policy has tended to shift principally from such sectors as housing and fixed investment (typically with an important share of nontraded goods) more toward the export- and import-competing (tradable goods) industries.

In addition to affecting the linkages between policy instruments and the domestic economy, innovations in financial instruments and techniques have affected the usefulness of individual monetary policy instruments. Reduced segmentation of domestic and international financial markets has sharply decreased the effectiveness of credit controls. In the absence of capital controls, many borrowers can readily substitute external sources of credit for any domestic sources that are restricted.

The adoption of new financial instruments and institutional changes in the financial system also have affected the information content of domestic monetary aggregates (e.g., as they relate to future changes in domestic output and prices) and have made control of the expansion of those aggregates more difficult. <sup>1/</sup> As new types of deposits and money market instruments have become available, the authorities in countries such as France, the United Kingdom, and the United States have often found it necessary to redefine relevant aggregates, in part, in an attempt to retain a more stable statistical relationship between the aggregates, nominal income, and interest rates.

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<sup>1/</sup> The information content of exchange rate movements would also be affected by official exchange market intervention. These problems have been discussed extensively in the Bank for International Settlements, Financial Innovation and Monetary Policy, Basel, 1984, and Organization for Economic Cooperation and Development, Trends in Banking in OECD Countries, Paris, 1985.

The income velocities of the key monetary aggregates in the major industrial countries have undergone substantial change and shown considerable variability in the period since the early 1970s (Chart 2 and Table 10), which has made it more difficult to gauge the timing and incidence of a change in monetary policy. <sup>1/</sup> For the overall period 1974-86 and the three subperiods given in Table 10, four conclusions emerge. <sup>2/</sup> First, since trends in the velocity series have shifted over time, variability of velocity for the whole period (from 1974 to 1986) is greater than the variability within each of the subperiods. Second, velocities of narrow (i.e., M1) money aggregates have been more variable than those of broader aggregates. Third, Japan and the Federal Republic of Germany had the lowest variability of velocity over the 1974-86 period. Finally, for most aggregates, the variability levels were no greater during the 1982-86 period than during the previous subperiods-- although this is generally seen as a period of accelerated financial change.

The sharp changes in the velocities of narrow money have reflected the changing pattern of inflation (rising during the 1970s and falling during the 1980s), the growing availability of alternative types of liquid instruments carrying market related yields, and the emergence of new cash management techniques. There is also the issue of whether the financial liberalizations in the Federal Republic of Germany and Japan will adversely affect the relative stability of velocity relationships that have existed in the past, in part, due to the greater availability of new money market and security market instruments. At least for the period through the end of 1986, those relationships have not deteriorated. <sup>3/</sup>

As noted in the recent report by a study group of G-10 central banks, <sup>4/</sup> the higher degree of capital mobility that has accompanied recent changes in international financial markets means that the effects of changes in domestic monetary policies are now likely to be transmitted more rapidly to other countries through movements in exchange rates, interest rates, and capital flows. In this environment,

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<sup>1/</sup> Velocity is constructed by dividing the nominal level of GNP by the corresponding monetary aggregate. Variability is measured as the standard proportionate deviation of the sample observation around a simple trend line.

<sup>2/</sup> This analysis extends earlier work by Peter Isard and Liliana Rojas-Suarez, "Velocity of Money and the Practice of Monetary Targeting: Experience, Theory, and the Policy Debate," Staff Studies for the World Economic Outlook, July 1986, International Monetary Fund, Washington, D.C., pp. 73-114.

<sup>3/</sup> However, variability about a trend change in velocity cannot be used as the only indicator of a deterioration, especially when the trend shifts.

<sup>4/</sup> Bank for International Settlements, Recent Innovations in International Banking, April 1986, p. 249.

Table 10. Major Industrial Countries: Variability Levels for Velocity, 1974-86

	1974-86	1974-77	1978-81	1982-86
France				
M1	0.026 <u>1/</u>		0.011	0.011
M3	0.017 <u>1/</u>		0.010	0.011
Germany, Federal Republic of				
Central bank money	0.014	0.011	0.010	0.011
M1	0.037	0.023	0.018	0.017
M3	0.028	0.026	0.012	0.010
Japan				
M1	0.023	0.018	0.029	0.017
M2+CDs	0.014	0.016	0.011	0.008
United Kingdom				
M0	0.025	0.013	0.021	0.013
M1	0.097	0.028	0.028	0.030
M3	0.095	0.022	0.039	0.023
United States				
M1	0.056	0.008	0.010	0.029
M2	0.035	0.009	0.013	0.017
M3	0.028	0.008	0.011	0.012

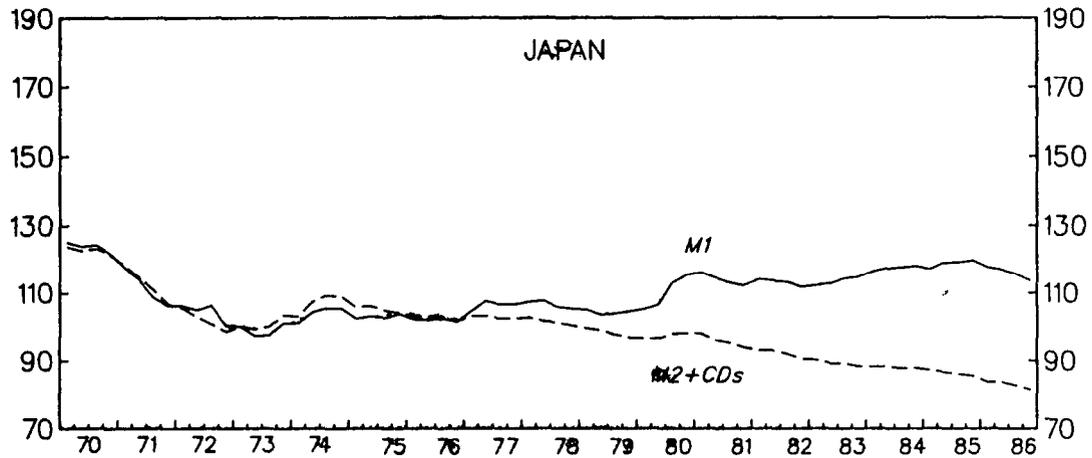
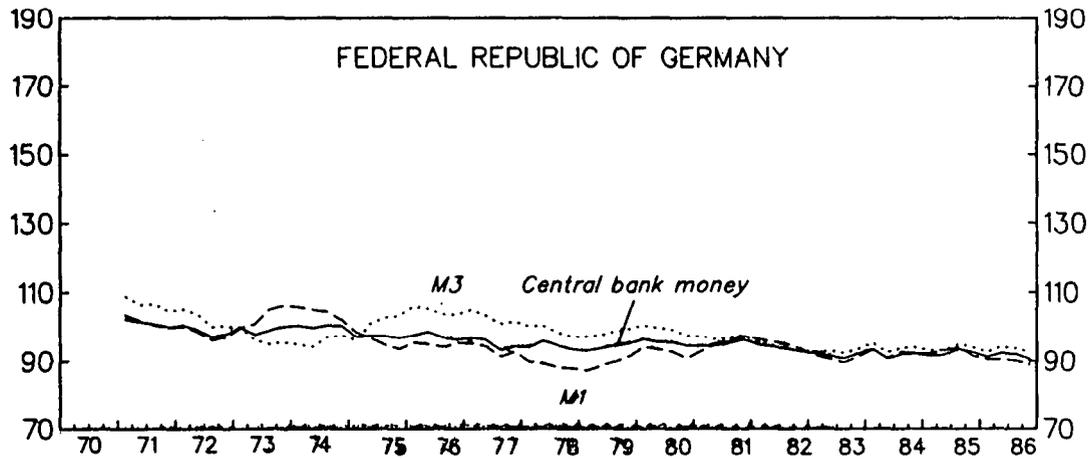
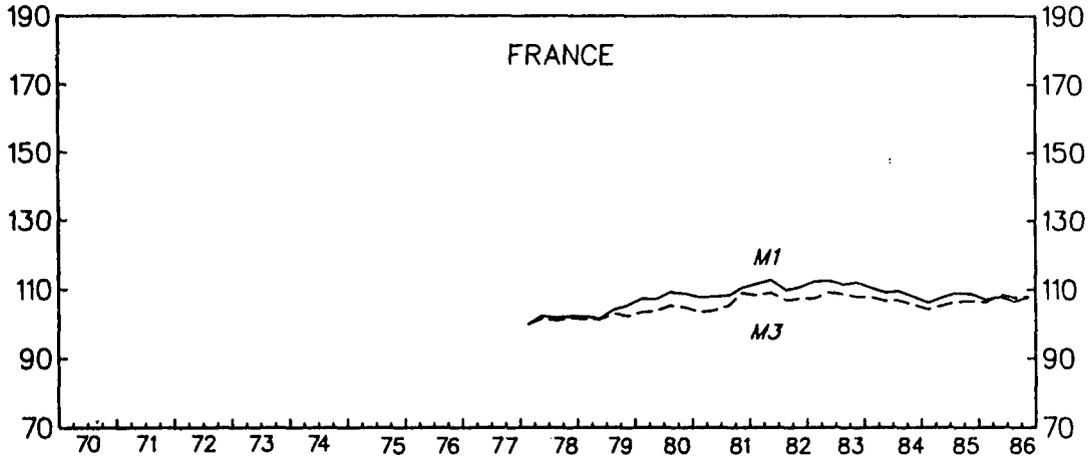
Note: The variability levels correspond to the standard proportionate deviations of velocity around its trend for the relevant period or sub-period. Specifically, if  $v_1$  denotes the observed value of velocity in quarter 1 and  $\bar{v}_t$  denotes the trend value of velocity, the variability levels correspond to standard deviations of  $(v_1 - \bar{v}_t)/\bar{v}_t$ .

Definitions of the monetary aggregates are those used by the national authorities in each country. The narrow M1 aggregates are generally defined as currency plus domestic demand deposits, while the more broadly defined M2 and M3 concepts add to M1 domestic savings deposits and various managed liabilities of banks and other financial institutions. In France, M1 refers to holdings of residents; M3 consists of notes, coins, sight deposits, and CDs excluding Treasury bills, commercial bills, and long-term saving accounts. In Germany, central bank money comprises currency held by nonbanks and a weighted average of banks' deposits, with the weights based upon required minimum reserves calculated at constant (January 1974) ratios; currency in circulation has a weight of 100 percent, sight deposits have a weight of 16.6 percent; time deposits 12.4 percent; and savings deposits 8.1 percent; and only time deposits and savings deposits of less than four-year maturity are included in the latter two categories. In Japan, M2+CDs comprises currency in circulation, demand deposits, time deposits, and certificates of deposits. In the United Kingdom, M0 is the wide monetary base, defined as banks' holdings of cash, plus banks' operational balances at the Bank of England, plus notes and coin.

1/ For 1978-86.

CHART 2  
MAJOR INDUSTRIAL COUNTRIES:  
VELOCITIES OF MONETARY AGGREGATES, 1970-1986

(Indices, first quarter 1973=100)



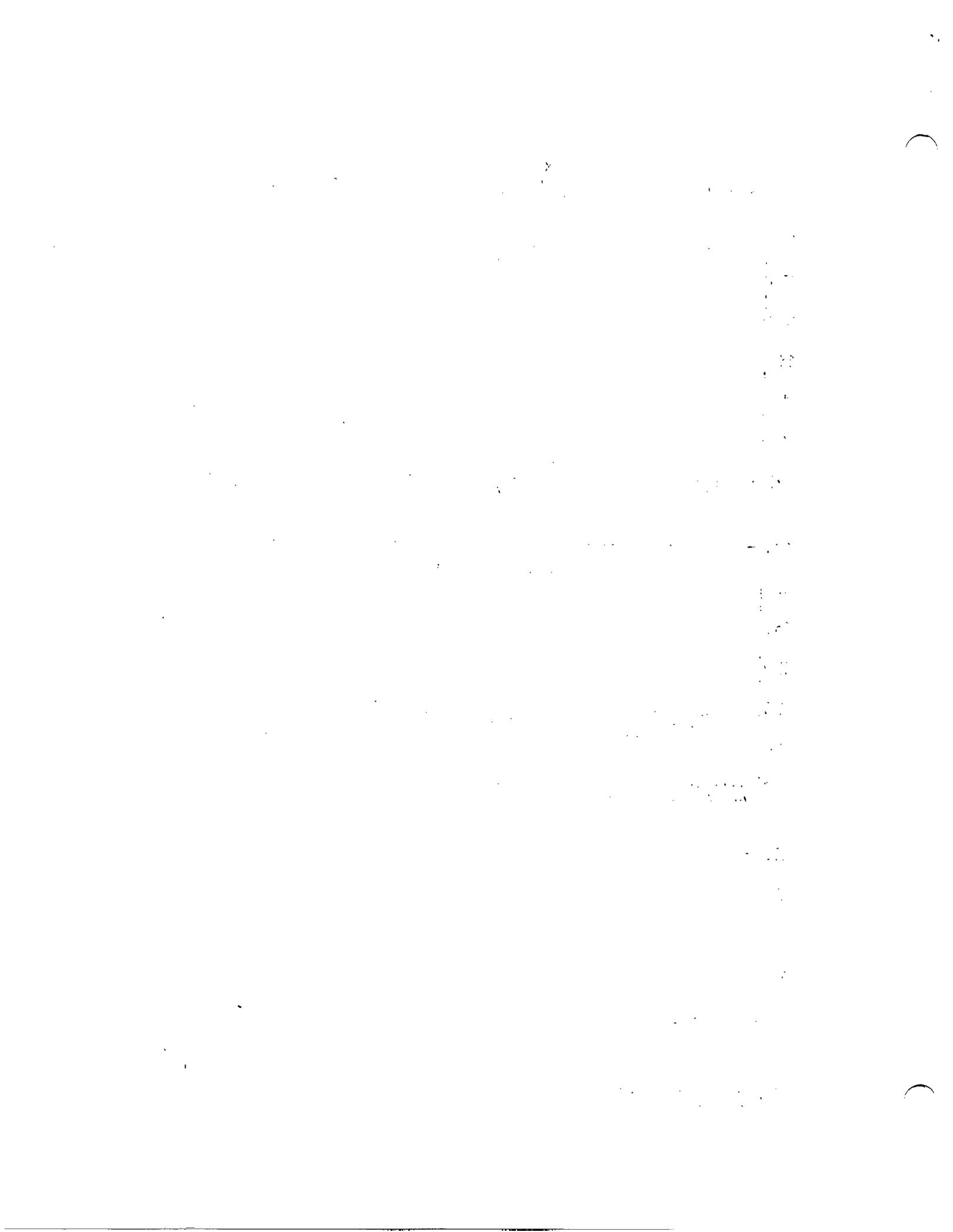
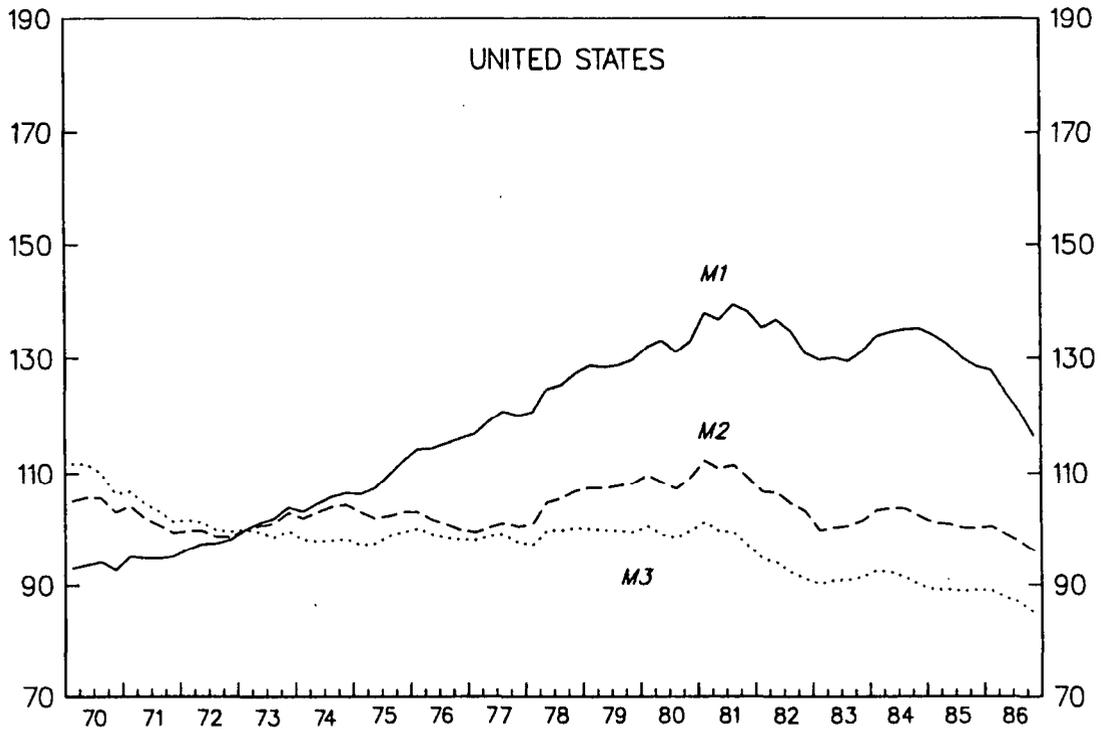
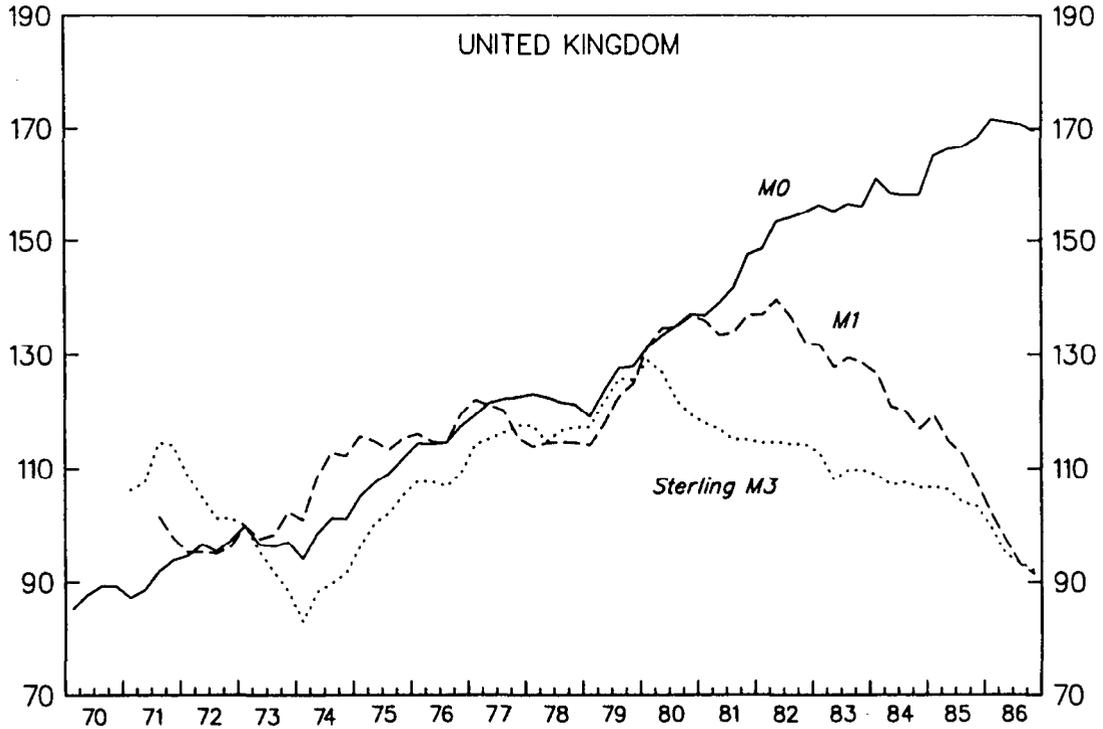


CHART 2 (Continued)  
MAJOR INDUSTRIAL COUNTRIES:  
VELOCITIES OF MONETARY AGGREGATES, 1970-1986  
(Indices, first quarter 1970=100)





uncoordinated and conflicting macroeconomic policies may at times lead to rapid and sharp adjustments in interest rates and exchange rates as market participants recognize the incompatibility of the policy mix. Moreover, a given change in a domestic policy instrument is likely to have a more powerful impact on both the domestic and international economy when it is used in coordination with reinforcing policy changes in other countries. Such a greater impact would reflect not only the direct effect of a change in the instrument (e.g., a change in the discount rate) on portfolio and spending decisions but also the effect on private sector expectations that would arise from adopting a consistent and coordinated policy approach. With increasing financial market integration, such expectations effects could have a major influence on short-run movements in exchange rates and other asset prices. Thus, the case for multilateral surveillance of monetary, exchange rate, and other macroeconomic policies has been enhanced by the developments in major financial markets. However, the growing integration of financial markets implies that such surveillance may have to extend beyond a narrow focus on financial markets in just the major countries to also examine activity in the offshore markets. The channels through which the effects of domestic macroeconomic policies are transmitted to other countries will also continue to evolve as the continuing structural changes in international financial markets take place.

The financing of fiscal deficits has been facilitated in all of the major industrial countries by the use of new financial instruments and by the increased access of domestic and foreign entities to the markets for government debt. In some cases, new money market instruments and liberalization measures were stimulated by the need to finance larger fiscal deficits. Treasuries have also been able to reduce their funding both by adopting new issuance techniques and new instruments. However, the greater ease with which fiscal imbalances can be financed has also allowed some countries to delay adjustments to underlying structural imbalances in their fiscal accounts. <sup>1/</sup> In addition, since foreign investors have come to play an increasingly larger role in the financing of fiscal imbalances, the impact of a given fiscal imbalance may be transmitted more rapidly to other countries. This would be especially true in those situations where the financing of fiscal imbalances reduces the resources available to private investment in other countries.

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<sup>1/</sup> The availability of external credit naturally extends the options available to countries regarding how rapidly to adjust or to undertake other activities (e.g., public sector investments). With regard to adjustment, concern has been expressed that such financing may at times delay needed adjustments in policies for too long a period and may then force sharp adjustments as the availability of credit becomes limited or much more costly.

3. Foreign exchange reserves, SDRs,  
and international financial markets

An adequate stock of international reserves allows countries to gradually adjust to unanticipated disturbances that may adversely affect or threaten to affect their international payments positions. As has been discussed in recent papers prepared for the Executive Board on the issue of SDR allocation, 1/ any evaluation of the adequacy of the stock of international reserves involves consideration of both the demand and supply of international reserves. Despite the shift to more flexible exchange rates, countries have continued to hold reserves as a precaution against unanticipated shocks, as a means of demonstrating creditworthiness, and for exchange market intervention. The relative stability of the ratio of nongold reserves to imports for all countries together in the period since 1973 provides evidence of the existence of a stable long-term demand for international reserves.

The supply and distribution of reserves among countries and their consistency with the reserve needs of individual countries remain crucial issues for the international monetary system. Under current international monetary arrangements, many countries acquire reserves, in effect, by borrowing on international financial markets, and hold reserves in highly liquid forms as short-term obligations of the reserve-currency countries and as short-term negotiable deposit liabilities of international money-center banks. However, some countries with only limited access to financial markets have been able to acquire reserves only through balance of payments surpluses generated by the receipt of official financial flows, foreign direct investment, or by adjustments in current account positions.

For countries with access to international financial markets, borrowing from these markets has provided a flexible and efficient means of adjusting their gross reserve positions. The net cost of holding borrowed reserves--the difference between the cost of borrowed funds and the return earned on reserve assets--tends to be lowest for those countries regarded as the most creditworthy. 2/ Recent innovations in financial instruments have facilitated an improvement in the management of reserve assets, as well as in the funding of these assets. In particular, currency and interest futures and options have created some scope for countries to safeguard their assets against price movements in the short run, while the use of interest rate and currency swaps has reduced the net cost of reserve accumulation as well as allowed hedging

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1/ This includes SM/87/63, "Considerations Pertaining to a Resumption of SDR Allocations in the Fifth Basic Period," and SM/86/302, "Concept of Long-Term Global Need for Reserve Supplementation in the Current Context."

2/ The estimated cost of reserves for various country groups has been reported in SM/87/63, "Considerations Pertaining to a Resumption of SDR Allocations in the Fifth Basic Period."

against longer-term interest and exchange rate movements. Moreover, new innovative financing structures, using existing assets as collateral, have come into much more common use and might be used by countries to reduce their cost of borrowing for the purpose of acquiring reserve assets.

Even countries with ready access to international financial markets have found it nonetheless desirable to hold reserves in the form of liquid assets denominated in reserve currencies rather than to rely on their ability to obtain credit at a time of need. Access to financial markets and the cost of borrowing is determined by a country's credit standing, which can deteriorate at the very time countries find it necessary to borrow, thus raising the cost of borrowing or causing access to be denied. Hence, under current monetary arrangements, the views of market participants regarding a country's creditworthiness are an important factor in determining the availability and the cost of borrowed reserves.

Concerns have been raised that a reserve system heavily dependent on borrowed reserves may be vulnerable to financial market disturbances. In particular, such disturbances might make it difficult for some countries to maintain their existing stocks of borrowed reserves or obtain new reserves. Moreover, it has been suggested that such a system induces a potential deflationary effect on the world economy as countries without access to financial markets act to produce current account positions that are large enough to service their external debt as well as to accumulate reserves.

Since borrowed reserves have played a key role in the current reserve system, the stability and efficiency of international financial markets as well as the terms and conditions under which countries can access financial markets are important considerations in evaluating the adequacy of the actual or potential stock of international reserves. In part, the potential role of the SDR in meeting the long-term global need for reserve supplementation would be influenced by whether international financial markets are likely to be an efficient and reliable source of borrowed reserves over time. In particular, SDR allocations could reduce the vulnerability of the reserve system to disturbances in financial markets by providing countries with a sufficient stock of owned reserves that would be available even during a crisis period.

#### 4. Coordination of supervisory and regulatory policy

The rapid and substantial structural changes in financial markets described earlier in this paper have increased the importance of the international coordination of the activities of national supervisors and regulators. Technological advances have allowed financial institutions to operate readily across national boundaries and thereby to exploit the opportunities for "regulatory arbitrage"--the shifting of transactions to particular markets to take advantage of regulatory differences. Thus, existing supervisory and regulatory structures may need to be

modified to reflect not only recent structural changes in domestic systems but also the fact that financial institutions can readily relocate their operations across international markets. As in the past, the continuing modification of supervisory and regulatory structures has reflected the authorities' concerns regarding the stability of the financial system as a whole (including protection of the payments system), the protection of depositors and investors, and the promotion of competition among financial institutions.

Two important questions have arisen in connection with the supervisory and regulatory response to concerns over financial market stability. First, what new market and credit risks (if any) have emerged as a result of the structural changes in financial markets? Second, what steps can be taken either by the authorities in a single country or jointly with other countries to limit the scale of any new risks and ensure that the pricing of instruments appropriately reflects such risks? Moreover, there is the related issue of what types of regulatory or supervisory changes can be taken to limit any risks without stimulating movements of financial activity to new offshore markets.

There is a diversity of views regarding the issue of whether the market and credit risks in newly liberalized financial markets have increased and what are the sources of any increased risks. While there has been increased volatility of some asset prices (including exchange rates) in recent years, it has been difficult to identify the degree to which this greater volatility has been a response to unstable macroeconomic conditions or whether it reflects the activities of financial market participants. Many market participants have argued that current financial arrangements, institutions, and prices will show some evidence of instability as long as major macroeconomic imbalances remain.

However, as already noted in subsection 1, others have expressed the view that some of the recent price variability reflects market imperfections associated with improper pricing of financial instruments due to inadequate experience with new financial instruments and markets, as well as inappropriate evaluation of risks and market liquidity and the effects of implicit or explicit government guarantees. Moreover, the ability of financial institutions to shift their operations across major domestic and offshore markets has made it increasingly difficult for the authorities in a single country to undertake actions designed to strengthen financial institutions in isolation and has thereby increased the importance of the supervision of the consolidated accounts of financial institutions.

Despite the diversity of views on the sources of market and credit risks in the system, there has developed a consensus that financial system stability requires, in part, some improvements in the capital positions of financial institutions. Moreover, it has been recognized that a common supervisory framework is needed to inhibit regulatory arbitrage and provide a "level playing field." For example, the risk-asset ratio is an important element of the U.S./U.K. convergence

proposals for capital adequacy. It provides a common yardstick to assess the adequacy of capital held by banks of different countries, thus meeting both prudential and competitive concerns. Further moves toward coordination among the major industrial countries are presently under examination.

There may also be a need to apply common standards to financial institutions carrying out similar activities within national markets, so that competitive inequities may be reduced and savings allocated more efficiently in response to underlying economic conditions. One difficulty associated with applying higher capital adequacy ratios (or restrictions on portfolio selections) is that they may encourage financial institutions to shift their operations to other markets (especially to those with lower capital adequacy ratios) or to use alternative corporate forms. As a result, the authorities have sought to implement regulations and supervisory techniques which support and strengthen best market practices. The authorities including those in the United Kingdom and the United States have issued papers to engage in constructive dialogue with market participants. For example, the proposed capital weighting for off-balance sheet activities (including currency swaps) was recently issued by the U.K. and U.S. authorities.

The overlap in business interests between banks and securities houses and the integration of financial market activities have not been matched by developments in international coordination of the regulation of securities houses. Traditionally, the concern of securities markets regulators has been primarily with investor protection, and not with monitoring the solvency of the foreign, or even domestic, affiliates of securities companies. The issue of credit risk management by securities houses has, however, become more important as they acquire such risks for significant periods of time through expanding underwriting, and dealing activities. Moreover, the management of these risks may have important implications for the stability of the payments system.

Yet another tendency worth noting is the one toward larger, more diversified financial institutions with overlapping activities. So far, supervisors have concentrated on coordination of capital requirements in banking institutions, particularly in relation to assessment of credit risk. It will be important that other gaps in supervision be avoided. It is increasingly difficult to judge financial institutions' vulnerability to risk through an examination of individual institutions within financial conglomerates. Thus there is a need for a broadening of supervisory examination that may reach beyond the issue of solvency of a single institution to consider such factors as the liquidity and interest rate risks facing the conglomerate as a whole.

A further aspect of supervisory and regulatory policy in response to this trend is to guard against contagion within such financial groups, and between intermediaries that are linked by nonbank funding channels. The securities houses, which have close links to wholesale

money markets, do not normally have access to lender of last resort facilities.

These developments have also raised the question of whether supervision should be done on an institutional or functional (line of business) basis. While supervision in most countries has been focused on institutions, it has been argued that a functional approach may be more suitable in an environment in which firms take on a much larger set of activities (with different risks) than in the past. A difficulty with relying solely on functional supervision is that the risks associated with different types of activities undertaken by a given institution may be interdependent. The potential role of functional supervision is being explored by bank supervisors.

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The recent changes in international financial markets suggest a number of issues that could be the subject of further analysis in future capital markets reports or other Board papers. Taking into account staff and Board work pressures, Directors' views on these issues and the desirability and priorities of additional staff and Board work would be welcome. First, it has generally been argued that the recent innovations in financial instruments and techniques have helped reduce the costs of credit for many borrowers, expanded the set of possible financial transactions, and increased the returns available to investors. However, some have raised the question of whether these potential efficiency gains have been achieved at the cost of greater potential instability in financial markets due to inappropriate pricing of market risks and inadequate management of risk exposures.

One issue is therefore whether the stability of liberalized and increasingly integrated financial markets is ensured by the establishment of appropriate macroeconomic policies or whether additional policy measures are required. The analysis of this issue would require consideration of the degree to which financial market prices appropriately reflect the fundamental determinants of demand and supply (including credit and liquidity risks), the response of markets to disturbances (e.g., such as that in the perpetual floating rate note market in late 1986), and the linkages between financial market stability and macroeconomic policies. Moreover, to the extent that the growing integration of financial markets increases the international dimension of financial crises, there could also be consideration of the role (if any) of the Fund in safeguarding the system from such financial market shocks.

Second, the internationalization of financial activity (especially in the offshore markets) means that a complete overview of financial developments in the world economy cannot be provided solely through a country-by-country analysis of the major domestic markets. In this situation, there is the issue of what types of information and analysis of these markets would be a useful addition or supplement to the current

WEO analysis or Article IV consultations. In particular, this would require consideration of the information on institutional and regulatory change and the flow of funds within and across countries (subject to data availability) that would be most useful. Moreover, the issues related to the growing interdependence between both developed and developing countries and international financial markets that are of most immediate concern would have to be identified, especially as they concern the surveillance of exchange rate and macroeconomic policies and the development of new indicators and the role of the Fund in assisting countries with external payments difficulties.

A third area reflects the increasingly important role that international financial markets have come to play in the provision of international liquidity as many countries with access to those markets have often obtained reserves through borrowing. In particular, this would require consideration of how the cost, availability, and stability of these borrowed reserves should be incorporated into the Fund's surveillance of international liquidity. In addition, there are questions of how countries could best use the new range of financial instruments and techniques to manage their reserve positions and external liabilities.

Finally, in light of the changes in international financial markets, there is the issue of the role of supervisory and regulatory policies in enhancing the efficiency and stability of the international monetary system. In this area, the staff could review and analyze the efforts by national authorities to achieve a more coordinated approach to the international supervision of financial markets and institutions. Moreover, there could be consideration of the implications of the changes in supervisory and regulatory policies for such areas as the relationship between creditor banks and major debtor countries.

