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February 26, 1986

To: Members of the Executive Board

From: The Secretary

Subject: Allocation of SDRs - Consideration in Light of Recent  
Developments

Attached for consideration by the Executive Directors is a paper on allocation of SDRs, which has been scheduled for discussion on Wednesday, March 26, 1986.

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

Att: (1)

Other Distribution:  
Department Heads



INTERNATIONAL MONETARY FUND

Allocation of SDRs:  
Consideration in Light of Recent Developments

Prepared by the Research Department

(In consultation with the Legal Department  
and the Treasurer's Department)

Approved by Wm. C. Hood

February 25, 1986

In response to requests by the Interim Committee, the Executive Board has recently completed its consideration of two papers reviewing the implications of changes in the structure of the international monetary system for the role of the SDR and the potential contribution of the SDR to economic stability. 1/ This paper considers whether the criteria for an SDR allocation, as set forth in the Articles of Agreement, have been satisfied in light of recent developments in the world economy and in international reserves and liquidity. 2/ This analysis is divided into four sections. The first section reviews recent developments in international reserves and liquidity. The second section examines the position of the SDR in the evolution of international reserves and liquidity. The third section considers the place of the SDR in light of recent structural changes in the international monetary system. The fourth section estimates the long-term global need for reserves and considers the effect of allocations of various sizes on the share of SDRs in total non-gold reserves.

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1/ SM/85/340, "Implications of Changes in the International Monetary System for the Role of the SDR," and SM/86/17, "The Potential Contribution of the SDR to Economic Stability."

2/ Previous papers relating to SDR allocation in the fourth basic period are:

- SM/80/189 "Considerations Relating to the Size of SDR Allocations," July 25, 1980 (and Correction 1, August 13, 1980).
- SM/81/4 "Considerations Relating to the Size of SDR Allocations in the Fourth Basic Period," January 7, 1981 (and Correction 1, January 19, 1981).
- SM/81/74 "Further Considerations Relating to the Size of SDR Allocations in the Fourth Basic Period," April 1, 1981 (and Supplement 1, April 14, 1981).
- SM/83/157 "Considerations Relating to a Possible Proposal for an Allocation of SDRs in the Current Basic Period," July 11, 1983.
- SM/83/196 "Considerations Relating to the Long-Term Global Need to

## I. Recent Developments in International Reserves and Liquidity

Since the early 1970s, structural changes in the international monetary system have affected the rationale for holding reserves as well as the mechanisms through which reserves are provided. While the ending of the obligation to defend fixed exchange rates had been expected to lead to reduced holdings of reserves, the ratio of non-gold reserves to imports for all countries has remained relatively stable since 1973 (Table 1). The reports of the Deputies of the Group of Ten 1/ and the Deputies of the Group of Twenty-Four 2/ attributed this sustained demand to the continued exchange market intervention by most countries with floating exchange rates and the desire of many countries to hold precautionary reserves to protect themselves from the uncertainties arising in the wake of large payments disequilibria. In addition, it was recognized that reserves could play a role in demonstrating creditworthiness and assuring access to international financial markets. 3/ Although holdings of reserves rose sharply during the heavy exchange market interventions in the early 1970s, the ratios of non-gold reserves to imports for all countries subsequently declined to values that generally remained higher than the average ratios prevailing in the early 1960s. 4/ Moreover, the relative stability of the ratios of non-gold reserves to imports since the early 1970s suggests that countries have tended to expand their non-gold reserve holdings in line with the growth of imports.

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1/ (continued from p. 1) Supplement Existing Reserve Assets," August 26, 1983.

SM/83/266 "Considerations Pertaining to the Allocation of SDRs," December 28, 1983 (and Supplement 1, January 20, 1984).

DM/84/11 "Demand for International Reserves and Effects of Reserve Increases on the World Economy: An Annotated Bibliography," February 22, 1984.

SM/84/148 "Allocations of SDRs--Legislative History of the Concept of 'Global Need' to Supplement Existing Reserves," June 27, 1984.

SM/84/191 "Allocation of SDRs in the Fourth Basic Period," August 3, 1984.

SM/85/50 "Allocation of SDRs in the Current Basic Period--Renewed Considerations," February 11, 1985.

SM/85/219 "SDR Allocation in the Current Basic Period--Review of Pertinent Considerations," August 2, 1985.

1/ "The Functioning of the International Monetary System," EBD/85/154, para. 57 (henceforth G-10 report).

2/ "The Functioning and Improvement of the International Monetary System," EBD/85/228, para. 90 (henceforth G-24 report).

3/ G-10 report, para. 57; G-24 report, para. 90.

4/ Between 1960 and 1969, the ratio of non-gold reserves to imports averaged 16.1 percent.

Table 1. Non-Gold Reserves of All Countries and Groups of Countries, and SDR Allocations Amounts and Ratios to Merchandise Imports and to Trade Imbalances, End of Years 1970-85

(In billions of SDRs)

	Non-Gold Reserves							Cumulative SDR Allocations <u>1/</u>	Holdings of SDRs by Participants <u>1/</u>
	Developing Countries								
	All Countries	Industrial Countries	Capital-Importing Countries						
			All Developing Countries	All Capital-Importing Countries	with Recent Debt-Servicing Problems	Without Recent Debt-Servicing Problems			
<u>Amounts</u>									
1970	56.2	38.9	17.3	14.6	6.9	7.7	3.4	3.1	
1971	87.6	65.7	21.9	17.1	7.6	9.5	6.4	5.9	
1972	111.6	79.7	32.0	25.5	12.3	13.2	9.3	8.7	
1973	117.9	77.8	40.0	32.7	16.7	16.0	9.3	8.8	
1974	145.2	78.3	67.0	41.8	23.5	18.3	9.3	8.9	
1975	160.2	83.6	76.6	43.0	23.8	19.2	9.3	8.8	
1976	188.1	92.7	95.4	54.9	28.0	26.8	9.3	8.7	
1977	229.9	118.9	111.0	63.5	28.7	34.8	9.3	8.1	
1978	247.0	143.1	103.9	68.3	30.3	37.8	9.3	8.1	
1979	273.9	153.2	120.7	80.3	36.0	44.3	13.3	12.5	
1980	321.4	184.3	137.1	89.4	38.2	51.2	17.4	11.8	
1981	330.0	185.1	144.9	95.3	34.9	60.4	21.4	16.4	
1982	327.6	184.4	143.2	90.8	23.8	67.0	21.4	17.7	
1983	360.8	204.7	156.1	105.0	29.8	75.3	21.4	14.4	
1984	403.3	224.5	178.8	129.7	44.9	84.8	21.4	16.5	
1985	397.4	225.3	172.1	123.4	39.9	83.5	21.4	18.2	
<u>Ratios to Imports <sup>2/</sup></u>									
1970	17.4	16.0	21.6	19.2	22.8	16.9	1.1	1.0	
1971	24.8	24.6	25.1	21.0	24.1	19.0	1.8	1.7	
1972	28.2	26.3	34.6	29.7	35.3	25.8	2.4	2.2	
1973	22.6	19.9	30.8	27.2	36.9	21.4	1.8	1.7	
1974	20.2	15.0	33.6	23.2	32.7	16.9	1.3	1.2	
1975	21.9	16.2	35.8	23.4	31.6	17.7	1.3	1.2	
1976	21.2	14.4	39.2	26.3	33.5	21.5	1.0	1.0	
1977	24.0	17.4	40.4	27.5	31.1	25.0	1.0	0.8	
1978	22.9	18.7	33.2	26.9	31.9	23.9	0.9	0.8	
1979	19.6	15.1	31.5	25.2	30.4	22.1	1.0	0.9	
1980	20.9	17.2	29.5	22.4	25.7	20.5	1.1	0.8	
1981	19.4	16.0	26.6	21.1	21.8	20.7	1.3	1.0	
1982	19.9	16.7	26.5	20.7	17.3	22.3	1.3	1.1	
1983	20.7	17.0	28.8	23.3	23.0	23.4	1.2	0.8	
1984	21.5	17.2	31.4	26.7	32.9	24.3	1.1	0.9	
1985	20.7	16.7	30.4	25.0	29.6	23.3	1.1	0.9	
<u>Ratios to trade imbalances <sup>3/</sup></u>									
1970	108.5	135.2	75.2	85.5	86.5	84.6	6.6	6.0	
1971	146.2	212.5	75.4	86.7	96.0	80.5	10.6	9.8	
1972	169.0	201.0	121.0	139.8	157.1	126.8	14.1	13.2	
1973	141.3	172.9	104.2	125.3	134.3	117.1	11.2	10.6	
1974	84.9	121.2	62.9	99.9	80.3	79.4	5.4	5.2	
1975	115.7	155.3	90.5	94.5	102.3	86.4	6.7	6.3	
1976	114.6	137.7	98.5	121.8	134.8	110.6	5.7	5.3	
1977	125.5	141.8	111.8	131.7	151.9	118.7	5.1	4.4	
1978	135.0	167.0	106.7	116.2	119.1	114.0	5.1	4.4	
1979	121.9	227.2	76.8	95.3	92.3	97.9	5.9	5.6	
1980	104.0	197.3	63.6	81.8	79.9	83.3	5.6	3.3	
1981	104.3	161.2	71.9	92.9	98.3	90.0	6.8	5.2	
1982	103.9	132.5	81.3	82.9	57.5	98.3	6.8	5.6	
1983	110.2	122.7	97.2	83.1	49.7	113.3	6.5	4.4	
1984	97.0	91.1	105.6	95.4	65.2	126.3	5.2	4.0	
1985	96.5	95.9	97.2	85.2	58.6	108.3	5.2	4.4	

<sup>1/</sup> The ratios for cumulative SDR allocations and holdings of SDRs are calculated by using imports and trade imbalances for all countries.

<sup>2/</sup> The annual rate of imports in the fourth quarter is the divisor of the stock of reserves at year's end.

<sup>3/</sup> Trade imbalances equal the sum of the absolute values of differences between exports and imports for individual countries in each group.

The emergence of international financial markets as a major source of borrowed international reserves provided new channels for meeting the demand for reserves. For countries with access to the international financial markets, the supply of reserves was not directly tied to developments in the balance of payments of other countries, and the stock of reserves could adjust to changes in the aggregate of desired holdings. The credit markets' assessment of a country's ability and willingness to make the real transfer necessary to service its debt over time determined the country's access to credit markets and the terms on which it could borrow. The net cost of borrowed reserves (equal to the difference between the loan rate and the return on reserve assets) was generally viewed as lower than the cost associated with the adjustments required to generate reserves through current account surpluses. Nonetheless, a large number of developing countries did not have access to these markets, and some of them had to rely for reserve acquisition on current account surpluses.

As a result of the growing importance of borrowed reserves, the developments in international reserves and liquidity in the early 1980s were strongly affected by the response of private financial markets to the emergence of external payments difficulties for many developing countries. In particular, countries with debt-servicing problems were confronted with abrupt and marked shifts in the terms and conditions under which international liquidity was made available; and many countries could not borrow reserves in private markets at times when their needs for such reserves were greatest. Countries without access to international financial markets could obtain reserves only by generating a current account surplus or from inflows of official or private equity capital. Since such capital flows were not responsive to increases in external payment deficits, the rebuilding of holdings of reserves for these countries required adjustments in policies to generate current account surpluses in excess of those necessary to service external debt positions.

The data on total non-gold reserve holdings presented in Table 1 reflect these developments. In 1982, the total stock of non-gold reserves held by all countries fell for the first time since 1959. Although the decline was slight, there were sharply divergent experiences for various subgroups of developing countries. For example, while the stock of non-gold reserves of capital-importing developing countries 1/ declined by

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1/ The category of capital-importing developing countries includes all developing countries except the eight Middle Eastern oil exporting countries (Islamic Republic of Iran, Iraq, Kuwait, Libyan Arab Jamahiriya, Oman, Qatar, Saudi Arabia, and the United Arab Emirates).

5 percent, countries with debt-servicing problems 1/ experienced the most significant deterioration in their liquidity position, with their stock of non-gold reserves declining by one third in 1982.

During the years 1983-84, many countries were successful in rebuilding their reserves, and holdings of non-gold reserves by industrial and developing countries expanded by 22 percent and 25 percent, respectively. Capital-importing countries with debt-servicing difficulties were able to expand their reserve holdings from SDR 24 billion at the end of 1982 to SDR 45 billion at the end of 1984, thereby more than offsetting the loss of reserves experienced in 1982. In this regard, the rebuilding of gross reserve holdings to a level adequate to support medium-term balance of payments viability has been an important objective of adjustment programs supported by Fund resources. For example, in a review covering the years 1980-84 of the 22 countries that entered into an arrangement with the Fund in 1982, there were 14 countries that had targets for gross official reserves in their programs, and half of these countries in fact achieved their reserve targets in each year of the program. 2/

Developments during the year 1985 point to a slowing in the rate of reserve accumulation, and in some cases to a decline in total reserves. The aggregate holdings of non-gold reserves by all countries declined by SDR 6 billion in 1985. The only other year since 1970 in which the total holdings of non-gold reserves by all countries declined was 1982, when these reserves fell by SDR 2 billion. Reserves of industrial countries remained approximately unchanged in 1985; those of developing countries declined by SDR 6.7 billion, or about 4 percent, compared with a decline of SDR 1.7 billion in 1982. The group of capital-importing developing countries experiencing debt-servicing difficulties saw their stock of reserves decline by 11 percent, from SDR 45 billion to SDR 40 billion. For some countries, the slowing or decline in the accumulation of reserves reflected satisfaction with their existing reserve position; other countries found that external payment difficulties and the continued lack of access to financial markets adversely affected their efforts to accumulate reserves.

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1/ Developing countries that have experienced recent debt-servicing difficulties are defined as those which incurred external payments arrears during the period 1983 to 1985 or rescheduled their debt during this period as reported in the relevant issues of the Fund's Annual Report on Exchange Arrangements and Exchange Restrictions.

2/ For a detailed discussion of the role of reserves in Fund programs, see EBS/85/277, "Aspects of Program Design--A Review of the Experience in the 1980s of Countries with Upper Credit Tranche Arrangements Approved in 1982."

The effects of macroeconomic and financial developments in the early 1980s were also reflected in the behavior of the ratios of non-gold reserves to imports (Table 1 and Chart 1). The holdings of non-gold reserve by all countries grew roughly in line with world imports throughout most of the period since the breakdown of the Bretton Woods system of fixed par values, so that the value of the reserve ratio at the end of 1985 (20.7 percent) was nearly equal to its average value over the period 1974-84 (21.1 percent). This stability of the overall ratio of reserves to imports reflects in large measure the limited variation in this ratio for the industrial countries, which has remained close to 17 percent since 1974.

The ratio of total non-gold reserves to imports for the developing countries has been more variable in the period since 1973 than that of the industrial countries and has ranged from a high value of 40 percent in 1977 to a low value of 27 percent in 1982 and 1983. The decline in holdings of non-gold reserves of all developing countries in 1985 marginally reduced the ratio of these reserves to imports from 31 percent at the end of 1984 to 30 percent at the end of 1985, despite the decline in imports of these countries from SDR 570 billion in 1984 to SDR 566 billion in 1985. Within the group of developing countries, the ratio of reserves to imports for the capital-importing developing countries has varied over the same period between a high value of 28 percent in 1977 and a low value of 21 percent in 1982. Between the end of 1982 and the end of 1984, the ratio of reserves to imports for this group increased by nearly a third to 27 percent before declining to 25 percent at the end of 1985. Among the capital-importing developing countries, the group of countries with debt-servicing problems experienced the sharpest changes in their reserve ratio, which declined from a peak of 33 percent in 1976 to a trough of 17 percent in 1982 before recovering to 30 percent by the end of 1985. The improvement in this ratio for countries with debt-servicing problems has been achieved by the combination of an increase in total non-gold reserves and a compression in imports from SDR 138 billion in 1982 to SDR 135 billion in 1985.

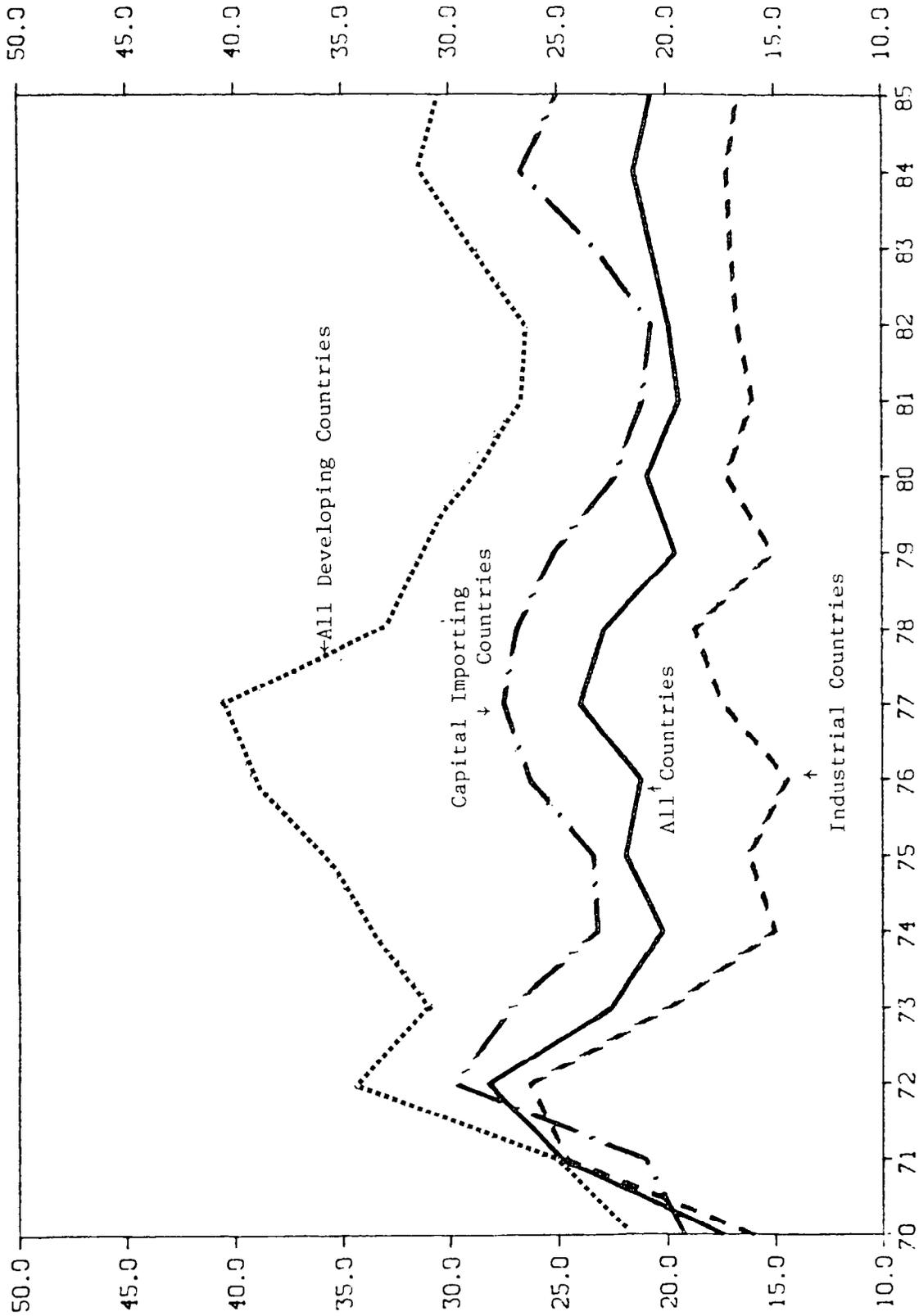
Although the ratios of reserves to imports have tended to return to their historical averages for the period 1974-85 after the decline in 1982, the ratios of reserves to trade imbalances have shown a much more diverse pattern of development (Table 1 and Chart 2). <sup>1/</sup> There are prudential reasons why a country might desire to hold a larger stock of reserves when faced with the prospect of larger trade imbalances, and hence persistent deviations in the ratio of reserves to trade imbalances

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<sup>1/</sup> Aggregate trade imbalances are defined as the sum of the absolute values of differences between exports and imports for individual countries. Trade imbalances are used instead of the more comprehensive measure of current account imbalances in order to obtain the broadest possible coverage.

Chart 1. Ratio of Non-Gold Reserves to Imports <sup>1/</sup>

(In percent)

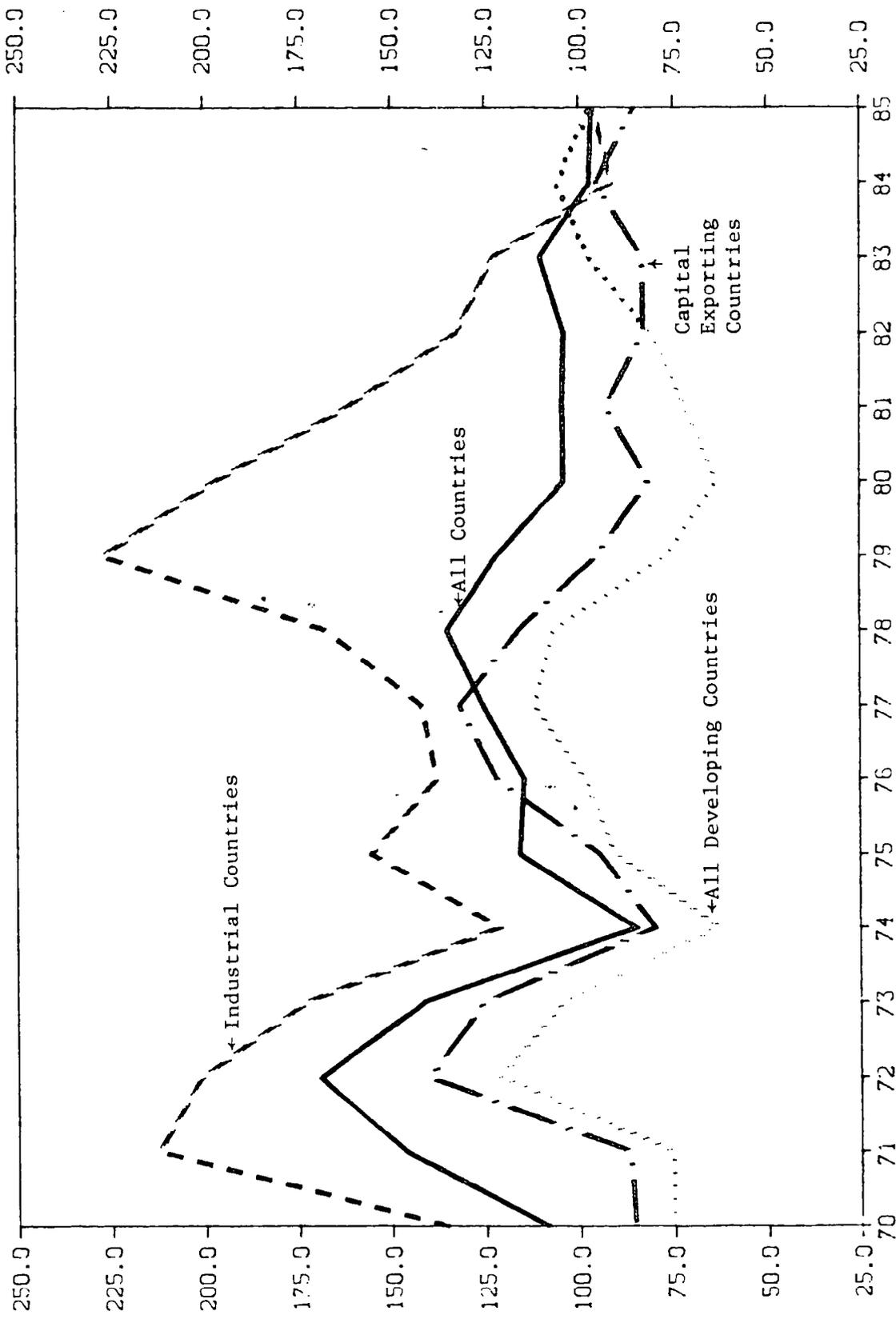


<sup>1/</sup> The annual rate of imports in the fourth quarter is the divisor of the stock of reserves at year's end.



Chart 2. Ratio of Non-Gold Reserves to Trade Imbalances 1/

(In percent)



1/ Trade imbalances equal the sum of the absolute values of differences between exports and imports for individual countries in each country group.



away from a long-run average could be interpreted as representing a disequilibrium in a country's holdings of reserves. While the ratio of reserves to trade imbalances for all countries had approximately the same value in 1985 as in 1980, there was a sharp difference in the experiences of the industrial and developing countries.

For the industrial countries, the ratio of non-gold reserves to trade imbalances fell from 161 percent in 1981 to 95 percent in 1985. Much of the decline in this ratio for the industrial countries can be attributed to an increase in their aggregate trade imbalances, which rose from SDR 114 billion in 1981 to SDR 235 billion in 1985, in part as a result of large trade deficits for the United States and large trade surpluses for Japan. For all developing countries, in contrast, this ratio reached a trough in 1980 but then rose continuously until 1984. The increase in the ratio from 1980 to 1984 for developing countries can be explained by a decrease in their trade imbalances from SDR 201 billion in 1981 to SDR 169 billion in 1984. The decline in the aggregate trade imbalances of these countries has in part reflected their adjustment efforts, which restrained imports and helped generate larger exports. For example, from 1982 to 1984 the SDR value of imports of the developing countries grew at an annual rate of 1.3 percent, while exports grew by 5.2 percent per annum over the same period. In 1985, however, this ratio fell for all categories of developing countries, primarily reflecting reduced holdings of reserves.

As already noted, the growing importance of borrowing from private financial markets as a source of reserves and general balance of payments financing affected both the demand for and the supply of reserves. Since the international liquidity position of a country encompasses not only the monetary authorities' actual holdings of reserve assets but also credit arrangements that permit the acquisition of borrowed reserves, the loss of access to financial markets has an impact on a country's reserve position beyond that evident in the behavior of reported reserves or of the ratio of reserves to imports. In addition, the level of a country's reserves and the ratio of its reserves to imports have, at times, been important factors in the evaluation of that country's creditworthiness by private financial markets. Moreover, a country's stock of reserves acts as a "shock absorber" for unanticipated balance of payments changes-- financial flows as well as trade flows. A country's external bank debt and its debt service payments can be used as proxies for the potential scale of financial flows. The ratio of non-gold reserves to total external bank debt of all countries has been fairly stable at about 14 percent during the period from the end of 1982 to the end of 1985, after falling from 16 percent to 14 percent in 1982 (Table 2). Similarly, the same ratio for all developing countries has stayed at 16 percent from end-1982 to end-1985, after falling from 19 percent to 16 percent during 1982. Generally, the movements in the ratio of non-gold reserves to external

Table 2. Ratio of Non-Gold Reserves to External Debt to  
Banks for Selected Groups of Countries 1981-85 <sup>1/</sup>

(In percent)

	1981	1982		1983		1984		1985
	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half
All countries	16	14	14	14	14	14	15	14
Developing countries	19	16	16	16	16	16	16	16
Of which:								
Africa	22	14	13	11	11	11	11	13
Asia	19	18	18	19	19	20	18	16
Europe	13	10	11	10	12	12	13	13
Middle East	82	72	73	71	64	57	58	64
Western Hemisphere	8	7	6	5	6	7	8	7

<sup>1/</sup> The source of the interbank data is the regular reporting of resident banks' external positions to the Fund by the authorities of over 100 countries. The nonbank debt to international banks is drawn from detailed geographic analyses of resident deposit banks' claims on nonresidents provided by the authorities of Australia, Bahrain, Belgium, Canada, Denmark, France, Germany, Hong Kong, Ireland, Italy, Japan, Luxembourg, the Netherlands, Singapore, Sweden, Switzerland, the United Kingdom, and the United States (the U.S. authorities also provide reports for the branches of U.S. banks in the Bahamas, the Cayman Islands, and Panama). The following offshore centers are included: Africa--Liberia; Asia--Hong Kong and Singapore; Middle East--Bahrain and Lebanon; and Western Hemisphere--Bahamas, Cayman Islands, Netherlands Antilles, and Panama.

bank debt have been similar for various country groups, showing a substantial decline from 1981 to 1982 and little change since then. For the capital-importing developing countries, the ratio of non-gold reserves to debt service payments fell from an average value of 140 percent in the period 1978-80 to 84 percent in 1982. Although the rebuilding of reserves raised this ratio to 107 percent in 1984, it fell to 98 percent by the end of 1985.

The recent movements in the stock of non-gold reserves and in the ratios of reserves to various scale variables tend to support the conclusion that, following a significant deterioration in their reserve positions in 1982, all country groups achieved some improvement in their reserve position during the years 1983 and 1984. It appears, however, that this trend has not been maintained in 1985.

## II. SDR Allocations and the Position of the SDR in Non-Gold Reserves

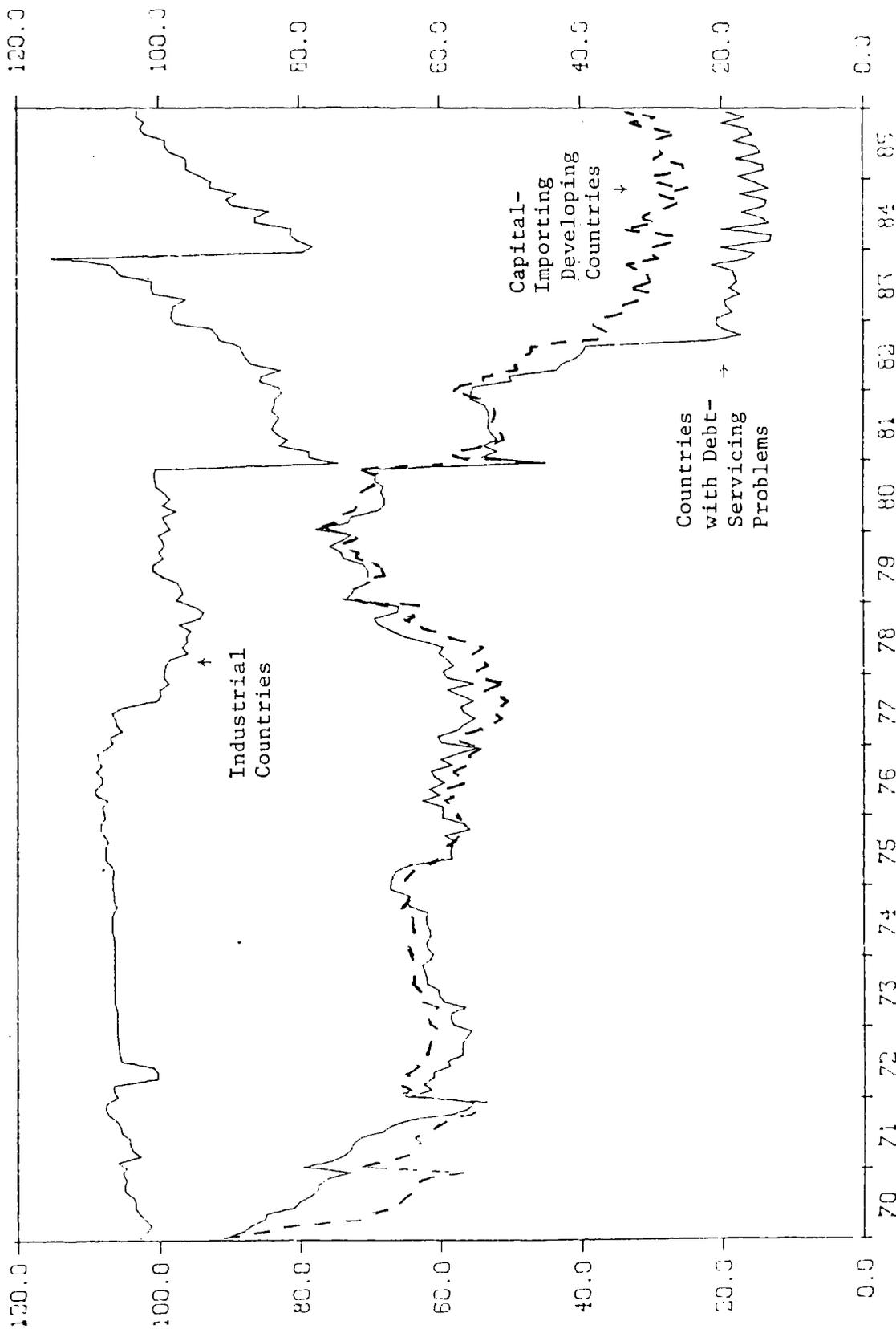
The relative position of the SDR in non-gold reserves naturally has been influenced both by the scale of SDR allocations and by developments in international reserves and liquidity. The scale and timing of previous SDR allocations are shown in Table 3. Allocations of SDRs occurred during the first (1970-72) and third (1978-81) basic periods. There were no allocations in the second basic period, and, to date there has been none in the fourth basic period. While the initial SDR allocation of SDR 3.4 billion in 1970 represented 6.1 percent of non-gold reserves, the most recent allocation of SDR 4.0 billion in 1981 represented only 1.2 percent of non-gold reserves. Total cumulative SDR allocations as a percent of non-gold reserves reached a peak value of 8.4 percent at the end of the first basic period and then declined to 3.8 percent at the end of 1978. The allocations of the third basic period, which ended in 1981, raised cumulative SDR allocations to SDR 21.4 billion, and increased the share of SDRs in total non-gold reserves to 6.5 percent at the end of 1982. In the absence of allocations during the fourth basic period, this percentage will decline to 5.4 percent by the end of the fourth basic period at the end of December 1986, if the ratio of non-gold reserves to imports remained at its average value for the period 1974-85 and imports developed in line with World Economic Outlook (WEO) projections.

During the 1970s and 1980s, the use of allocated SDRs by countries has changed the distribution of holdings of SDRs among major country groups. In the period 1971-81, for example, holdings of SDRs by developing countries as a percentage of their total allocations remained at about 60 percent, except at the end of 1980, when SDRs were used to finance the asset portion of the quota subscriptions made in connection with the Seventh General Review of Quotas (Chart 3). The holding of

Table 3. SDR Allocations and Cumulative SDR Allocations  
Relative to Non-Gold Reserves, 1970-85

Basic Period		SDR Allocations	Cumulative SDR Allocations	
		(In billions of SDRs)	(In percent of non-gold reserves at year-end)	
1970	First	3.4	6.1	6.1
1971	First	3.0	3.4	7.3
1972	First	3.0	2.7	8.4
1973	Second	--	--	8.4
1974	Second	--	--	6.5
1975	Second	--	--	5.9
1976	Second	--	--	5.0
1977	Second	--	--	4.1
1978	Third	--	--	3.8
1979	Third	4.0	1.5	4.9
1980	Third	4.0	1.2	5.4
1981	Third	4.0	1.2	6.5
1982	Fourth	--	--	6.5
1983	Fourth	--	--	5.9
1984	Fourth	--	--	5.3
1985	Fourth	--	--	5.4

Chart 3. Ratio of SDR Holdings to Cumulative SDR Allocations for Selected Country Groups





SDRs as a percentage of total allocations for the industrial countries remained at about 100 percent until the quota subscription payments at the end of 1980, when it dropped to approximately 80 percent. During the fourth basic period, beginning in 1982, however, the holdings of SDRs relative to allocations for the group of capital-importing developing countries fell from nearly 60 percent to approximately 30 percent. The corresponding ratio for the capital-importing countries with debt-servicing problems fell to about 20 percent. In contrast, while the SDR holdings of the industrial countries relative to their allocation fell in 1983, when SDRs were used to finance the asset portion of their quota subscription payment under the Eighth General Review of Quotas, their holdings recovered to about 100 percent of cumulative allocations by the end of 1985. The holdings of SDRs by industrial countries as percentage of their non-gold reserves rose from 4.8 percent in 1980 to 6.6 percent in 1985, while the corresponding percentage for capital-importing developing countries declined from 2.6 to 1.7 percent (Table 4). The fact that these developing countries replenished their non-gold reserves following the drop in reserves in 1982 without restoring their SDR holdings indicates that, in the absence of further improvement in the reserve characteristics of the SDR, these countries prefer to hold reserves in the form of financial assets other than SDRs.

### III. The Role of the SDR in Light of Changes in the International Monetary System

When the SDR system was established in the late 1960s, the principal purpose intended for the SDR was to supplement international reserves to help meet the long-term global need for reserves. A secondary role for the SDR was to provide confidence in the continued convertibility of claims on the reserve-currency countries into gold. In addition, it was viewed by some as a means of reducing the alleged asymmetric advantage derived by the reserve-currency countries from their ability to finance official settlements deficits by issuing claims denominated in their own currencies. <sup>1/</sup>

Despite the extensive structural changes in the international monetary system during the 1970s, the Second Amendment to the Articles of Agreement stressed the continuing importance of the SDR as part of the

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<sup>1/</sup> See SM/85/340, "Implications of Changes in the International Monetary System for the Role of SDR," for a detailed discussion of the evolution of the role of the SDR.

Table 4. Holdings of SDRs by All Participants and by Groups of Countries as Percent of Their Cumulative Allocations of SDRs and as Percent of Their Non-Gold Reserves <sup>1/</sup>

	All Participants <sup>2/</sup>	Industrial Countries	Developing Countries				
			All Developing Countries	Capital-Exporting	Capital-Importing		
					All Capital-Importing Countries	With Recent Debt-Servicing Problems	Without Recent Debt-Servicing Problems
<u>Holdings of SDRs as percent of cumulative allocations</u>							
1970	91.5	105.2	55.8	4.8	56.9	72.8	34.7
1971	92.3	107.6	52.7	24.1	53.6	55.7	50.8
1972	93.3	106.0	60.5	68.0	60.2	56.2	65.6
1973	94.5	106.4	64.1	67.3	64.0	61.5	67.3
1974	95.1	106.6	65.4	79.6	64.9	67.3	61.8
1975	94.1	107.7	59.0	92.5	57.8	60.0	54.9
1976	92.9	107.4	55.6	108.4	53.8	53.6	54.0
1977	87.3	99.4	56.1	121.7	53.9	58.2	48.0
1978	87.1	95.3	65.9	166.0	62.5	64.9	59.2
1979	93.5	100.2	77.7	167.6	71.6	71.9	71.2
1980	67.9	74.7	53.2	133.0	46.0	44.4	48.1
1981	76.6	82.6	64.0	122.9	58.0	54.7	62.0
1982	82.8	97.6	52.2	186.8	38.4	20.8	59.7
1983	67.2	79.8	41.4	165.6	28.7	15.2	44.9
1984	76.8	92.5	44.4	185.2	30.0	15.1	47.9
1985	85.0	103.1	47.5	186.6	33.3	19.1	50.4
<u>Holdings of SDRs as percent of non-gold reserves</u>							
1970	5.6	6.7	3.1	0.0	3.6	5.7	1.7
1971	6.7	7.5	4.3	0.3	5.4	7.3	3.9
1972	7.8	8.9	4.9	0.9	6.0	6.6	5.3
1973	7.5	9.2	4.2	0.8	4.9	5.3	4.5
1974	6.1	9.1	2.5	0.3	3.9	4.2	3.6
1975	5.5	8.6	2.0	0.2	3.4	3.7	3.1
1976	4.6	7.8	1.5	0.2	2.5	2.8	2.2
1977	3.5	5.6	1.3	0.2	2.1	2.9	1.5
1978	3.3	4.5	1.7	0.4	2.3	3.1	1.7
1979	4.6	6.1	2.6	1.1	3.4	4.3	2.6
1980	3.7	4.8	2.1	1.3	2.6	3.3	2.1
1981	5.0	6.4	3.1	1.6	3.9	5.4	2.9
1982	5.4	7.6	2.6	2.3	2.7	3.0	2.6
1983	4.0	5.6	1.9	2.1	1.7	1.8	1.7
1984	4.1	6.0	1.7	2.5	1.5	1.2	1.6
1985	4.6	6.6	1.9	2.5	1.7	1.6	1.7

<sup>1/</sup> Source: International Monetary Fund, International Financial Statistics.

<sup>2/</sup> This category consists of all participants in the IMF's SDR Department. The part of cumulative allocations not held by the group of participants is held by the Fund (SDR 3.2 billion in 1985) and by other holders (SDR 0.2 billion in 1985).

reserve system. 1/ The criteria that must be satisfied before an allocation can take place are set out in Article XVIII, Section 1(a) of the Articles of Agreement:

In all its decisions with respect to the allocation and cancellation of special drawing rights, the Fund shall seek to meet the long-term global need, as and when it arises, to supplement existing reserve assets in such manner as will promote the attainment of its purposes and will avoid economic stagnation and deflation as well as excess demand and inflation in the world.

In accordance with this provision, the allocation of SDRs must further the attainment of the Fund's purposes as stated in Article I of the Fund agreement. 2/ These purposes include the balanced growth of international trade, a stable system of exchange rates, and the avoidance of competitive depreciation.

Structural changes in the international financial system have made it increasingly difficult to determine on quantitative grounds alone whether there is a long-term global need to supplement international reserves. International capital markets have developed to such an extent

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1/ The relevant provisions are as follows:

Article VIII, Section 7--Each member undertakes to collaborate with the Fund and with other members in order to ensure that the policies of the member with respect to reserve assets shall be consistent with the objectives of promoting better international surveillance of international liquidity and making the special drawing right the principal reserve asset in the international monetary system.

Article XXII--In addition to the obligations assumed with respect to special drawing rights under other articles of this Agreement, each participant undertakes to collaborate with the Fund and with other participants in order to facilitate the effective functioning of the Special Drawing Rights Department and the proper use of special drawing rights in accordance with this Agreement and with the objective of making the special drawing right the principal reserve asset in the international monetary system.

2/ Article I of the Fund Agreement provides in part as follows.

The purposes of the International Monetary Fund are:

- (i) ...
- (ii) To facilitate the expansion and balanced growth of international trade, and to contribute thereby to the promotion and maintenance of high levels of employment and real income and

that creditworthy countries can issue debt denominated in any of the reserve currencies and can thereby quickly adjust the level and currency composition of their reserves. Thus, under normal conditions, there is neither a shortage nor an excess of reserves in purely quantitative terms for the group of countries regarded as creditworthy in international credit markets.

In view of the growing importance of borrowed reserves, it has been recognized that "the adequacy of international liquidity can no longer be assessed primarily on the basis of recorded reserve holdings, but must also take account of countries' creditworthiness." <sup>1/</sup> Perhaps the most serious deficiency of a system in which countries rely on borrowed reserves is that their availability has been unreliable during periods of greatest need for reserves. In considering the performance of the reserve system, some G-10 Deputies expressed concern about "...sudden and marked shifts in the terms and conditions on which international liquidity has been made available, late recognition and abrupt response to changes in creditworthiness." <sup>2/</sup> At such times, as already noted, countries without access to international markets can acquire reserves only through surpluses on current account or receipt of official and nonbank private capital flows. The adjustments in policies needed to generate current account surpluses in excess of those required to service external debt can impose a high real cost of acquiring reserves. Uncertainties about the terms and conditions under which reserves would be available have led countries to try to increase their owned reserves, even though this has often required a sharp contraction in imports. For example, the rebuilding of reserves by developing countries was associated with the emergence of an external payments surplus on current account excluding investment income of more than SDR 5 billion in 1985, which is one manifestation of the strain imposed by liquidity considerations on adjustment policies and economic growth. In part, considerations regarding the high cost of acquiring reserves for countries without access to private financial markets led the G-24 Deputies to advocate SDR allocations "to enable nonreserve countries to acquire reserves without having to generate balance of payments surpluses." <sup>3/</sup>

Concerns regarding the importance of "owned" and "borrowed" reserves were also a part of earlier discussions of using SDR allocations to help improve the quality of reserves. In the proposal for an allocation of

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<sup>2/</sup> (Cont'd from p. 15) to the development of the productive resources of all members as primary objectives of economic policy.

(iii) To promote exchange stability, to maintain orderly exchange arrangements among members, and to avoid competitive exchange depreciation.

<sup>1/</sup> G-10 report, para. 59.

<sup>2/</sup> Ibid., para. 63.

<sup>3/</sup> G-24 report, para. 98.

special drawing rights for the third basic period in 1978, for example, the Managing Director noted that:

While it is true that most countries have a means for satisfying their need for reserves when international capital markets are as free as they are today, the decision to allocate special drawing rights does not depend on a finding that the long-term global need cannot be met except by allocation. A characteristic of a system in which countries add to their gross reserves as their international indebtedness increases is that they are faced with the need for periodic refinancing. This difficulty does not arise when additions to net reserves are made through allocation of special drawing rights. 1/

Developments since the emergence of external payments difficulties for many countries since 1982 indicate that these concerns are still relevant, and that the SDR can make significant contributions to the efficiency and stability of the international reserve system 2/ through improving the quality of reserves by increasing the proportion of owned reserves.

In addition, SDR allocations may serve the role of a safety net for the international financial system. In this vein, the G-10 report notes that one of the contingencies under which the SDR could play its role as safety net would be "...the possibility of private markets being unable to respond adequately to a legitimate long-term global need for international liquidity." 3/

Since the SDR is defined as a basket of currencies, it has also been argued that it can provide a reserve asset whose value is likely to show less variability than any one of its component currencies. As a result, SDRs can help reduce the risk that central bank currency switching will contribute to exchange rate instability.

The potential benefits of SDR allocations must be weighed against their potential costs. On the occasion of previous discussions of SDR allocations, concerns have been expressed that an SDR allocation in the current multiple-currency reserve system could be inflationary. These concerns were also noted by some G-10 Deputies who remain "...concerned that regular SDR allocations would result in unnecessary and excessive liquidity creation." 4/ For example, if the SDRs allocated to developing

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1/ Allocation of Special Drawing Rights for the Third Basic Period: Proposal of the Managing Director of the International Monetary Fund, Annual Report, 1979, pp. 123-27.

2/ See SM/86/17, "The Potential Contribution of the SDR to Economic Stability," for a discussion of related issues.

3/ G-10 report, para. 72.

4/ Ibid., para. 76.

countries were spent on goods in the industrial countries, this increased demand for goods would put upward pressure on prices. However, the extent of this inflationary pressure depends both on the size of the allocations and on whether the industrial countries allow their monetary bases to expand in line with their receipt of SDRs. The most inflationary situation would arise if the monetary bases of the industrial countries were allowed to reflect fully the receipt of SDRs from developing countries. 1/ In contrast, the effects on inflation of such a transfer of SDRs would be much more limited if the rates of growth of monetary aggregates in the industrial countries were kept within their target ranges. Alternatively, an SDR allocation could also have an inflationary impact if the SDRs allocated to developing countries were exchanged by the government for domestic credit at the central bank. Nonetheless, even if all allocated SDRs were monetized, there would be only limited increases in the domestic monetary bases. 2/ These considerations suggest that SDR allocations designed to meet the long-term global need for reserves are not likely to be inflationary or to create expectations of higher inflation, especially in a situation where the monetary authorities in the industrial countries generally achieve their announced monetary targets. 3/ There is also the possibility, as discussed in the recent paper on the contribution of the SDR to economic stability, 4/ of providing in any decision to allocate SDRs for subsequent cancellation of SDRs on prearranged conditions.

It has been argued that SDR allocations of significant magnitude could lead to a relaxation of the stabilization efforts now being undertaken by countries with adjustment programs. In particular, some Deputies of the G-10 have suggested "that [allocations] might result in delaying necessary adjustment." 5/ There are, however, strong incentives for such countries to maintain their adjustment efforts, since the availability of new bank money and the willingness of creditors to make appropriate reschedulings depend upon continued progress in adjustment. While modest SDR allocations could reduce the cost of acquiring and holding reserves, especially for countries without access to international financial markets, the efforts of many developing countries to rebuild their reserve holdings in the face of adverse economic conditions suggest that such allocations would be unlikely to remove the incentive for undertaking current adjustment efforts designed to restore sustainable balance of payments positions and normal access to international financial markets.

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1/ In this case a total allocation of SDR 10 billion would increase the monetary base of industrial countries by SDR 3.7 billion, the full share of the allocation received by developing countries, or about 1/2 of 1 percent of the monetary base of the industrial countries.

2/ An SDR 10 billion allocation in 1985 could increase the monetary base of developing countries by less than 1.5 percent.

3/ See SM/81/4, "Considerations Relating to the Size of SDR Allocations in the Fourth Basic Period," for a more detailed discussion of these issues.

4/ SM/86/12, p. 22.

5/ G-10 report, para. 74.

IV. Estimates of the Long-Term Global Need for Reserves

This section contains a quantitative assessment of the long-term global need for reserves for selected groups of countries during a fifth basic period, extending from the beginning of 1987 to the end of 1991. The continuing expansion of world trade and output that is projected in the WEO implies an increase in the long-term global need for reserves. Future reserve needs can be estimated by applying the long-run average ratio of reserves to imports to the projected value of imports. During the 12-year period from 1974 to 1985, the average ratios of non-gold reserves to imports for all countries, for industrial countries, and for capital-importing developing countries were 21 percent, 17 percent, and 25 percent, respectively. These ratios have remained within relatively narrow ranges during this period, and all were within 1 percent of the ratios in 1985 (see Table 1), providing strong evidence of a relatively stable relationship between non-gold reserves and imports.

The current WEO exercise projects a continuing increase in the SDR value of world trade during the fifth basic period. <sup>1/</sup> If the reserve holdings of industrial countries and capital-importing developing

<sup>1/</sup> The growth rates of the SDR value of imports are composed of changes in volume and price (in SDRs) as follows:

(In percent)

	1984	1985	1986	1987	1988-91
All countries					
Volume	9.7	3.4	3.9	3.8	4.0
Price	1.2	-0.9	-3.5	3.0	3.5
Value	11.0	2.4	0.2	7.0	7.5
Industrial countries					
Capital					
Volume	13.1	4.8	5.6	4.2	5.5
Price	0.4	-1.1	-3.1	3.0	2.0
Value	13.6	3.6	2.3	7.3	7.5
Capital-importing developing countries					
Volume	4.5	2.8	1.8	3.9	5.0
Price	3.1	-0.8	-5.1	3.2	3.0
Value	7.8	1.9	-3.3	7.2	8.0

Sources: International Monetary Fund, World Economic Outlook; staff estimates.

countries rose at a rate that would keep the ratio of non-gold reserves to imports constant at the average for 1974-85, they would increase by SDR 105 billion and SDR 50 billion, respectively, from the beginning of 1986 to the end of 1991. Under similar assumptions, the total demand for non-gold reserves by all countries would grow by SDR 171 billion, to SDR 568 billion at the end of 1991, the normal end of the fifth basic period.

The effects of various hypothetical SDR allocations on the ratio of cumulative SDR holdings to non-gold reserves are examined in Table 5. For example, if SDRs were allocated during the fifth basic period at a rate of SDR 2 billion per annum, the share of SDRs in non-gold reserves would rise to 5.8 percent at the end of 1991. In order to raise the proportion of SDRs in non-gold reserves to its 1973 peak value of 8.3 percent, allocations at a rate of SDR 6 billion would be necessary in the fifth basic period. Allocation at the rate of SDR 15 billion per annum, as recommended by the G-24 Deputies, 1/ would meet about one third of the estimated increases in non-gold reserves during the fifth basic period and would raise the share of SDRs in total reserves to 16.4 percent at the end of that period.

Table 5. Hypothetical SDR Allocations and Ratio to Non-Gold Reserves of All Countries

SDR Allocation Annual amount	Total amount 1987-91	Percentage of Projected Reserve Growth Provided by New SDR Allocation at Year-End 1991	Cumulative SDR Holdings Relative to Non-Gold Reserves at Year-End 1991
	(In billions of SDRs)		(In percent)
2.0	10.0	5.8	4.9
6.0	30.0	19.9	8.3
15.0	75.0	43.9	16.4

1/ G-24 report, para. 101.

SDRs are allocated to member countries in proportion to their quotas. Accordingly, industrial countries would receive 63 percent of any allocation, capital-importing developing countries would receive 30 percent, and capital-exporting developing countries would receive 7 percent. The estimate of the need for reserves reported above implies that the increases in the demand for reserves over the next five years for the industrial countries would represent 62 percent of the increase in the demand for reserves by all countries, while the increase in the demand for reserves by capital-importing countries would be 29 percent of the total increase in the demand for reserves. Thus, allocations of SDRs according to the size of members' quotas would be approximately proportional to the estimated global need for additional reserves during the period 1986-91.

#### V. Summary

The level of non-gold reserves fell in 1985 in absolute terms and in relation to imports. The projected expansion of world trade and financial flows during the fifth basic period and the relative stability of the ratios of reserves to imports imply a growing long-term global demand for reserves. In the absence of SDR allocations, much of this increased demand for reserves would be satisfied by borrowing in international credit markets and would thus result in greater dependence on borrowed reserves by those countries that are regarded as creditworthy. Such greater reliance on international capital markets as a source of reserves exposes the reserve system to the possibility of abrupt changes in the terms and conditions under which countries may obtain reserves. Countries without access to international capital markets would be required to pay the high cost of acquiring reserves through balance of payments surpluses. An allocation of SDRs, on the other hand, could supply reserves not subject to these costs and reduce the vulnerability of the reserve system to disturbances in financial markets. Moreover, the inflationary danger of increasing the SDR component of reserves is minimal, especially at the present time, and there is little likelihood that allocations of modest amounts through the fifth basic period would induce delays in necessary balance of payments adjustments.

