IMF WORKING PAPER

WP/88/33

INTERNATIONAL MONETARY FUND

Research and Treasurer's Departments

Does the SDR System Generate Permanent Resource Transfers?

Prepared by Warren L. Coats, Jr. (TRE),
Reinhard W. Furstenberg (TRE),
and Peter Isard (RES)

April 14, 1988

Abstract

The paper analyzes whether the SDR system generates permanent resource transfers--i.e., transfers of resources that do not involve equivalent quid pro quos. It is argued that SDR allocation only gives rise to permanent resource transfers if the SDR interest rate is uncompetitive or if holding SDRs is perceived to be risky, and that the use of SDRs gives rise to permanent resource transfers only if the SDR interest rate is uncompetitive. These conclusions are reconciled with the fact that SDR allocation can provide reserves to many countries at terms more favorable than the costs of borrowing or earning reserves.

JEL Classification Numbers
4310,4320

Contents

Summary

The paper presents an analytic framework for evaluating the resource transfers that take place in the SDR system. The analysis focuses on the exchanges of real resources (goods and services) and financial resources (financial assets) that may result from the allocation or use of SDRs. The implications of an exchange of one type of resource for another depend on whether the present discounted values of the two types are equivalent. Permanent resource transfers are defined as occurring when exchanges do not involve equivalent quid pro quos. Typically, the occurrence of permanent resources transfers is associated with grants or loans at concessional interest rates.

Many countries have maintained holdings of SDRs at levels considerably lower than their cumulative allocations. Such prolonged net use of SDRs raises the issue of whether the SDR system has generated permanent resource transfers. In addressing this issue, permanent resource transfers that may result from the prolonged net use of SDRs must be distinguished from permanent resource transfers that may arise from the allocation of SDRs.

The paper argues that the net use of SDRs does not involve permanent resource transfers unless the SDR interest rate is uncompetitive with yields on other reserve assets--that is, unless the SDR interest rate differs from yields on other reserve assets by amounts that do not compensate for differences in the characteristics of the assets. Moreover, insofar as the SDR interest rate is competitive, the allocation of SDRs does not give rise to permanent resource transfers unless holding SDRs is perceived as risky.

These conclusions must be reconciled with the fact that, for many countries, SDR allocation provides resources at terms more favorable than the costs of borrowing or earning reserves. Insofar as the SDR interest rate is competitive and holding SDRs is not risky, the resource gain or savings for a country from its own individual allocation of SDRs does not impose losses on other countries. Instead it represents either a welfare gain for the international economy as a whole or a resource savings offset by losses arising from the country's transactions outside the SDR system. The extent to which the SDR system can provide welfare gains for the international economy as a whole requires further analysis.

I. Introduction

More than two decades have elapsed since the Board of Governors of the Fund approved the outline of a plan for creating the Special Drawing Right (SDR), and it has now been a decade since the Second Amendment to the Fund's Articles incorporated an agreement to make the SDR "the principal reserve asset in the international monetary system." 1/ Yet, over the past two decades, SDRs have only been allocated during two periods of three years each. At present, the existing stock of SDRs represents less than 5 percent of the non-gold reserve holdings of members of the Fund.

One of the obstacles to SDR allocation has arisen from the fact that some countries have made net use of their allocations on a prolonged basis. In this context, opposition to SDR allocation has developed in part from the sense that the SDR system has "tranferred resources" to countries making prolonged net use of SDRs at the expense of other countries. This paper attempts to clarify this issue by presenting a framework for analyzing the implications for resource transfers of the pattern of holding and use of SDRs. Data on the pattern of SDR holding and use are reviewed in Section II, and several concepts of resource transfers are distinguished in Section III. Section IV then examines the issue of real resource transfers in the SDR system. This is followed, in Section V, with an analysis of whether permanent resource transfers take place in the SDR system and, in Section VI, with a discussion of permanent resource transfers outside the SDR system. Section VII provides some concluding remarks.

II. Data on the Pattern of Holding and Use of SDRs

Data on international reserves reveal a wide dispersion in countries' holdings of SDRs, both in relation to their cumulative allocations and as a proportion of their total non-gold reserves (Table 1). At the end of 1987, the level of SDR holdings relative to cumulative allocations, on average, was 114 percent for the industrial countries, 180 percent for the capital-exporting developing countries, and 41 percent for the capital-importing developing countries. These holdings amounted, on average, to 5.1 percent of non-gold reserves for the industrial countries, 3 percent for the capital-exporting developing countries, and 1.8 percent for the capital-importing developing countries.

1/ For a discussion of the evolution of the SDR, see Margaret Garritson de Vries, The International Monetary Fund 1966-1971, Washington, D.C.: International Monetary Fund, 1976. For a discussion of the Second Amendment, see Margaret Garritson de Vries, The International Monetary Fund 1972-1978: Cooperation on Trial, Washington, D.C.: International Monetary Fund, 1985.

Table 1. 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, End of Years, 1970-87

	All Participants 1/	Industrial Countries	Developing Countries			
				Capital-Importing		
			Capital-exporting	All capital-importing countries	With recent debt-servicing problems	Without recent debt-servicing problems
			(Holdings of SDRs as percent of cumulative accumulations)			
1970	91.5	105.2	4.8	56.9	72.9	34.3
1971	92.3	107.6	24.1	53.6	55.9	50.4
1972	93.3	106.0	68.0	60.2	56.4	65.4
1973	94.5	106.4	67.3	64.0	61.6	67.2
1974	95.1	106.6	79.6	64.9	67.4	61.6
1975	94.1	107.7	92.5	57.8	60.2	54.7
1976	92.9	107.4	108.4	53.8	53.8	53.8
1977	87.3	99.4	112.7	53.9	58.3	47.8
1978	87.1	95.3	166.0	62.5	65.0	59.1
1979	93.5	100.2	167.6	71.6	71.9	71.2
1980	67.9	74.7	133.0	45.9	44.4	47.9
1981	76.6	82.6	122.9	58.0	54.7	62.1
1982	82.8	97.6	186.8	38.4	20.9	59.7
1983	67.2	79.8	165.6	28.5	15.4	44.5
1984	76.8	92.5	185.2	29.8	15.2	47.7
1985	85.0	103.1	186.6	33.2	19.2	50.3
1986	91.0	111.4	166.8	36.7	19.8	57.3
1987	94.3	113.7	180.6	41.1	35.2	48.3
			(Holdings of SDRs as percent of non-gold reserves)			
1970	5.9	6.7	--	3.6	5.7	1.7
1971	7.0	7.5	0.3	5.4	7.6	3.7
1972	8.2	8.9	0.9	6.0	7.2	5.0
1973	7.8	9.2	0.8	5.0	6.0	4.1
1974	6.3	9.1	0.3	3.9	4.4	3.4
1975	5.7	8.6	0.2	3.4	3.8	2.9
1976	4.9	7.8	0.2	2.5	2.8	2.1
1977	3.7	5.6	0.2	2.2	2.8	1.6
1978	3.5	4.5	0.4	2.3	3.0	1.7
1979	4.8	6.1	1.1	3.4	4.1	2.7
1980	3.8	4.8	1.3	2.6	3.2	2.1
1981	5.3	6.4	1.6	3.8	5.3	3.0
1982	5.8	7.6	2.3	2.7	3.0	2.5
1983	4.3	5.6	2.1	1.7	1.9	1.6
1984	4.4	6.0	2.5	1.4	1.2	1.5
1985	4.9	6.5	2.5	1.6	1.7	1.6
1986	5.4	6.5	2.7	1.8	2.2	1.7
1987	4.7	5.1	3.0	1.8	3.9	1.2

Source: International Monetary Fund, International Financial Statistics.

1/ This group consists of all participants in the IMF's SDR Department. The part of cumulative allocations not held by this group is held by the Fund (SDR 1.2 billion at the end of 1987) and other prescribed holders (SDR 47 million at the end of 1987).

The capital-importing developing countries as a group have been persistent net users of SDRs since the beginning of 1970, when the first allocations were made (Chart 1). The ratio of their SDR holdings to cumulative allocations remained fairly constant throughout most of the 1970s and rose significantly in 1978-79, partly reflecting the resumption of allocations in January 1979. In 1980, both the capital-importing developing countries and the industrial countries reduced their SDR holdings relative to cumulative allocations in connection with the payment of subscriptions for quota increases resulting from the Seventh General Review of Quotas, which became effective in November of that year. The SDR holdings of capital-importing developing countries were drawn down considerably more during the period 1982-83 in association with relatively heavy use of reserves following the emergence of the debt crisis and rising requirements to use SDRs in the payment of obligations to the Fund.

The subscription payments at the end of 1983 resulting from the Eighth General Review of Quotas brought about a second sharp drop in the SDR holdings of industrial countries; comparable declines were not observed for the other groups, most of whose members first made separate transactions to acquire the SDRs used for their subscription payments. Since the end of 1983, despite further substantial increases in payments of SDRs to the Fund, the SDR holdings of capital-importing developing countries, and of the subset of those facing debt-servicing problems, have risen modestly as proportions of net cumulative allocations and non-gold reserves (Chart 2), but have remained at relatively low levels.

The extent to which countries have made prolonged net use of SDRs can be characterized in terms of their ratios of average net use to average net cumulative allocations over five-year periods. The choice of a five-year averaging period is suggested by the reconstitution requirement contained in the Fund's Articles of Agreement, as described in Schedule G, Section 1(a)(i). Under this requirement prior to 1979, the average of a participant's total daily holdings of SDRs over any period of 20 successive calendar quarters was not permitted to fall below 30 percent of the average of its daily net cumulative allocations of SDRs over the same period. Thus, average net use of SDRs was not permitted to exceed 70 percent of average net cumulative allocations. In 1979, the minimum holdings percentage was reduced to 15 percent, and in 1981 the reconstitution requirement was abrogated.

Since the abrogation of the reconstitution requirement, there has been a sharp increase in the percentage of participants whose average daily net use of SDRs has exceeded the previous threshold of 70 percent of their average net cumulative allocations over five-year averaging periods (Table 2). During the five years ended on December 31, 1987, 65 percent of all participants made average net use of more than 70 percent of their cumulative allocations, including more than one fifth of the industrial countries, one fourth of the capital-exporting

Table 2. Distribution of Participants by Average Proportional Net Use of Cumulative Allocations over Five-Year Periods Ending in Selected Years

	1976	1978	1980	1982	1984	1987
	(Percent of participants) 1/					
All participants						
70 to 100 percent net use	2	3	16	39	50	65
40 to 70 percent net use	46	54	35	19	16	8
0 to 40 percent net use	29	24	27	22	17	11
Excess net holdings	23	19	22	20	18	17
Industrial countries						
70 to 100 percent net use	5	5	5	16	16	21
40 to 70 percent net use	5	26	16	5	11	5
0 to 40 percent net use	32	16	26	37	32	37
Excess net holdings	58	53	53	42	42	37
Capital-exporting developing countries						
70 to 100 percent net use	33	33	14	13	13	25
40 to 70 percent net use	0	0	0	0	0	0
0 to 40 percent net use	0	0	0	38	25	0
Excess net holdings	67	67	86	50	63	75
Capital-importing developing countries with recent debt-servicing problems						
70 to 100 percent net use	4	5	24	63	78	90
40 to 70 percent net use	59	63	46	16	10	3
0 to 40 percent net use	27	23	21	13	8	2
Excess net holdings	11	9	10	8	5	5
Capital-importing developing countries without recent debt-servicing problems						
70 to 100 percent net use	3	3	14	25	37	60
40 to 70 percent net use	49	57	33	31	27	13
0 to 40 percent net use	29	29	37	25	21	13
Excess net holdings	20	11	16	19	15	13
Memorandum item:	(Percent of cumulative allocations) 2/					
IMF holdings of SDRs	7.1	12.9	32.1	17.2	23.1	5.6

1/ The numbers for each year describe the distribution over the five-year period ending in that year, consistent with the definition of the reconstitution requirement. Participants with net cumulative allocations of zero during any period are excluded for that period. Entries that fall on a border line between two ranges are included in the lower range. Column sums may not equal 100 because of rounding.

2/ End-of-year data.

Chart 1. SDR Holdings as Percent of Cumulative SDR Allocations for Selected Country Groups

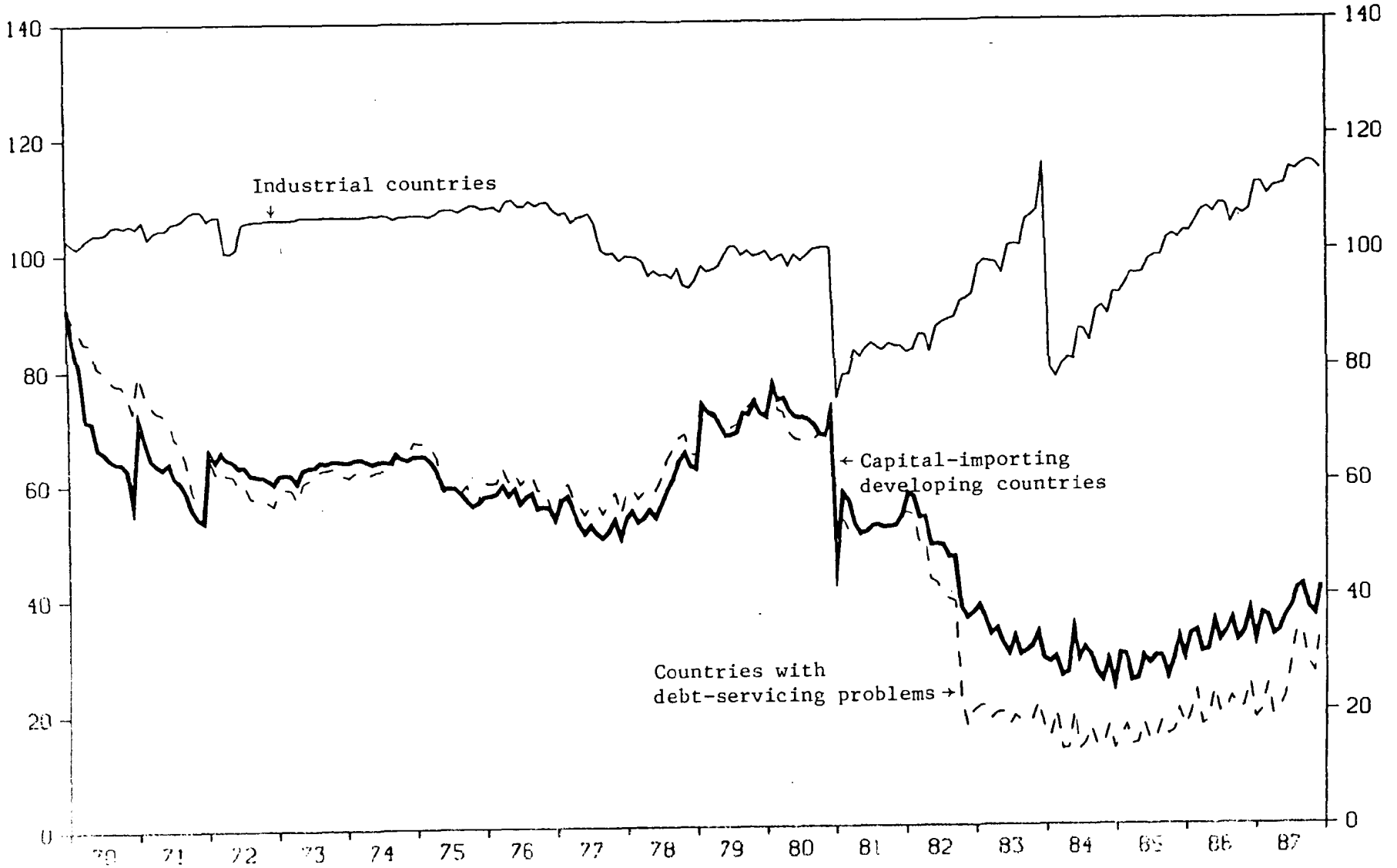
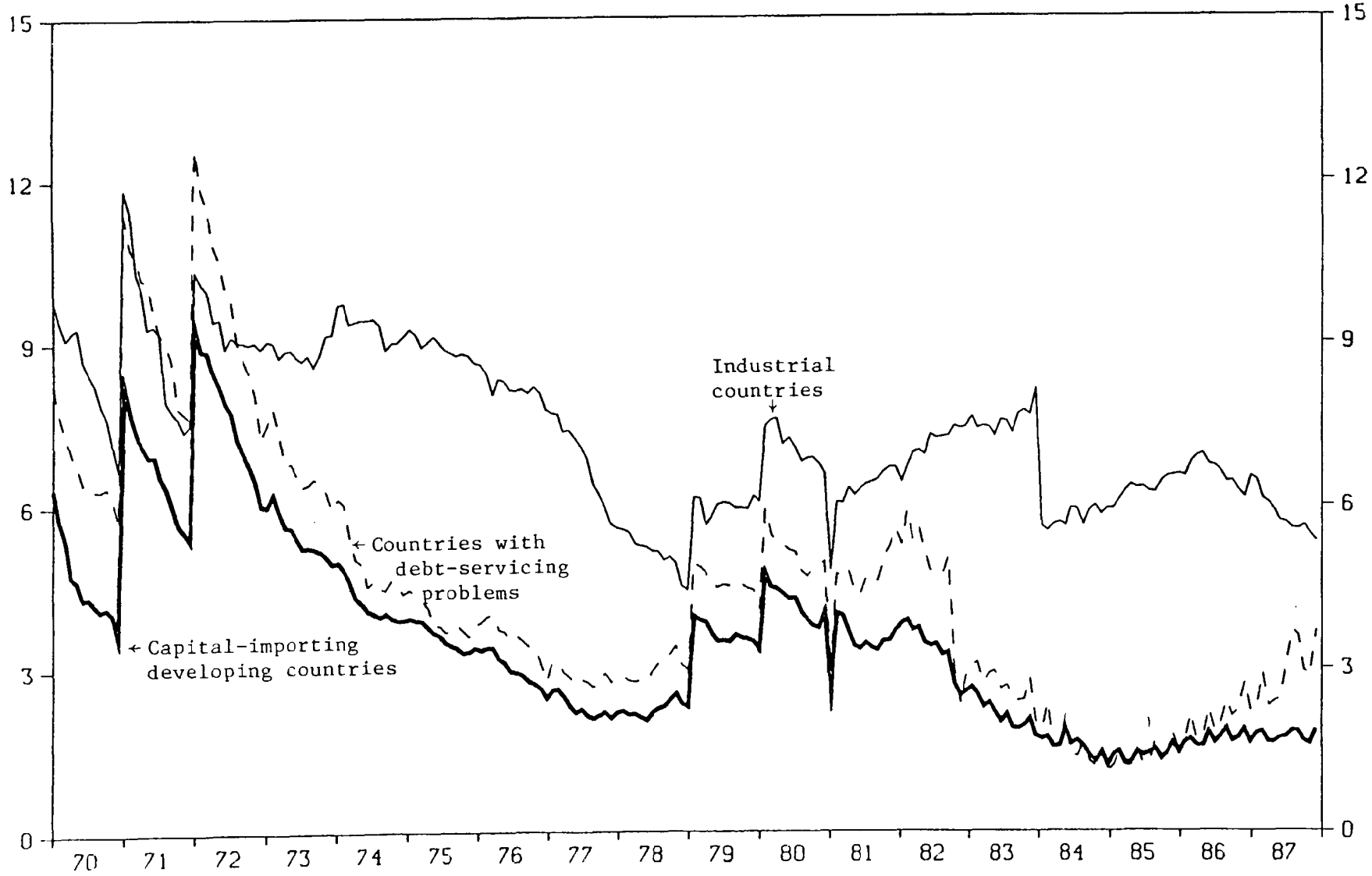


Chart 2. SDR Holdings as Percent of Non-Gold Reserves for Selected Country Groups



developing countries, 90 percent of the capital-importing developing countries with recent debt-servicing problems, and 60 percent of the capital-importing developing countries without recent debt-servicing problems. 1/

III. Concepts of Resource Transfers

The prolonged net use of SDRs has raised concerns that the SDR system may give rise to permanent transfers of resources. An analysis of this issue must distinguish between permanent and temporary transfers and should take into account both the real resources and the financial resources that may be transferred.

Resources are transferred whenever goods and services (real resources) or financial assets (financial resources) of any kind change hands. A net transfer of real resources takes place when a transfer of goods and services is not accompanied by a reverse flow of real resources of the same value, as, for example, when goods are exchanged for financial assets. The implications of exchanges of goods for financial assets depend on whether the financial resources received entitle the holder either to obtain an equivalent value of real resources immediately or to acquire real resources in the future having the same present value as the initial transfer of real resources. If this is the case, such exchanges do not involve any permanent transfers of purchasing power over real resources and, in this sense, can be considered to be temporary transfers of real resources. A transfer of resources (whether real resources or claims on real resources) will be considered to be permanent only to the extent that the transfer is not accompanied by an equivalent quid pro quo. 2/

1/ The percentage of participants with average daily SDR holdings in excess of their net cumulative allocations has declined slightly during the 1980s, and the Fund's holdings of SDRs have also declined.

2/ This choice of terminology reflects the view that the principal concern is whether or not transfers are accompanied by equivalent quid pro quos. The definition of a permanent resource transfer as a transfer that is not accompanied by an equivalent quid pro quo makes it natural to define a temporary resource transfer as any transfer that is accompanied by an equivalent quid pro quo. The term "temporary transfer of real resources" has also often been used to refer to the consequences of the temporary use of reserves to finance a balance of payments deficit that is later reversed. This is not the meaning of the term in this paper. The text refers to a net transfer from a one time, never reversed use of reserves as being temporary if the reverse flow of financial resources is equal in value, i.e., bestows a claim on an equal present value of real resources.

Most prominent among the transfers of resources classed as permanent are those recorded in the balance of payments under "official unilateral (or unrequited) transfers," which represent largely grants by one government to another. There are other transactions, however, such as loans at concessional interest rates, in which resources are transferred permanently from one country to another to the extent of the concessional element in the transactions.

In conveying resources from the donor or lender to the recipient, both grants and loans enable the recipient to acquire goods and services over and above the value of the goods and services it currently sells, or to build up claims--reserves and other assets--with which it can buy goods and services in the future. The difference between a grant and a loan is that a resource transfer through a loan gives rise to reverse transfers in the form of a stream of periodic interest payments and repayment of principal, whereas a grant is not accompanied by such reverse transfers.

The question of whether a transfer of resources effected by a loan is completely reversed or not is conventionally addressed by comparing the value of the loan (i.e., the value of the resources obtained) with the present discounted value of the future payments of interest and amortization to which the loan contract gives rise (i.e., the present value of the resources returned). If there were no risk that the borrower would fail to comply fully with the terms of a loan contract, any difference between the size of the loan and the present discounted value of future payments on the loan could be considered to be a grant component of the loan, and to that extent would imply a permanent transfer of resources between the lender and the borrower. 1/

1/ In the absence of risk, lending will take place on a scale that equilibrates the marginal rates of time preference of lenders and borrowers, and the appropriate discount rate for any time horizon will be unambiguous. In the presence of risk, lenders will require different risk premiums to hold claims against different borrowers, and the market will produce a range of interest rates for each maturity. For this situation, this paper follows the convention of discounting the future at a rate that reflects the marginal time preferences of lenders, which can be associated with the interest rate on a "risk free" (or minimum risk) asset. For purposes of analyzing permanent resource transfers in the context of risk (see Section V below), this choice of discount rate is appropriate only if the measure of value of the goods and services initially transferred is taken to exclude the service of accepting risk. Under this approach, the present discounted value of a loan contract (ex ante) will exceed the value of the current real resources obtained by the amount required in the market to compensate lenders for the risk they accept.

IV. Real Resource Transfers in the SDR System

The concepts introduced above will now be applied to analyze the implications of the net use of SDRs for resource transfers. The analysis in the next section will argue that the net use of SDRs does not give rise to permanent resource transfers if the SDR interest rate is competitive. 1/ In the present section, it will be demonstrated that the prolonged net use of SDRs does not necessarily imply that SDRs have been used to acquire real resources even temporarily. The net use of SDRs (prolonged or otherwise) need not reflect even a temporary transfer because the use of SDRs could be for other purposes.

One of the purposes for which a country might use SDRs is to obtain other reserve assets. This would indicate a relative unattractiveness of the SDR at the margin for satisfying the perceived reserve needs or reserve management strategy of that particular country; 2/ such use of SDRs would change the composition but not the level of the member's reserves. 3/ As another possibility, a country might use SDRs to repay debt; indeed, the predominant uses of SDRs have been to pay charges to and to make repurchases from the Fund. 4/ When seen in combination with an allocation, the use of allocated SDRs to service or

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1/ The SDR interest rate is competitive if the marginal holder is indifferent between substituting one SDR for one SDR's worth of any other reserve asset in its reserve portfolio. As a practical matter, this would require an interest rate equal to the market rate on other reserve assets plus whatever premium (or discount) might be required by holders to compensate for differences in the riskiness and other characteristics of the reserve assets.

2/ Survey evidence suggests that the SDR has some characteristics (namely, its safety and stability) that are more attractive than those of other reserve assets and some characteristics (namely, its liquidity and usability) that are less attractive.

3/ It should be noted, however, that under Article XIX, Section 3(a) of the Articles of Agreement, a member does not fulfill the requirement of need associated with transactions with designation if the net use of SDRs is for the sole purpose of changing the composition of its reserves.

4/ Aggregate net use of SDRs from 1970 through September 30, 1987 amounted to only SDR 6.5 billion, while total payments of SDRs to the Fund amounted to SDR 44.1 billion, of which SDR 20.7 billion was for charges and SDR 11.4 billion was for repurchases. On average over the last 3 years in which there were allocations (1979-81), members made net use of SDRs in the amount of SDR 1.4 billion per year, while total payments of SDRs to the Fund averaged SDR 3.4 billion per year, of which SDR 1.6 billion per year was for charges and repurchases.

reduce debt leaves the member's reserves at the pre-allocation level and does not significantly affect the current flow of goods and services between countries. 1/

It may be noted that even if some members use allocated SDRs to repay debt, the use of SDRs by one member generally results in the receipt of SDRs by another member, and does not in the aggregate use up the owned reserves created by the SDR allocation. Thus, regardless of whether some countries make net use of their allocated SDRs, an allocation will lead to an increase in the share of owned reserves in the total reserves of countries in the aggregate. The potential of an allocation for increasing the share of owned reserves in total reserves is often cited as one of the objectives of an allocation.

When the net use of SDRs is associated with purchases of goods and services, the transfer of real resources is paid for at market prices for the goods and services. In addition, the participant purchasing the real resources must make net payments of interest for as long as its net use of SDRs persists. The participants providing real resources in exchange for SDRs receive net interest on the increase in their SDR holdings. To the extent that such net use of SDRs was permanent, moreover, the flows of net interest payments would continue permanently. The question is whether the present discounted value of these flows would correspond to the market value of the real resources acquired through the net use of SDRs. 2/ If so, a quid pro quo results in a claim on goods and services equal in value to the initial flow of real resources facilitated by SDR use. Under this condition, the initial flow of real resources would constitute only a temporary transfer even though the net use of SDRs might be permanent.

Nonetheless, concerns have been expressed that the use of SDRs to acquire goods and services (except for the temporary uses for which reserves are held in the first place) may be contrary to the purpose for which SDRs were created and are allocated--namely, to meet the long-term global need for reserves. It is of interest, therefore, to analyze when SDR allocations will augment reserves or be used to reduce debt or to finance the inflow of goods and services. This will depend on how SDR allocation affects the amount of reserves that countries choose to hold, and how the amount of allocation relates to the additions to their reserves they wish to make.

1/ To the extent that repaying debt reduces debt service payments (i.e., to the extent that the charge on allocations is less than borrowing costs), there will be a modest effect on the flow of goods and services between countries.

2/ Whether the two magnitudes are equal depends on whether the SDR rate of interest coincides with the rate at which market participants discount the future interest payments.

The level of reserves that a country chooses to hold reflects a balance between the marginal benefit that it perceives from having additional reserves and the marginal cost of obtaining them. For any given level of reserves, an increase in the scale of a country's international transactions tends to increase the marginal benefit of adding to reserves, 1/ which is reflected in the fact that countries tend over time to increase their reserve holdings in broad proportion to the scale of their international transactions. In addition, the long-run relationship between the level of reserve holdings and the scale of international transactions will depend importantly on the marginal cost of obtaining reserves. 2/

Different countries face different costs of acquiring reserves through borrowing, reflecting differences in the credit risks that lenders perceive. For some countries the perceived credit risks are so high that new lending is discontinued. All countries, however, have the opportunity to increase their reserve holdings over time by taking measures to reduce their consumption or investment (or to increase their production) in order to augment their net export earnings. If countries with access to international capital markets have carefully evaluated the opportunity costs of borrowing to begin with, they will be indifferent at the margin between acquiring reserves through borrowing and earning reserves through balance of payments adjustment; for these countries the cost of borrowing will measure the marginal cost of adding to reserves in either way. For countries without access to international capital markets, the marginal cost of acquiring reserves is the value of the consumption or investment that must be forgone to increase net exports. For most countries (but not for those countries that can borrow at prime rates), the marginal cost of acquiring reserves either through borrowing or by forgoing current absorption will exceed the rate of charge on the SDR. 3/

1/ This reflects the fact that an increase in the scale of international transactions increases the amount of reserves that would be required to meet a given percentage decline in export earnings relative to import costs.

2/ It may be noted, however, that cyclical or transitory factors may lead to significant fluctuations over time in the level of a country's reserves relative to the scale of its international transactions, reflecting in some cases the effects of sharp adjustments in commodity prices and in other cases the consequences of active intervention to influence exchange rates.

3/ The marginal cost of acquiring reserves through borrowing or net exports reflects the marginal benefit of holding them. The rate of charge on the SDR, however, reflects interest yields on prime-quality reserve assets. The difference between the cost of borrowing and the yields on prime-quality reserve assets reflects the risk premium that the country must pay to borrow, which must also equal the nonpecuniary benefits that the country associates with holding the reserves.

Although SDR allocation provides reserves at a lower cost than that at which they can be acquired through borrowing or current account adjustment, and thus reduces the average cost of obtaining reserves, allocation on the modest scale considered in recent years would not be expected to significantly affect the cost of changing a country's reserve holdings at the margin, since it would not significantly affect the marginal cost of borrowing or current account adjustment. Accordingly, SDR allocation on a modest scale should not, in theory, have a significant effect on the level of reserves that a country demands at any point in time, or on the reserves it is actually observed to hold ex post. 1/

To the extent that SDR allocation does not exceed the total amount of reserves that countries choose to accumulate, SDR allocation is properly analyzed as an alternative to other methods of reserve accumulation. 2/ In these circumstances, SDR allocation will reduce the net export of real resources that would otherwise be needed in order to accumulate the desired amount of reserves. 3/ This, of course, is precisely what SDR allocation is intended to do, as long as the allocation does not exceed the reserve accumulation demanded by members, i.e., is consistent with the long-term global need for reserve supplementation.

By contrast, if some countries were allocated SDRs in excess of the amounts of reserves they chose to accumulate, the excess would tend to be used to reduce borrowing and/or the net outflow of goods and services that they would otherwise have sought in order to accumulate reserves. 4/ In short, allocations that exceed the growth in reserve

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1/ It may be noted, however, that an allocation could result in some reduction in foreign debt service obligations, and could also, by replacing borrowed reserves with owned reserves, strengthen the quality of reserve holdings. These factors could lead to an improvement of a country's credit standing and hence a reduction in the marginal cost of borrowing, which would tend to increase the country's demand for reserves. In addition, to the extent SDR allocation reduces foreign borrowing, it may tend to reduce "world" interest rates, which would also tend to increase the country's demand for reserves. The text abstracts from these secondary effects.

2/ This is true even for countries that make net use of their SDRs on a sustained basis, provided the total reserve holdings they choose to accumulate exceed the SDR allocations they receive.

3/ For countries with access to capital markets allocation will, of course, also tend to reduce borrowing.

4/ Of course, not all countries can reduce net exports simultaneously. If all countries simultaneously found themselves with excessive holdings and attempted to spend them on foreign goods and services, the result would be both an expansion of world trade and a shift of financial assets from official reserve holders to the private sector. If this entailed a reduction in net exports for some countries, it would necessarily entail an offsetting increase in net exports for other countries.

demand can be characterized as financing an inflow of goods and services as well as lowering the cost of satisfying the long-run demand for reserves. 1/

While the consideration of whether an SDR allocation augments reserves or finances real resource transfers may be important in assessing whether the SDR is meeting the purpose for which it is intended, the scale of cumulative SDR allocations has, to date, fallen far short of the total amounts of reserves that countries have chosen to accumulate. A separate issue is whether allocation leads to permanent net transfers of real and financial resources. As is discussed next, the possibility that permanent resource transfers may arise in the SDR system, and the extent of any such transfers that do arise, are not related to whether allocations finance (temporary) real resource transfers.

V. Permanent Resource Transfers in the SDR System

For the purpose of analyzing the extent to which permanent resource transfers may arise in the SDR system, it is useful to characterize the allocation of an SDR as equivalent to the receipt of an asset through a permanent "loan", where the SDR rate of charge is paid on the loan and the SDR interest rate is received on the asset. 2/ In this context, the extent to which the SDR system leads to permanent resource transfers can be analyzed in terms of three considerations: (1) whether countries make net use of their SDR allocations; (2) how the SDR interest rate compares with yields on other reserve assets; and (3) how the SDR rate of charge compares with the cost of borrowing on private capital markets (or with the cost of earning reserves through balance of payments surpluses). As will be clarified below, the "permanent" net use of SDRs will only involve a permanent resource transfer when the SDR interest rate is not

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1/ The issue of whether, and in what circumstances, an allocation finances the acquisition of real resources is intimately linked with the issue of its impact on a member's balance of payments adjustment efforts. In considering the design of domestic policies for achieving balance of payments objectives, it is useful to distinguish: (a) policy settings consistent with a viable (i.e., sustainable) balance of payments and (b) temporary deviations from these policy settings designed to achieve an adjustment of reserve holdings to desired levels. The amounts of SDR allocations (or cancellations) should be such as to encourage policy settings consistent with long-run viability and to diminish the extent to which deviations from these policy settings are dictated by the need to adjust reserve holdings. The success with which SDR allocations achieve these objectives depends in part on how closely the allocations match changes in the reserve demands of different countries.

2/ The SDR rate of charge is set at the same level as the SDR interest rate, so that the net stream of payments associated with allocated SDRs is zero until the SDRs are used.

competitive (allowing for expected exchange rate changes) with the yields on alternative reserve assets that the recipient would hold in the absence of receipt of SDRs. 1/ The allocation of SDRs, with or without net use of the asset, could involve a permanent resource transfer when the SDR rate of charge differs from a member's cost of borrowing in international capital markets.

By definition, an assessment of whether and in what circumstances SDR allocation or the net use of SDRs might involve a permanent transfer of resources requires an assessment of whether and in what circumstances the transfers that take place in the SDR system are or are not accompanied by equivalent quid pro quos. For this purpose, it is necessary to consider both the interest received on holdings of SDRs relative to the interest received on other reserve assets and the charge paid on net cumulative allocations relative to the costs of acquiring reserves through borrowing or increasing net exports.

With regard to the first of these considerations, if the SDR interest rate were below the rate at which the SDR would be held and exchanged freely, a transfer of SDRs through the compulsory designation mechanism would not constitute an equivalent quid pro quo and would thus involve a permanent resource transfer from the country providing the currency to the country using SDRs. This was the case prior to the the decision to raise the SDR interest rate to 100 percent of the combined market interest rate in May 1981. 2/ At present, however, there appears to be no strong case for considering the SDR interest rate to be uncompetitive, which would suggest that permanent resource transfers of significant magnitudes are no longer associated with net use of SDRs. Indeed, since August 1987, all transactions involving SDRS have taken place on a voluntary basis, without resort to the designation mechanism.

1/ As the level of the SDR interest rate that would be competitive depends on all of the other characteristics of the SDR, improving those characteristics would reduce the level of the interest rate that would be competitive. If, for example, the SDR is relatively less attractive because it has fewer uses than other reserve assets, the competitive level of the SDR interest rate would tend to be higher than interest rates on other reserve assets, other things being equal, to compensate for the relatively fewer uses of the SDR. Similarly, if the SDR is perceived as relatively risky, other things equal, the SDR interest rate will need to be higher than interest rates on other reserve assets (thereby providing a risk premium) if the SDR is to be competitive with other reserve assets.

2/ The combined market interest rate is calculated as a weighted average of the yields on three-month U.S. Treasury bills, three-month interbank deposits in the Federal Republic of Germany, three-month interbank money against private paper in France, three-month U.K. Treasury bills, and two-month private bills in Japan.

As will be clarified in the remainder of this section, the issue of whether permanent resource transfers arise in the SDR system depends not only on whether the SDR interest rate is competitive, but also on whether countries that hold SDRs are taking on, or perceive, significant risks. 1/ This will be shown by analyzing: (1) the case in which the SDR has a competitive interest rate and is riskless; (2) the case in which the SDR has a competitive interest rate but is not riskless; and (3) the case in which the SDR neither has a competitive interest rate nor is riskless. The analysis will focus on whether permanent resource transfers arise either from the net use of SDRs or from the allocation of SDRs.

In analyzing whether permanent resource transfers arise from the net use of SDRs, it is convenient to start from the fact that no permanent resource transfers arise when other reserve assets bearing market interest rates are used to purchase goods and services or to repay debt. Such uses of reserve assets bearing market interest rates only involve transfers that are accompanied by equivalent quid pro quos. Thus, the net use of SDRs will involve permanent resource transfers only if the exchange of SDRs for other reserve assets involves permanent transfers. This will only be the case, as the previous discussion has indicated, if the SDR is not competitive with other reserve assets.

If the SDR is competitive with other reserve assets, any permanent resource transfers that may arise in the SDR system must result from differences between the charge paid on cumulative SDR allocations and the costs of obtaining reserves in other ways. For many countries these differences are significant, and in this sense SDR allocation can be said to provide a resource gain for countries that could otherwise add to their reserves only at a higher cost than the SDR rate of charge. This resource gain is associated with the SDR allocation itself, regardless of whether any net use is made of the allocated SDRs. The magnitude of this resource gain reflects the difference between a country's borrowing cost (or the value of forgone consumption) and the rate of charge on cumulative allocations.

Table 3 provides a numerical example for the case in which the SDR has a competitive interest rate and is riskless. The table distinguishes between three (types of) countries: Country A, which is a prime borrower and is not required to pay a risk premium to borrow in private capital markets; Country B, which must pay an average risk premium to borrow on private capital markets; and Country C, which must pay an above-average premium to borrow. In this case the interest rate on risk-free reserve assets and the SDR rate of interest are both 8 percent (lines 1 and 4),

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1/ These risks might include the prospect that their interest receipts might be delayed or ultimately reduced by the failure of some participants to meet their obligations to the SDR Department, or the prospect that the usability or value of their assets might be impaired (e.g., the the risk that they will sustain a loss at liquidation of the SDR system).

Table 3. Numerical Example for the Case in Which the SDR Is Both Competitive and Riskless

	Country A	Country B	Country C
1. Interest rate on risk-free reserve assets	8	8	8
2. Market borrowing rate	8	10	12
3. Carrying cost of borrowed reserves (2-1)	0	2	4
4. SDR rate of interest (charge)	8	8	8
5. Expected yield on the SDR	8	8	8
6. Expected carrying cost of allocated SDRs (4-5)	0	0	0
7. Expected gain from allocation (3-6)	0	2	4
8. Expected gain from net use of SDRs (1-5)	0	0	0
9. Total potential expected gain from allocation and net use of SDRs (7+8)	0	2	4

the expected yield on the riskless SDR is also 8 percent (line 5), so the expected gain from net use of SDRs is zero (line 8). Nevertheless, countries that must pay risk premiums to borrow on private capital markets can gain from the allocation of SDRs. In particular, Countries B and C face market borrowing rates (line 2) that exceed the risk-free rate by 2 and 4 percentage points, respectively. These risk premiums--or costs of carrying borrowed reserves (line 3)--compare with the zero cost of carrying allocated SDRs (line 6), and thus represent the expected gain from allocation (line 7).

It is important to note in this example that the resource gains of countries with relatively high borrowing costs would not be at the expense of other participants in the SDR Department. All countries other than the prime borrowers (country A) would enjoy a resource gain as a result of the lower cost of adding to reserves via SDR allocation, while for prime borrowers, an allocation would provide reserves at the same cost as would borrowing. Thus, no country would suffer losses as a result of the allocation it received. In addition, to the extent that the SDR was competitive with other reserve assets, any resource transfers associated with transactions in SDRs would be accompanied by equivalent quid pro quos. Accordingly, the assumptions in this example that the SDR interest rate is competitive and that there is no risk in holding the SDR would imply that permanent transfers of resources do not take place within the SDR system itself.

While the assumption that there is no risk at all in holding SDRs is extreme, it is also not apparent that any such risk should be regarded as large. Members have generally placed a high value on their relationships with the Fund and have endeavored to meet their obligations to the SDR Department even in the face of extreme balance of payments difficulties. 1/ In addition, the Fund is required to pay interest to each holder of SDRs, whether or not sufficient amounts of SDRs are received in payment of charges, which eliminates one source of risk. 2/

These considerations notwithstanding, it is important to analyze whether permanent resource transfers would arise if countries that hold SDRs were indeed taking on a significant risk that their interest receipts might ultimately be reduced, or the usability of their assets impaired, by the failure of some participants to meet their obligations

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1/ It should be noted, however, that if countries have a fixed willingness or capacity to service debt, giving priority to obligations in the SDR Department could simply shift an unchanged aggregate degree of risk to other lenders. This important consideration will be discussed in Section VI.

2/ As of December 18, 1987, unpaid charges on cumulative SDR allocations amounted to SDR 23.8 million, compared with cumulative allocations amounting to SDR 21,433.3 million.

to the SDR Department. 1/ Table 4 provides a numerical example for the case in which the SDR is assumed to entail a risk but its interest rate is competitive, while Table 5 illustrates the case in which the SDR is risky and its interest rate is not competitive. In both cases, the risk premium on the SDR--the difference between the SDR rate of interest (line 4) and the expected yield on the SDR (line 5)--is taken to be 1/2 percent. In Table 4 the competitiveness of the SDR is reflected in the fact that the expected yield on the SDR equals the interest rate on risk-free reserve assets, such that the expected gain from net use of SDRs is zero. This is not the case in Table 5. In both cases there is a risk or expected cost of carrying SDRs (line 6) which, in comparison with Table 3, reduces the expected gain from SDR allocation for countries B and C and results in an expected loss from allocation for country A. For the case in which the SDR is competitive, this loss cannot be offset by making net use of SDRs, so it necessarily results in a permanent transfer of resources from prime borrowers to the countries that are regarded as posing average risks or relatively high risks for private creditors. These permanent resource transfers reflect the fact that prime borrowers must pay more to obtain reserves via SDR allocation than in alternative ways because the charge on cumulative allocations--if set at a uniform rate for all countries, and at a rate that makes the SDR competitive--includes a risk premium they can avoid by borrowing to obtain reserve assets that provide the same expected yield as the SDR. Note again that, for the case in which the SDR interest rate is competitive, the permanent resource transfers resulting from allocation are not affected by the extent to which countries make net use of their SDRs. By contrast, for the case in which the SDR interest rate is below a competitive level, those countries that succeed in making net use of their SDRs can increase their expected gains, or reduce their expected losses, from the SDR system.

1/ An anlaysis of the risk that exists in the SDR system is complicated. It may be noted, however, that any such risk is not related simply to the risk of lending to countries receiving allocations, or of lending to countries that have or are likely to make net use of their SDRs. This point can be appreciated by considering the two potential risks for which holders of SDRs might wish compensation. The first is that they might not receive the interest owed to holders or might receive it with a delay. To a certain extent, however, this risk is reduced by the provision that requires the Fund to make full payment of interest when due even if SDRs must be created for that purpose. The other risk is that SDRs might not be usable (e.g., exchangeable for currency) at their full official value when wanted. To the extent that the designation mechanism must be relied on to insure the SDR's usability, the risk here is that the acceptance obligations of members in strong balance of payments and reserve positions might not be sufficient to absorb all of the SDRs that holders might wish to exchange, or that strong members might not honor that obligation. This latter risk reflects more the behavior of creditor countries than of debtor countries and would not seem closely related to the risk of lending to particular countries.

Table 4. Numerical Example for the Case in Which the SDR Is Competitive But Not Riskless

	Country A	Country B	Country C
1. Interest rate on risk-free reserve assets	8	8	8
2. Market borrowing rate	8	10	12
3. Carrying cost of borrowed reserves (2-1)	0	2	4
4. SDR rate of interest (charge)	8.5	8.5	8.5
5. Expected yield on the SDR	8	8	8
6. Expected carrying cost of allocated SDRs (4-5)	0.5	0.5	0.5
7. Expected gain from allocation (3-6)	-0.5	1.5	3.5
8. Expected gain from net use of SDRs (1-5)	0	0	0
9. Total potential expected gain from allocation and net use of SDRs (7+8)	-0.5	1.5	3.5

Table 5. Numerical Example for the Case in Which the SDR Is Neither Competitive Nor Riskless

	Country A	Country B	Country C
1. Interest rate on risk-free reserve assets	8	8	8
2. Market borrowing rate	8	10	12
3. Carrying cost of borrowed reserves (2-1)	0	2	4
4. SDR rate of interest (charge)	4	4	4
5. Expected yield on the SDR	3.5	3.5	3.5
6. Expected carrying cost of allocated SDRs (4-5)	0.5	0.5	0.5
7. Expected gain from allocation (3-6)	-0.5	1.5	3.5
8. Expected gain from net use of SDRs (1-5)	4.5	4.5	4.5
9. Total potential expected gain from allocation and net use of SDRs (7+8)	4	6	8

VI. Permanent Resource Transfers Outside the SDR System

The analysis to this point has focused on whether the allocation or net use of SDRs gives rise to permanent resource transfers within the SDR system itself. It is also important to analyze to what extent the resource gains that almost all countries receive in association with their own individual allocations of SDRs represent a savings to the global economy as a whole, to what extent they may be offset by costs arising outside the SDR system, and to what extent the net result of the resource gains and costs involves permanent resource transfers among countries. The starting point for addressing these issues is to recognize that the resource gains arise from the fact that borrowing costs on private credit markets include interest premia or other charges to compensate lenders for credit risk, whereas under the current method of setting the SDR interest rate no explicit risk premium is built into the charge on cumulative SDR allocations. 1/ Consequently, the analysis depends on how much the total risk in private international credit markets is simply redistributed, and how much it is reduced, when SDR allocation reduces the amounts that countries borrow to accumulate reserves.

As noted earlier, SDR allocation would tend to redistribute the risks in international credit markets insofar as countries subordinated their market debt to their obligations to the SDR Department. Consequently, if an allocation of SDRs leads to a reduction in market borrowing without reducing the total credit risk that is perceived to be attached to the market debt, risk premiums on the reduced volume of market debt will tend to rise. This has implications both for the issue of permanent resource transfers among countries and for the issue of the net gains to individual countries from SDR allocation. To the extent that market lenders correctly assess and require compensation from borrowers for whatever levels of risk they perceive, the risk premiums that borrowers face on international credit markets would adjust commensurately with any redistribution of risks that might result from an SDR allocation. Under this condition, an SDR allocation would not cause transactions to take place without equivalent quid pro

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1/ Whether the SDR interest rate as presently established contains an implicit risk premium cannot be established a priori. The fact that the SDR interest rate is based on the interest rates on prime financial instruments does not mean that it does not contain a risk premium, because the SDR's characteristics are not identical with those of the assets in the interest rate basket (e.g., the latter assets have two- or three-month maturities while the SDR can be used with two-day value).

quos on private capital markets; no permanent resource transfers among countries would be caused, ex ante, by the redistribution of risks that resulted from SDR allocation. 1/

By the same token, however, whatever resource gains are directly associated with the SDR allocations that an individual country receives may be partly or completely offset by increases in the risk premiums that the same country must pay to borrow on international capital markets, or by reductions in its access to those markets. The offset would be less than complete--and the country would receive a net benefit from SDR allocation--only to the extent that SDR allocation reduced the total risk in the system. 2/

1/ In the context of credit risk a distinction arises between the concept of a permanent resource transfer in an ex ante sense, which is defined in terms of whether transactions involve quid pro quos that are regarded as equivalent ex ante, and the resource transfers that may be realized ex post. When there is risk that a borrower may not comply fully with the terms of a loan contract, the lender will require compensation for the risk and, accordingly, will only enter into a loan contract for which the present value of the repayments stream specified by the contract, discounted at the market interest rate on "riskless" (or minimum-risk) assets, exceeds the amount of the loan. Thus, if the borrower complies fully with the terms of the contract (which the lender does not regard as a certain outcome at the time the contract is written), a permanent transfer of resources will take place, ex post, from the borrower to the lender. This prospect, however, is required to compensate the lender for the possibility that failure of the borrower to comply fully with the terms of the contract could result in a permanent transfer of resources from the lender to the borrower. For loans that are arranged in a competitive environment, it is conventionally assumed that the terms of loan contracts will change over time to reflect changes in the degrees of credit risk associated with different borrowers. Similarly, the prices at which loans trade on secondary markets will fluctuate with changes in the perceived credit risks of borrowers. Market participants may experience capital gains or losses in the market values of their assets over time, but at each point in time the prices of the loans will reflect perceived degrees of credit risk. In this sense, the issuance of a loan, or the sale of a loan on a secondary market, involves a transfer of resources for which an equivalent quid pro quo is received and, thus, does not involve a permanent resource transfer from an ex ante perspective. Even though it is likely that, ex post, a permanent transfer of resources will have taken place between the borrower and the holder of the claim, the size and direction of that transfer are uncertain ex ante.

2/ This statement only applies if holding SDRs is not risky. If holding SDRs were risky, SDR allocation would shift some of the total risk in the system to the SDR Department and relatively high risk countries would benefit at the expense of relatively low risk countries through the failure of the SDR Department to impose different rates of charge on countries representing different amounts of credit risk.

An analysis of how much, and through what channels, SDR allocation may reduce the total risk in the global economic system, or otherwise provide real resource savings for countries collectively, is beyond the scope of this paper. Such an analysis would need to focus on the extent to which the SDR system can provide gains from reserve pooling that private capital markets cannot achieve, and on the extent to which reserve assets obtained through allocation are more secure than those financed by borrowing that must be periodically rolled over. In addition, such analysis should consider the potential for real resource savings to result from improvements in the functioning of the international monetary system. Increased stability in the flow of international payments and trade, as might result from the increased proportion of owned reserves to borrowed reserves and the avoidance of excessive balance of payment adjustment for purposes of accumulating reserves, could potentially save substantial real resources as a result of higher average levels of employment and economic activity, as well as improved resource allocation.

VII. Concluding Remarks

In analyzing whether the SDR system gives rise to permanent resource transfers, this paper has distinguished between the implications of prolonged net use of SDRs and the implications of SDR allocation. It has been argued that, insofar as the SDR is competitive with other reserve assets, net use of SDRs does not involve a permanent transfer of resources--that is, a transfer of resources that is not accompanied by an equivalent quid pro quo. If a country were to make permanent net use of SDRs to acquire goods and services (real resources), the present discounted value of the net interest payments (financial resources) it would have to transfer to the SDR Department, and thereby ultimately to other participants, would be equivalent to the initial market value of the goods and services it obtained. Furthermore, the prolonged net use of SDRs need not involve even a temporary transfer of real resources, as the SDRs might have been used to acquire other reserve assets or to reduce debt.

With regard to the implications of SDR allocation, it is well recognized that allocation tends to reduce the average cost of obtaining reserves for many countries and to reduce the outward flow of real resources from countries that would otherwise have to generate larger net exports of goods and services to satisfy their reserve demands. It is not as well recognized, however, that whether or not permanent resource transfers result from SDR allocation does not depend on whether or not the size of the allocation exceeds the growth in reserve demands. Even if some countries acquired real resources as a consequence of SDR allocations that exceeded the growth in their demands for reserves, the analysis of permanent resource transfers cannot be addressed simply in terms of the relatively narrow issue of how SDR allocation affects

flows of real resources. The broader issue is whether allocation provides some countries with "grants" in the sense of giving rise to current and future flows of real and financial resources whose combined present discounted values amount to positive net inflows. It has been argued that whether allocation gives rise to permanent resource transfers in this sense depends both on whether the SDR interest rate is competitive and on whether holding SDRs involves significant risk. Allocation will lead to permanent resource transfers only to the extent that the SDR interest rate is not competitive or requires a risk premium.