FOR
AGENDA

SM/85/163

June 7, 1985

To: Members of the Executive Board

From: The Secretary

Subject: Review of the Valuation of the SDR

Attached for consideration by the Executive Directors is a paper on the review of the valuation of the SDR, which is scheduled for Executive Board consideration on Friday, June 28, 1985.

Mr. Roncesvalles (ext. 7807) 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

Review of the Valuation of the SDR

Prepared by the Treasurer's Department

(In consultation with Research and Legal Departments)

Approved by W. O. Habermeier

June 7, 1985

I. Introduction

The valuation of the SDR and the method for calculating the SDR interest rate were last reviewed by the Executive Board in 1980. The main results of that review were (i) to maintain the principle of valuing the SDR as the equivalent of a basket of currencies containing a specified number of units for each included currency (usually referred to as the "standard basket"); (ii) to reduce the number of currencies in the valuation basket from sixteen to five; (iii) to make the SDR interest rate basket identical with the SDR valuation basket; and (iv) to provide for future five-yearly revisions of the list and the percentage weights of the currencies in the valuation basket to be made in accordance with changes in certain economic variables, unless the Executive Board decided otherwise. 1/ As the present SDR valuation basket took effect on January 1, 1981, the next revision of the basket is thus intended to take effect on January 1, 1986.

This paper has been prepared to provide a basis for a review by the Executive Board of its decision of 1980 on the valuation of the SDR and the SDR interest rate. This paper does not deal with the principles and practices underlying the method of valuing the SDR, nor does it discuss the feasibility of the substitution of other currencies in the present (standard) basket of valuing the SDR, except as may be required under the 1980 Decision. The paper is organized as follows: Section II discusses the aims of the 1980 Decision, the criteria incorporated in that decision that are to be used in any revision of the present valuation basket, and the major implications of this revision. Section III discusses the determination of currency amounts in the new basket. Section IV reviews the SDR interest rate basket. Section V discusses procedural matters. The final section presents a summary and the main conclusions of the paper.

1/ Executive Board Decision No. 6631-(80/145) G/S, adopted September 17, 1980 and reproduced in Appendix I.

II. The 1980 Decision--Aims and Criteria for Revision

1. Aims of 1980 revision

The last review of the method of valuing the SDR in 1980 took place in the context of discussions regarding the establishment of a Substitution Account in the Fund in which large-scale conversion into SDR-denominated assets of dollar-denominated assets held by members was envisaged. The basic aims of the revisions adopted in 1980 were to simplify the method of valuing the SDR, mainly by reducing the number of currencies (16) in the valuation basket at that time, and to make the valuation and interest rate baskets identical while maintaining the basic characteristics of the standard basket method of valuing the SDR and continuity in the transactions value of the SDR. These changes were expected to (i) keep the composition of the valuation basket stable for a considerable number of years while including the currencies of those members with well-developed foreign exchange and money markets, a requirement that was not met by a number of the currencies in the then 16-currency basket; 1/ (ii) improve the attractiveness of the SDR as a reserve asset, including officially created SDR-denominated claims, which would increase its acceptability by Fund members and by prescribed holders and thereby enhance its role in the international monetary system; (iii) make it easier for participants in the private market to cover exchange risks in terms of the SDR, thus also improving its acceptability and encouraging further development of the SDR as a unit of account in the private markets; (iv) help to ensure that SDR-denominated claims would be traded at or close to their capital value, which would help to maintain an attractive effective yield on SDR-denominated claims; and (v) facilitate public understanding of the SDR and thereby increase its general usability.

2. Principles for revision of the valuation basket

The 1980 Decision on the valuation of the SDR, which is reproduced in Appendix I, sets out the criteria to be followed with regard to future revisions of the method of valuing the SDR, unless the Executive Board decided otherwise. These criteria are summarized as follows:

(i) the list of currencies that determines the value of the SDR will be revised every five-year period from January 1, 1981, so as to include the currencies of the five member countries of the Fund with the largest exports of goods and services during the five-year period ending 12 months before the effective date of the revision;

1/ See "Substitution Account - Choice of Number of Currencies in the SDR Valuation and Interest Rate Baskets and Timing of Change," SM/80/60 (3/13/80) and EBM/80/54 (3/26/80).

(ii) a new currency will not replace an existing currency in the valuation basket unless the value of exports of goods and services of the issuer of the former currency for the period 1980-84 exceeds that of the issuer of the latter currency by at least one percent;

(iii) future revisions of the percentage weights for the currencies in the valuation basket shall reflect the values of the exports of goods and services and the balances of a member's currency held by other members in a manner that would broadly maintain the relative significance of these factors that underlie the percentage weights in the SDR valuation basket. The percentages so calculated are to be rounded to the nearest one percent. It was envisaged that some adjustments might be made to the results of the calculations, including some other rounding as might be convenient if the Executive Board would so decide by a 70 percent majority of the total voting power;

(iv) the amounts of each of the five currencies in the valuation basket shall be determined on the last working day preceding the effective date of the new decision in a manner that will ensure that, at the average exchange rates for the three-month period ending on that date, the shares of the currencies in the value of the SDR shall correspond to the percentage weights for these currencies; and

(v) the change to the new SDR basket will be made in such a manner that the value of the SDR on the last business day preceding the effective date of the new decision will be the same under the method of valuation in effect before and after that date.

a. List of currencies

Tables 1-A and 1-B provide information on members' shares in the total of exports of goods and services in 1980-84 on the basis of the latest available data, which are complete for the five largest countries, except for last quarter 1984 statistics for France. The member countries issuing the currencies in the present SDR valuation basket continue to have the largest shares in the total of exports of goods and services in the world. 1/ These five largest members accounted for 44 percent of

1/ In determining the currency composition of the valuation basket, two different thresholds for the export shares criterion have been employed: in 1974, the currencies of member countries whose shares in all members' exports of goods and services were at least one percent were selected and those resulted in an SDR valuation basket of 16 currencies; in 1978, the criterion of export shares was retained but the size of the basket was limited to the 16 currencies of members having the largest shares in total exports of goods and services. In 1980, the Executive Board Decision provided that the currencies in the basket will be those of the five members whose exports of goods and services have the largest value during the relevant period. See paragraph 3a of Executive Board Decision No. 6631-(80/145), G/S.

Table 1-A. Shares in World Exports of Goods and Services of the Ten Largest Members, 1980-84

(In percent)

	1980				1981				1982		
	Share	Cumulative share	Per-centage gap 1/		Share	Cumulative share	Per-centage gap 1/		Share	Cumulative share	Per-centage gap 1/
US	13.86		--	US	14.95		--	US	14.80		--
GE	9.55		45.1	CE	8.74		71.1	GE	9.26		59.8
FR	6.96		37.2	JA	7.55		15.8	JA	7.57		22.3
UK	6.74		3.3	FR	6.72		12.4	FR	6.51		16.3
JA	6.41	43.52	5.0	UK	6.25	44.21	7.5	UK	6.20	44.34	10.5
SD	4.53	48.05	41.5	SD	5.07	49.28	23.3	IT	4.19	48.53	48.0
IT	4.25	52.30	6.6	IT	4.00	53.28	26.8	SD	3.90	52.43	7.4
NE	3.88	56.18	9.5	NE	3.63	56.91	10.2	NE	3.73	56.16	4.6
BE	3.60	59.78	7.8	BE	3.47	60.38	4.6	BE	3.51	59.67	6.3
CA	3.15	62.93	14.3	CA	3.35	63.73	3.6	CA	3.49	63.16	0.6

	1983				1984 est. 2/				1980-84 average		
	Share	Cumulative share	Per-centage gap 1/		Share	Cumulative share	Per-centage gap 1/		Share	Cumulative share	Per-centage gap 1/
US	14.60		--	US	15.1		--	US	14.7		--
GE	9.23		58.2	JA	8.7		74.5	GE	9.1		61.6
JA	8.05		14.7	GE	8.7		0.2	JA	7.7		17.7
FR	6.39		26.0	FR	6.1		72.4	FR	6.5		18.6
UK	6.15	44.42	3.9	UK	5.8	44.4	6.7	UK	6.2	44.2	4.6
IT	4.28	48.70	43.7	CA	4.2	48.6	36.4	IT	4.1	48.3	50.5
CA	3.86	52.56	10.9	IT	4.0	52.6	7.0	SD	3.7	52.0	10.3
NF	3.66	56.22	5.5	NE	3.5	56.1	12.4	NE	3.7	55.7	2.2
BE	3.31	59.53	10.6	BE	3.2	59.3	10.7	CA	3.6	59.3	0.8
SD	2.92	62.45	13.4	SD	2.5	61.8	14.6	BE	3.4	62.7	6.5

Source: IMF BOP Statistics, and staff estimates.

Note: US = United States; GE = Germany; FR = France; UK = United Kingdom; JA = Japan; SD = Saudi Arabia; IT = Italy; NE = Netherlands; BE = Belgium; CA = Canada

1/ Percentage difference between the member's exports of goods and services from those of next higher member, i.e., how much the smaller figure must increase to equal the next highest figure.

2/ The data for 1984 are complete except in a few cases. The data for Saudi Arabia and Belgium are estimated from available data for merchandise exports. For France and Italy the available data for the first three quarters of 1984 has been annualized to give an estimate for the full year. The world total of exports of goods and services was estimated on the assumption that it grew at the same rate in 1984 as that of the total for the five largest countries.

Table 1-B. Exports of Goods and Services for the Five Countries Whose Currencies are Included in the SDR Valuation Basket

	Average 1975-79 1/	1980	1981	1982	1983	1984 2/	Average 1980-84 2/
				(In billions of SDRs)			
United States	166.7	263.2	318.8	316.4	310.9	353.7	312.6
Germany	124.3	181.3	186.4	197.9	196.4	204.8	193.4
France	76.8	132.0	143.2	139.2	136.0	142.1	138.5
Japan	79.3	121.6	160.9	161.9	171.5	205.5	164.3
United Kingdom	73.4	127.9	133.2	132.6	130.9	137.3	132.4
Total of five countries	520.5	826.0	942.5	948.0	945.7	1,043.4	941.1
World total	1,084.0	1,898.5	2,131.8	2,137.7	2,128.7	n.a.	n.a.
				(Percentage share of five country total)			
United States	32.0	31.9	33.8	33.4	32.9	33.9	33.2
Germany	23.9	21.9	19.8	20.9	20.8	19.6	20.6
France	14.8	16.0	15.2	14.7	14.4	13.6	14.7
Japan	15.2	14.7	17.1	17.1	18.1	19.7	17.5
United Kingdom	14.1	15.5	14.1	14.0	13.8	13.2	14.1

Source: IMF, BOP Statistics.

1/ Actual figures available to the staff at the time of the 1980 Decision.
2/ As indicated in footnote 2 of Table 1-A, full data are not yet available for France for 1984.

world exports of goods and services in 1980-84, compared with 48 percent in the 1975-79 period. The share in exports of goods and services of the sixth ranking country (Italy) remains substantially below that of the fifth largest country (the United Kingdom), and the difference between these shares is 2.1 percentage points. On the basis of these calculations, the SDR valuation basket will remain unchanged in accordance with the Executive Board Decision. However, the decline of the total share in world exports of goods and services of the five countries whose currencies are included in the present basket bears monitoring.

The large gap between the levels of exports of goods and services of the fifth and the sixth ranking countries, in relation to the one percent threshold provision, suggests that the list of currencies in the basket is likely to remain stable over the medium term. Furthermore, the next natural break in the relative shares of countries' exports of goods and services occurs at the 3 percent share level, which includes ten countries. The additional five countries are Saudi Arabia, Italy, the Netherlands, Belgium, and Canada. The next largest share is accounted for by Switzerland which had a 1.8 percent share of world exports of goods and services in 1980-84.

b. The relative weights of currencies in the basket

The initial weights of the currencies to be included in the valuation basket are required to be based on two economic factors: the average annual value of exports of goods and services of the issuer of the currency over the 1980-84 period and the average value of the balances of each currency included in the basket held by the monetary authorities of other members at the end of each year in this period. The Executive Board had agreed in 1978 that the next (1980) review of the valuation of the SDR would take into account the financial importance of currencies in the international financial system. In 1980 it was agreed that the data on reserve holdings would continue to be used in future revisions of the SDR valuation basket. The use of these financial data was regarded as appropriate because the use of shares of exports of goods and services alone for determining the relative importance of the major currencies was thought to underestimate the role of the U.S. dollar in relation to other currencies. Their use also avoided the necessity of arbitrarily setting the weight of the U.S. dollar in the valuation basket as had been done in 1974 and 1978. 1/ Furthermore, the use of trade shares and currency liabilities provided a broader economic base for determining the relative weights of the currencies in the basket, which could improve the balance between the currencies, or groups of currencies, in the basket in that no particular currency could exert undue influence on the SDR valuation. It was also agreed that information would also be collected on the use of currencies both as a unit of account, e.g., for the denomination of debts, including commercial bank foreign liabilities, and as a means of payment for international transactions arising from exports of goods and services. These supplementary data are presented in subsection (e) below.

Data compiled by the Bureau of Statistics on the value of members' official holdings of the currencies included in the SDR valuation basket are presented in Table 2 together with those data used in the context of the 1980 Decision. As can be seen, the U.S. dollar continues to dominate the foreign exchange reserves of member countries, accounting for over three-fourths of members' foreign currency reserves. Compared with the holdings in the 1977-79 period used in the 1980 review, however, the relative share of the dollar has declined from 84 percent to 76 percent. Holdings of the other four currencies increased, with the Japanese yen and the Deutsche mark recording the largest increases. The total value of these five currencies held by members rose by about 59 percent over the 1980-84 period, substantially less than the growth in the value of exports of goods and services of 81 percent. These currency reserves accounted for 80 percent of total foreign exchange reserves held by all members and were equivalent to 26 percent of the total value of exports of goods and services by these five countries.

1/ It will be recalled that the weight of the U.S. dollar in the SDR valuation baskets agreed in 1974 and in 1978 was set at 33 percent, or about 50 percent higher than the relative share of the United States in members' exports of goods and services, on the ground that its share in exports of goods and services did not reflect its relative importance in the international monetary system. The 50 percent increase of the weight of the U.S. dollar in 1974 and 1978 from its calculated weight in members' shares of goods and services was to reflect its relative importance in world financial affairs, which exceeded its share in world trade (see "Review of the Valuation of the SDR and Determination of its Rate of Interest," SM/76/120, 6/4/76). At the time of the 1980 revision of the valuation basket, balances of currencies held in reserves by other members were included in the calculation in recognition of their role as international reserve assets. The inclusion of currency liabilities in the weighting system eliminated the need to set the weight of the U.S. dollar on an ad hoc basis. It was generally agreed that there was no good reason to constrain the weight for the U.S. dollar in the basket. Indeed, the calculations using both shares in trade and official currency liabilities yielded a weight of 43.9 percent for the U.S. dollar. This was reduced to 42 percent together with minor changes, which were characterized at the time as within margins of rounding, in the shares of the other currencies.

Table 2. Official Holdings of Currencies Included in the SDR Valuation Basket

	Average 1975-79 1/	End of year 1980	1981	1982	1983	1984	Average 1980-84
	(In billions of SDRs)						
U.S. dollar 2/	129.1	168.8	185.9	176.2	188.8	208.5	185.6
Deutsche mark	15.7	38.0	34.9	31.6	31.1	38.4	34.8
French franc	1.7	4.3	3.7	3.3	3.0	3.3	3.5
Japanese yen	3.4	11.0	11.3	11.6	13.0	17.2	12.8
Pound sterling	3.7	7.5	5.8	6.3	7.1	9.9	7.3
Total 5 currencies	153.6	229.6	241.6	229.0	243.0	277.3	244.1
All currencies	192.7	292.9	292.6	284.2	307.3	344.9	304.4
	(Percentage share in five-currency total)						
U.S. dollar	84.0	73.5	76.9	76.9	77.7	75.2	76.0
Deutsche mark	10.2	16.6	14.4	13.8	12.8	13.8	14.3
French franc	1.1	1.9	1.5	1.4	1.2	1.2	1.4
Japanese yen	2.2	4.8	4.7	5.1	5.3	6.2	5.2
Pound sterling	2.4	3.3	2.4	2.8	2.9	3.6	3.0

Source: IMF, Bureau of Statistics.

1/ Data used in connection with the 1980 Decision.
2/ The balances of European currency units (ECUs) held by EMS countries that correspond to their U.S. dollar deposits in the European Monetary Cooperation Fund (EMCF) are treated as official holdings of U.S. dollars.

c. Combined calculation

Table 3 shows the results of combining the 1980-84 averages of exports of goods and services and currency reserves in order to calculate the weight of each currency in the revised valuation basket. The table also shows the 1980 results. Consistent with past practice, the data are expressed in terms of SDRs. The use of another currency to express the data does not yield differences from the calculations based on the SDR because consistent market exchange rates are used in the conversion and because the calculated weights are expressed in terms of relative shares. 1/

The relative weights calculated using the two economic criteria and shown in Table 3 indicate a decline in the share of the U.S. dollar from 43.9 percent calculated on 1975-79 data to 42.0 percent on the basis of the more recent data. Of the other currencies, the relative share of the Deutsche mark declines from 20.8 percent to 19.25 percent, while that of the pound sterling and the French franc show small increases from 11.4 percent to 11.8 percent and from 11.7 percent to 12.0 percent, respectively. The relative share of the Japanese yen increases substantially from 12.3 percent to 14.9 percent. As noted earlier, the calculations have been made on the basis of almost complete data. The exception is France, for which exports of goods and services in the final quarter of 1984 were estimated by the staff.

It may be noted that the significance of exports of goods and services relative to that of reserve currency holdings has increased marginally since 1975-79 when exports of goods and services accounted for 77 percent of the total value of the two variables; this proportion has increased to 79 percent in the 1980-84 period. This marginal shift in the relative importance of the two factors is not significant, and the procedure adopted in 1980 of effectively assigning the same coefficient of unity for the values of exports of goods and services and currency reserves holdings for the purpose of deriving relative weights is judged to remain valid. 2/

1/ However, the magnitude of the exchange rate movements since 1980 is a factor to be taken into account as regards the conversion of the basic data into a common unit for the purpose of the calculations in Table 3. The export shares of countries with depreciating currencies tend to decline in the short run while the shares of countries with appreciating currencies initially increase. Over the longer run, trade volumes and unit values tend to adjust in response to exchange rate changes, and changes over a five-year period might be expected to iron out the initial effects of changes in exchange rates.

2/ An adjustment applied to the 1980-84 data to maintain the relative contributions of these two economic factors at their 1975-79 levels would introduce relatively small changes in the unrounded shares shown in Part I of Table 3.

Table 3. Basis for Determining the Weights of Currencies in the SDR Valuation Basket

Currency	Issuing countries' exports of goods and services 1/ (1)	Official holdings of currency 2/ (2)	Total of cols. (1) and (2) (3)	Weights as percentage of totals in col. (3) (4)	Rounded percentage weight (5)	Actual percentage weight (6)
	(In billions of SDRs)					
I. Latest data for 1980-84						
U.S. dollar	312.6	185.6	498.2	42.04	42	
Deutsche mark	193.4	34.8	228.2	19.25	19	
French franc	138.5	3.5	142.0	11.98	12	
Japanese yen	164.3	12.8	177.1	14.94	15	
Pound sterling	132.4	7.3	139.7	11.79	12	
Total	941.1	244.1	1,185.2	100.00	100	
Relative weight, in percent	79.4	20.6	100.0			
II. 1980 data 3/						
U.S. dollar	166.7	129.1	295.8	43.9	44	42
Deutsche mark	124.3	15.7	140.0	20.8	21	19
French franc	76.8	1.7	78.6	11.7	12	13
Japanese yen	79.3	3.4	82.7	12.3	12	13
Pound sterling	73.4	3.7	77.1	11.4	11	13
Total	520.5	153.6	674.1	100.1	100	100
Relative weight, in percent	77.2	22.8	100.0			

1/ Annual average figures; 1984 data for France are the available partial data for 1984 expressed at annual rates.

2/ Average of year-end figures.

3/ Actual figures for the 1975-79 period available at the time of the 1980 Decision.

d. Rounding of weights

Paragraph 3(c) of the Decision No. 6631 states that the weights shall be rounded to the nearest one percent or as may be convenient. Rounding to the nearest one percent the relative shares calculated on the basis of the specified statistical indicators would leave unchanged the 1980 weights for the U.S. dollar and the Deutsche mark, reduce the shares of the pound sterling and the French franc by one percentage point each, and increase the share of the Japanese yen by two percentage points. The Executive Board may decide, by a 70 percent majority of the total voting power, to round the weights derived on the basis of the calculations in Part I of Table 3 in some other fashion, including the maintenance of the weights in the existing decision. It may be recalled that the weights of the five constituent currencies in the valuation basket that were agreed in connection with the 1980 Decision differed somewhat from the calculated weights which resulted from combining the two economic criteria. The weights for the French franc, the Japanese yen, and the pound sterling were each rounded up to 13 percent, compared with their calculated shares of 11.7 percent, 12.3 percent, and 11.4 percent respectively, with a consequent reduction in the weights of the U.S. dollar and the Deutsche mark from their calculated weights of 44 percent and 21 percent, respectively, to 42 percent and 19 percent, respectively. If the present weights were maintained unchanged in the valuation basket, the overall deviation between the present weights and the unrounded percentage shares based on 1980-84 data would be somewhat smaller than that between the 1980 calculations and the then agreed weights. The staff feels that rounding the weights to the nearest one percent would be somewhat more in keeping with the basic intent of the 1980 Decision that the basket should be adjusted once in five years to reflect changes in the underlying economic conditions.

e. Supplementary criteria

A number of supplementary criteria were discussed by the Executive Board in connection with its revision of the valuation basket in 1980, which, it was agreed, would be updated in connection with subsequent revisions of the SDR valuation basket. These criteria were essentially indicators of the relative importance of individual currencies in the international financial centers, such as the turnover of currencies in major foreign exchange markets, the role of individual currencies in the international capital markets, and the importance of currencies in invoicing of international trade.

(i) Turnover in foreign exchange markets

An indicator of the relative importance of currencies is their turnover in foreign exchange trading. Recent data on currency turnover are available for the New York market only. The results of three surveys to determine the relative shares of various currencies trading against U.S. dollars that were conducted by the Federal Reserve in the past several years are shown in Table 4.

Table 4. New York Exchange Market Turnover

	Percentage shares		
	April 1977 1/	March 1980 2/	April 1983 2/
Deutsche mark	27.3	31.8	32.5
French franc	6.3	6.9	4.4
Japanese yen	5.3	10.2	22.0
Pound sterling	17.0	22.7	16.0
Canadian dollar	19.2	12.2	7.5
Swiss franc	13.8	10.1	12.2
Netherlands guilder	5.7	1.9	1.6
Italian lira	1.1	0.9	0.8
Belgian franc	1.5	1.0	0.4
Others	2.8	2.3	2.0

1/ From Foreign Exchange Markets in the United States., Roger Kubarych, Federal Reserve Bank of New York, September 1978.

2/ From Summary of Results of U.S. Foreign Exchange Market Turnover Survey Conducted in April 1983, mimeograph, Federal Reserve Bank of New York.

The total value of the turnover for all these currencies necessarily equals that of the U.S. dollar, and the relative importance of the individual currencies other than the U.S. dollar will be one-half of the shares shown in the table. Thus, the Deutsche mark can be said to have had a 16 percent share in the market in 1983 while the Japanese yen and the pound sterling had 11 percent and 8 percent shares respectively; the share of the French franc was rather small at 2.2 percent, below those of the Swiss franc and the Canadian dollar. During the three-year period 1980-83, the share of the Japanese yen in the New York market increased substantially, that of the Deutsche mark rose slightly while those of the other two currencies in the SDR basket declined.

The relative importance of currencies can be expected to differ from market to market with the domestic currency playing a major role in the turnover in each of the principal foreign exchange markets. In the absence of information on other principal markets, it would not be prudent to draw any firm conclusions from the information available for the New York market.

(ii) Importance in international capital markets

The available information on international capital markets can be classified into two broad groups--currency denomination of deposits in the eurocurrency markets and currency denomination of new international bond issues. These data are presented in Table 5. The capital markets data indicate that overall shares of the U.S. dollar in eurodeposits and new bond issues are in the range of 60-80 percent and a corresponding share of 10-15 percent for the other four major currencies. The Deutsche mark ranks second in the eurocurrency market but with a share of 8.5 percent in 1983; the shares of the other three are marginal and less than 2 percent of the total market. In terms of bond issuance, the U.S. dollar maintains its dominant role with a share of 64 percent in 1984 while the Deutsche mark's relative position is above those of the Japanese yen and the pound sterling.

An interesting feature of the data in Table 5 is the relative importance of the Swiss franc in international capital markets. On the basis of its relative share in the denomination of new international bond issues, the Swiss franc ranks second only to the U.S. dollar, substantially above the Deutsche mark. The share of the Swiss franc in the eurocurrency deposit market is about half that of the Deutsche mark and more than three times that of the French franc, the Japanese yen, and the pound sterling. 1/ Furthermore, the Swiss franc ranks above the French franc in terms of currency composition of official holdings of foreign exchange reserves and also on the basis of the 1983 foreign exchange market turnover in New York. The importance of the Swiss franc is considerably greater in the international capital markets than indicated by the size of Switzerland's exports of goods and services, which are of the order of one third the size of the fifth ranking country (the United Kingdom) presently included in the valuation basket. In this connection, the relative importance of the Swiss franc would arise only in the context of a valuation basket with more than five currencies or in the event it were decided to increase the relative importance of financial considerations over members' exports of goods and services in determining the currencies to be included in the basket, neither of which are suggested for consideration in the present context.

(iii) Invoicing of international trade and payments

Currency denomination or invoicing media in international trade and payments can also be regarded as an important indicator of the relative importance of currencies in the world. Up-to-date data on currency denomination of international trade are not available. A study conducted in 1981 provides a comprehensive analysis of invoicing on a

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1/ Although Switzerland is a nonmember, the Fund has a special relationship with it. Switzerland has close relations with the Fund as a lender under the enlarged GAB and under the SFF and enlarged access policy, and the Swiss National Bank is a prescribed other holder of SDRs.

Table 5. Relative Shares Based on External Capital Market Data 1/

(In percent)

	1980	1981	1982	1983 2/	1984 2/
I. Shares of currencies within the euro-currency deposit market, end-of-period					
U.S. dollar	74.7	77.7	79.4	79.8	80.0 2/
Deutsche mark	12.5	9.9	9.2	8.5	...
Swiss franc	5.4	5.9	4.9	4.8	...
French franc	1.4	0.9	0.9	1.0	...
Japanese yen	1.1	1.3	1.3	1.4	...
Pound sterling	2.4	1.6	1.3	1.2	...
Netherlands guilder	0.8	0.8	0.8	1.0	...
Others	1.7	1.9	2.2	2.3	...
II. Currency denomination of new international bond issues 3/					
U.S. dollar	47.4	64.9	63.9	56.3	64.3
Deutsche mark	20.1	4.9	7.1	8.5	6.4
Swiss franc	18.2	15.6	14.6	18.7	11.8
French franc	2.4	1.0	--	--	--
Japanese yen	3.3	5.3	4.9	5.2	5.4
Pound sterling	2.7	2.4	2.5	3.6	4.9
Canadian dollar	0.7	1.2	1.5	1.4	1.7
Netherlands guilder	3.1	0.9	1.2	1.4	1.1
Others	1.8	3.8	4.5	4.9	4.4

1/ Derived from data in World Financial Markets, Morgan Guaranty Trust Company.
2/ June for data on currency shares in the eurodeposit market.
3/ Includes both euro-bond issues and foreign bond issues in domestic markets.

global basis. 1/ Information from this study supplemented by those from a more recent survey on invoicing practices in Japan is presented in Table 6. The information does not pertain to the same year for all the countries and relate to 1979 or 1980 for the five countries whose currencies are included in the SDR basket.

The indicator in the last column of the table can be regarded as comprehensive in that it takes into account not only a country's own external trade but also the use of its currency in the trade of other countries. As can be seen the U.S. dollar plays the dominant role in trade invoicing. Among the other four currencies, both the French franc and the pound sterling are significantly above the Japanese yen, using 1979-80 data. More recent data for 1983 indicate that the use of the Japanese yen in invoicing has increased significantly. 2/ On an aggregate basis, the five major currencies in the present basket account for close to 90 percent of currency denomination in invoicing of trade. Though the data pertain to periods up to five years ago, the changes in the relative importance that could be expected to have taken place would not significantly alter these general observations about the ranking of currencies in invoicing international trade.

(iv) Overall importance of supplementary indicators

The supplementary financial indicators analyzed above show the dominant role of the U.S. dollar in the international financial system. If the dollar's relative weight in the SDR basket were to reflect these supplementary indicators either in addition to, or in combination with those already specified by the existing decision, it would increase, other things remaining equal, and the aggregate weight of the other four currencies would be correspondingly reduced. The importance of each of the four other currencies would depend on the manner in which these supplementary indicators would be used. If the supplementary indicators were given a relatively large weight, the relative weights of each of the four nondollar currencies would be somewhat changed from their present configuration. The weights for the Deutsche mark and the Japanese yen would be increased and those for sterling and the French franc would be reduced somewhat.

1/ See S.A.B. Page, "The Choice of Invoicing Currency in Merchandise Trade," Economic Review, National Institute of Economic and Social Research, London, November 1981.

2/ Data provided by the Japanese authorities, as summarized in Euromoney Trade Finance Report, June 1984.

Table 6. Estimates of Shares of Currency Denomination in Trade 1/

Country	Percent denominated in U.S. dollars		Percent denominated in Deutsche mark		Percent denominated in own currency		Percent denominated otherwise		Own currency percentage share in total world exports, using 1979 weights
	Exports (1)	Imports (2)	Exports (3)	Imports (4)	Exports (5)	Imports (6)	Exports (7)	Imports (8)	(9)
United States 2/	98	85	1	4	98	85	1	11	54.8
Germany	7	33	82	43	82	43	11	24	14.4
France	12	29	10	14	62	36	16	21	6.4
Japan	62	93	2	2	33 3/	2 3/	3	3	2.3
United Kingdom	17	29	3	9	76	38	4	24	7.5
Canada 2/	85	95	...	1	--	--	--	--	...
Italy	31	51	22	20	31	9	16	20	...
Netherlands	16	29	22	23	44	28	18	20	...
Belgium	12	23	18	18	42	28	28	31	...
Switzerland 2/	7	27	8	24	83	38	2	11	...

Source: Condensed from S.A.B. Page, "The Choice of Invoicing Currency in Merchandise Trade," Economic Review, National Institute of Economic and Social Research, London, November 1981.

1/ The sources used different methods, coverages and definitions and most are from small samples or surveys conducted for various years over the period 1976-80.

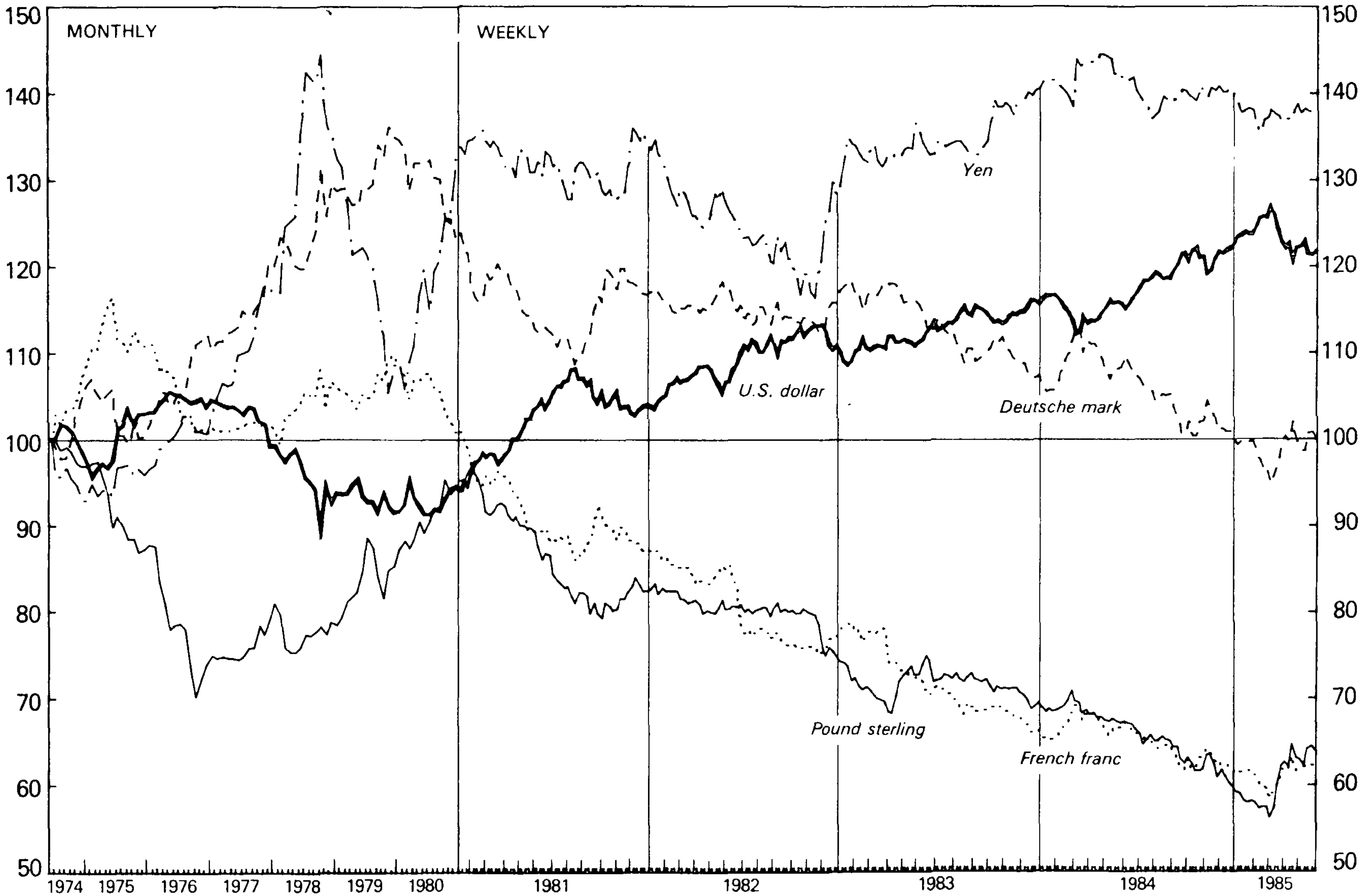
2/ Estimates based on trading partner data, limited surveys for Switzerland and the United States and information about pricing practices for individual primary commodities.

3/ By the first quarter of 1983, the share of Japan's exports invoiced in Japanese yen had increased from 33 percent to 40 percent although the share of imports denominated in yen increased from 2 percent to only 3 percent, as indicated by a recent survey by the Japanese Ministry of Finance, summarized in Euromoney Trade Finance Report, June 1984.

CHART 1

INDEXES OF EXCHANGE RATES OF FIVE MAJOR CURRENCIES AGAINST THE SDR

JUNE 1974 - MAY 1985
(June 28, 1974=100)



III. Determination of Currency Amounts

1. The SDR basket and changes in exchange rates

The standard basket method of valuation is intended to assure the stability of the SDR in terms of a group of currencies, i.e., the value of the SDR is expected not to change over time in terms of currencies in general. In that respect, the standard basket can in principle be conceived as a variant of an effective exchange rate index which averages the movements of the component exchange rates. However, the shares of currencies in the basket, which initially are set equal or close to the weights for the currencies in the basket, do not remain constant over time; they could fluctuate around their initial values or they could increase (decrease) as a consequence of appreciating (depreciating) trends in their exchange rates. 1/

Since the present basket came into effect in January 1981, the overall experience has been one of a substantial cumulative depreciation against the SDR of the currencies in the basket except the U.S. dollar and the Japanese yen (see Chart 1, which shows the exchange rates of the five major currencies against the SDR from June 1974 to May 1985), although exchange market movements have been erratic from time to time. 2/ This has led to a substantial increase in the U.S. dollar's value in SDR terms and a corresponding increase in its share in the basket, which has risen from its initial level of 42 percent in January 1981 to more than 54 percent at the end of May 1985, with a corresponding reduction in the combined share of the other four currencies, from 58 percent to 46 percent (see Table 7 and Chart 2, which shows also the monthly movements of these shares). 3/ Of these

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1/ For example, given the composition of the present basket, a 5 percent appreciation of the Deutsche mark against the U.S. dollar implies an approximately 0.6 percentage point increase in the Deutsche mark's share in the value of the SDR. A uniform 5 percent appreciation of the U.S. dollar against the other four currencies would result in an increase of about 1.2 percentage points in the dollar's share in the SDR. The exact relationship is:

$$\frac{\partial S_i}{\partial E_i} \cdot E_i = S_i(1-S_i)$$

where S_i is the share of currency i in the basket and E_i is the exchange rate of currency i, expressed in U.S. dollars per currency unit.

2/ The French franc and the pound sterling depreciated by about 50 percent against the U.S. dollar while the Deutsche mark and the Japanese yen eased by 37 percent and 20 percent respectively between the beginning of 1981 and the end of May 1985.

3/ The U.S. dollar's share in the SDR valuation actually reached a peak of 57.1 percent on February 26, 1985.

Table 7. Changes in the Exchange Value of the SDR and Actual Shares of Currencies in the SDR Valuation Basket, 1981-85

(In percent)

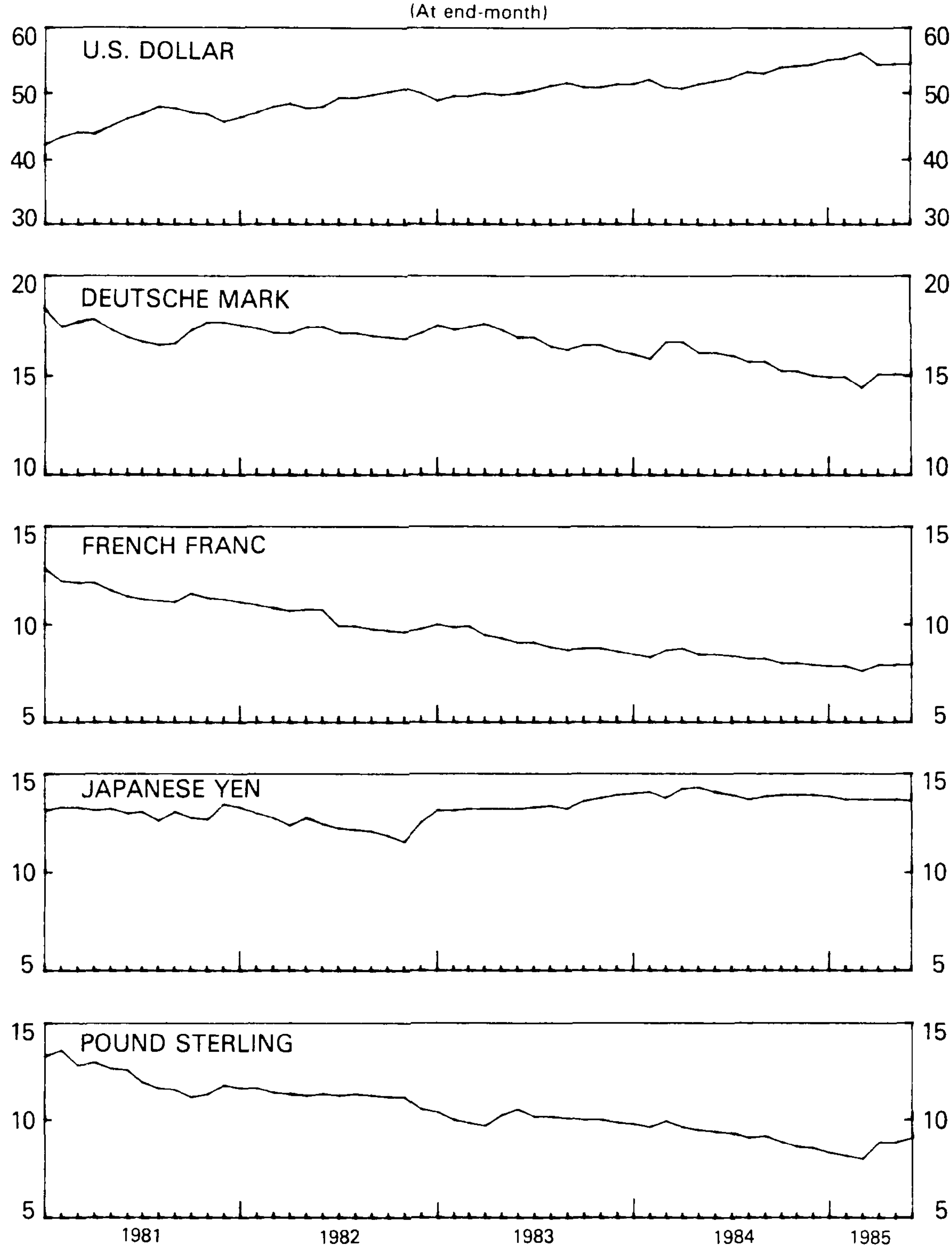
	1981	1982	1983	1985	May 1985
	(At end of period, except as indicated)				
I. Change in SDR nominal exchange rate from its initial value on December 31, 1980					
Against the U.S. dollar	-8.8	-13.6	-18.0	-23.2	-22.1
Against the Deutsche mark	5.6	5.4	14.7	24.1	22.8
Against the French franc	15.9	28.9	51.6	63.4	62.4
Against the Japanese yen	-2.5	-1.3	-7.4	-6.3	-3.4
Against the pound sterling	13.8	27.4	34.6	58.0	45.8
II. Actual shares in valuation basket 1/					
U.S. dollar (42)	46.4	49.0	51.6	55.1	54.3
Deutsche mark (19)	17.5	17.6	16.1	14.9	15.0
French franc (13)	11.1	10.0	8.5	7.8	7.9
Japanese yen (13)	13.4	13.2	14.0	13.8	13.6
Pound sterling (13)	11.6	10.4	9.8	8.4	9.1

1/ Percentage shares under 1980 Decision shown in parentheses.

CHART 2

ACTUAL PERCENTAGE SHARES OF CURRENCIES IN THE SDR VALUATION BASKET, DEC. 1980- MAY 1985

(At end-month)



four, the share of the Japanese yen increased slightly from 13 percent to 13.6 percent because of its relative appreciation in terms of the other three currencies, whereas those of the Deutsche mark, the French franc, and the pound sterling declined substantially to 15.0 percent, 7.9 percent, and 9.1 percent from their initial weights of 19, 13, and 13 percent respectively. In view of the relatively large impact on the value of the SDR of the strong and prolonged appreciation of the U.S. dollar, a realignment of the currency weights in the SDR basket will lead inevitably to substantial changes in the corresponding currency amounts in the basket. 1/ As pointed out below, the transactions values of currencies in terms of the SDR would, however, be the same under the old and the new baskets on the day of the changeover to the new basket.

2. Currency amounts in the basket

The amount of each currency in the revised valuation basket will reflect both the weights assigned to each of them and the average exchange rates over a prescribed period preceding the date when the revised basket comes into effect. Thus, the currency amounts in the basket will change because either the initial weights are changed or the exchange rates change, or both. Indeed at the time of the 1980 review of the SDR basket, the Board Decision specified the relative weights of the constituent currencies and the method of determining the currency amounts at the end of the year. The specific procedures governing the determination of the currency amounts are described in Section V below and in Appendix III. 2/

Table 8 provides an illustrative calculation of currency amounts, based on end-May 1985 exchange rates, using the rounded set of weights in Table 3, Part I, Column (5). It will be noted that compared with their initial weights in the present valuation basket, the rounded weights for the U.S. dollar, at 42 percent, and the Deutsche mark, at 19 percent are unchanged but those for the pound sterling and the French franc are reduced, and the weight for the Japanese yen is increased. Under the standard basket technique, under which the value of the SDR

1/ The question was raised in earlier revisions of the basket whether to make provision for a change in the currency amounts within the five-year period between reviews of the valuation basket if the currency shares were to move substantially out of line with the initial weights. Frequent adjustment of currency amounts to reflect changes in currency shares arising from exchange rate changes that reflect the interaction of market forces would not necessarily contribute to a greater degree of stability in SDR exchange rates. For an early discussion of this issue see "Alternative Approaches in the Valuation of the SDR," SM/77/276 (11/28/77), especially p. 7.

2/ The resulting fixed currency amounts of the basket is replicated outside the Fund for purposes of constructing "parallel" SDR-denominated units of account.

Table 8. Calculation of Illustrative Currency Amounts in Revised SDR Valuation Basket Based on New Rounded Percentage Weights and on End-May 1985 Exchange Rates

Currency	Current basket			Hypothetical basket based on rounded weights and using exchange rates at end-May 1985		Percentage changes in currency amounts from present basket
	Initial percentage weights	Actual percentage share, at end-May 1985	Currency amounts	Rounded percentage weights 1/	Currency amounts 2/	
U.S. dollar	42	54.3	0.54	42	0.417	-22.8
Deutsche mark	19	15.0	0.46	19	0.583	26.7
French franc	13	7.9	0.74	12	1.12	51.4
Japanese yen	13	13.6	34.0	15	37.5	10.3
Pound sterling	13	9.1	0.071	12	0.094	32.4

1/ See Table 3, Part I, Column (5).

2/ For a given set of weights, the currency amounts shown are indicative amounts, which are likely to be different depending on (i) the average and end-period exchange rates of the base reference period (October-December 1985) to be used for revising the SDR basket's currency components, and (ii) the rounding procedures to be applied to the currency amounts themselves. In the past, these were rounded to two significant digits, as described in SM/80/206, Sup. 3 (12/15/80). Appendix III reproduces the formulas for rounding the currency amounts when the new basket is determined.

is stabilized in terms of currencies in general, the larger the depreciation (appreciation) of a currency against the SDR, the larger will be the corresponding increase (decrease) in the number of units of the currency in the new basket. As shown in Table 8, this would imply a 23 percent reduction in the U.S. dollar component--from 54 cents to about 42 cents--and a relatively small increase (10 percent) in the currency amounts of the Japanese yen while those for the French franc, the pound sterling, and the Deutsche mark are increased substantially from their present levels.

As noted earlier, the shares of the currencies in the standard basket change in accordance with changes in exchange rates until a new reweighting of currencies is effected. While the changes in currency amounts are the consequence of the revision of the basket, they are unlikely in themselves to exert an impact, in any predetermined direction, on the future performance of the SDR valuation basket. Given the nature of the standard basket technique, the objective of periodic revision is to realign the shares of constituent currencies in a manner that reflects the changed circumstances of those currencies, with the SDR exchange rate being the same under both the "old" and revised baskets on the transition date.

The reduction of the actual share of the U.S. dollar from its end-May level of about 54 percent to 42 percent does not imply that a potential appreciation (or depreciation) of the U.S. dollar would carry lesser weight in the new basket, in comparison with the old. In fact, the opposite is the case and would make the value of the SDR more sensitive to movements of the U.S. dollar against the other four currencies. Under the present basket containing 54 U.S. cents, a one percent appreciation of the U.S. dollar against the other four currencies implies a decline in the U.S. dollar value of the SDR of about 0.46 percent, because the value of the nondollar components, with an aggregate weight of about 46 percent, decline by the amount of the dollar's appreciation. With a new basket containing 42 U.S. cents (assuming that at the transition date the SDR value was equal to one U.S. dollar as is the case at present), the same one percent appreciation of the U.S. dollar against the other four currencies implies a 0.58 percent depreciation of the SDR in terms of the U.S. dollar. The nature of the basket technique is such that the larger the U.S. dollar weight, the smaller will be the change in the value of the SDR against the U.S. dollar. 1/ If the adjustment of currency amounts were to reduce (increase) the initial weight of the U.S. dollar from its present levels, the value of the SDR would become more (less) sensitive to the change in the U.S. dollar against the other four currencies.

1/ Analogous conclusions hold as regards the other currencies in the basket. At the limits, i.e., with only the U.S. dollar in the basket, the basket would not fluctuate at all against the dollar, or with only nondollar currencies in the basket, the SDR value would reflect to the fullest the change of the nondollar currencies against the U.S. dollar.

IV. The SDR Interest Rate Basket

In September 1980, the Executive Board decided that from January 1, 1981, the SDR valuation and interest rate baskets would be identical. The SDR interest rate would be determined under Rule T-1 by reference to a "combined market interest rate" calculated on the amounts of the five currencies in the SDR valuation basket and interest rates on short-term domestic money market instruments selected for that purpose. 1/ This section briefly reviews the likely consequence on the SDR interest rate of the change in currency amounts and weights in the SDR interest rate basket and also the market instruments for the five currencies in the basket.

1. Effects of change in currency amounts and weights on the combined market rate

The SDR interest rate is determined as a weighted average of the interest rates on the financial instruments listed in Rule T-1, with the weights for the interest rates corresponding to the actual shares of currencies in the valuation basket. Thus, the shares of the currencies in the valuation basket are identical with the weights of the corresponding interest rates in the interest rate basket. These weights are the products of the currency amounts in the basket and their SDR exchange rates, and they change over time to reflect the relative exchange market performance of the five major currencies. As noted earlier, the revision of the SDR valuation basket is made in a manner that realigns the actual shares of the currencies in the basket to an agreed set of weights while maintaining unchanged the transactions value of the SDR at the time of revision. However, the change in the weights and currency amounts in the SDR valuation basket is not reflected in a comparable continuity in the combined market rate at the time of the revision, or in the calculations of SDR interest rates on Fund borrowing, which are computed in the same manner as the combined market rate that determines the SDR interest rate. The break in continuity in the combined market interest rate arises mainly because the change in relative shares of currencies in the basket applies to a configuration of short-term domestic interest rates that often differ from each other for various reasons and which result in uncovered interest differentials, as explained further below.

Prior to the 1980 review, the interest rate basket comprised the same five currencies as in the present basket but the weights in the interest rate basket were constant and independent of changes in exchange

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1/ Rule T-1 is reproduced in Appendix II. The method of calculating the SDR interest rate is as follows: the interest rate on the financial instruments in the SDR interest basket is multiplied by the number of units of that currency in the basket, and the product is then multiplied by the value of the currency unit in terms of the SDR; the resulting products for the five currencies are then added together.

rates and changes in and the relative shares of currencies in the valuation basket. This system of fixed weights for the interest rate basket was replaced on January 1, 1981, by one based on the products of the fixed currency amounts of the valuation basket and prevailing exchange rates. The changes agreed in 1980 had consequential effects in that the combined market interest rate actually calculated was somewhat lower than the results of the previous interest rate basket. For example, at the end of 1980, the combined market rate was calculated at 13.59 percent, compared with 13.91 percent which would have resulted if the interest rate basket had used the previous fixed weights of 49 percent for the U.S. dollar, 18 percent for the Deutsche mark, and 11 percent each for the other three currencies. 1/ At the time, the U.S. dollar had the highest three-month interest rate (at 16.71 percent) and the significant lowering of its weight in the interest rate basket from 49 percent to 42 percent contributed to a downward shift in the SDR interest rate that could be attributed to the revision of the interest rate basket. A similar but smaller downward shift in interest rates also occurred in 1978 when the fixed weights of the interest rate basket were revised; at that time, the combined market rate was at 6.15 percent under the

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1/ The weights in the interest rate basket changed from a fixed-weight system before 1981 to a fixed-currency amount system with initial weights in 1981 as follows (in percent):

	Fixed weights		
	July 1974- June 1978	July 1978- Dec. 1981	Initial weights on Jan. 1, 1981
U.S. dollar	47	49	42
Deutsche mark	18	18	19
French franc	11	11	13
Japanese yen	11	11	13
Pound sterling	13	11	13

The effect of changes in these weights on the SDR interest rate was mitigated to some extent by the fact that the SDR interest rate was then determined as a percentage, less than 100 percent, of the combined market rate. The SDR interest rate was 60 percent of the combined market rate from July 1976 to June 1978, 80 percent of the combined market rate from July 1978 to April 1981, and 100 percent of the combined market rate since May 1981.

revised basket, compared with 6.2 percent under the previous basket. 1/

As mentioned above and as has occurred previously, interest rate shift effects may also be expected when the SDR valuation basket is revised at the end of 1985, and when the weights in the interest rate basket are adjusted. These effects would apply not only to the SDR interest rate itself but also to the interest rates on Fund borrowing, because the interest rates on existing EAR loans replicate the calculation procedures used to determine the combined market rate for the SDR, except that interest rate instruments of different maturities are included in the calculation (see Table 9). As indicated in the table, if exchange rate and interest rate configurations at end-May were to prevail at year-end, there would be one-time upward shifts in the combined market interest rate calculations of 0.08-0.18 percentage point for maturities of one year or less, with the greatest differences corresponding with the shortest three-month maturity. For the five-year maturity, there would be a marginal decline in the combined market calculation. The greater the convergence of individual interest rates, as in the case of the five-year maturity for domestic instruments, the smaller the shifts in interest rates that arise from revising the valuation and interest rate baskets.

An assessment of these results can be made in terms of the individual interest rates and effective-yield performance of the currencies in the SDR basket. Expectations of future exchange and inflation rates, domestic money market conditions, and risk-related considerations could be viewed as major elements behind the divergence of domestic interest rates denominated in different currencies. To the extent, for example, that expectations of future depreciation (appreciation) are firmly

1/ It may be noted that in the Board's discussion in 1978 of the determination of new weights for the SDR interest rate basket, calculations were made to indicate that the proposed changes in the weights would be unlikely to have an appreciable effect on the SDR interest rate. See "Determination of the SDR Interest Rate Under the Amended Articles," SM/78/78 (3/14/78). In 1980, when the Board decided to use "floating" weights for the interest rate basket, the potential impact on the SDR interest rate of this change in the calculation method was expected to be negligible ("Substitution Account - Choice of Instruments for the SDR Interest Rate Basket and Related Issues," SM/80/82, 4/2/80) but the impact of revising the weights themselves was considered only in the context of alternative sizes, in terms of the number of included currencies, for the unified interest and valuation basket. The Japanese yen interest rate instrument was also changed in 1980 to the discount rate on two-month bills from that on bills passing two month-ends because of a change in local market practice but this was not expected to have any noticeable effect on the SDR interest rate (see "SDR Valuation and Interest Rate Basket - Instrument for the Japanese Yen Interest Rate," SM/80/206, Supplement 1, 9/2/80).

Table 9. Shifts in Combined Market Interest Rates on SDR-Denominated Assets Based on Hypothetical Revision of the SDR Valuation Basket

(As of end-May 1985)

	U.S. dollar (1)	Deutsche mark (2)	French franc (3)	Japanese yen (4)	Pound sterling (5)	Combined market interest rates: Present basket (6)	Hypothetical revised basket (7)	Difference col. (7)-(6) (8)
Currency amounts 1/								
Present basket	0.54	0.46	0.74	34	0.071			
Revised basket 2/	0.417	0.583	1.12	37.5	0.094			
Interest rates on Fund-related assets								
SDR:								
Three-month maturity	7.37	5.8806	10.2656	6.38	12.0714	7.67	7.85	0.18
Fund borrowing:								
Domestic instruments								
Six-month maturity	7.75	5.85	10.2500	6.4200	12.5000	7.91	8.05	0.14
One-year maturity	8.15	5.76	10.7092	6.4450	11.6400	8.08	8.16	0.08
Five-year maturity	9.90	6.92	11.3300	6.1610	11.3500	9.19	9.11	-0.08
Eurocurrency instruments								
Three-month maturity	7.8750	5.6875	10.3125	6.3750	12.7500	7.97	8.10	0.13
Six-month maturity	8.1875	5.7500	10.4375	6.4375	12.5625	8.16	8.25	0.09

1/ The currency amounts in the revised basket are based on percentage weights of 42 percent for the U.S. dollar, 19 percent for the Deutsche mark, 15 percent for the Japanese yen, and 12 percent each for the French franc and the pound sterling.

2/ See Table 8, footnote 2.

held, corresponding upward (downward) pressures would tend to persist in the interest rates for a given currency, as this would eliminate differences in the expected effective yield, compared with alternative investments in other currencies. Thus, as might be expected, interest rates for the five currencies in the basket during the past five years have shown a tendency to move, relative to the combined market rate, in the opposite direction from changes in exchange rates. 1/ The U.S. dollar interest rate at the end of 1981 was approximately 3 percentage points higher than the combined market average but has fallen close to the combined market rate in May 1985. On the other hand, the interest rates on the Deutsche mark and the Japanese yen remained below the combined market rate but moved upward relative to this rate, whereas those on the French franc and the pound sterling, which were close to or lower than the combined market rate in 1981 have recently moved substantially above this rate. As a consequence, the present configuration of interest rates and exchange rates is such that currencies with relatively high interest rates have weights in the interest rate basket that are lower than their initial weights in 1981.

The possible divergent trend in interest rates associated with exchange rate expectations mainly explains the adjustment in interest rates on SDR assets at the time that the SDR interest rate basket is revised on the basis of the latest exchange rates and interest rates. The effect of an increase in the actual weight of the high-interest currencies, as in the present case for shorter maturities, is not fully compensated by the corresponding decline in the weight of the low-interest currencies. The actual size and sign of this shift would, of course, depend on the actual configuration of exchange and interest rates at the end of 1985. It is also to be noted that the SDR interest rate is calculated weekly each Friday for the week beginning on the ensuing Monday, and the size of the adjustment in the combined market rate will depend on the changes in exchange and interest rates close to but not exactly on the date the new SDR valuation basket comes into effect. This matter will be further discussed in the paper to be presented to the Executive Board in which the new currency amounts would be calculated nearer to the time of the change.

It will be recalled that Rule T-1(d) provides for a review of the interest rate on SDR holdings at the conclusion of each financial year. As indicated in the "Review of the Fund's Income Position for the

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1/ It may be noted that the exchange rate performance of the currencies in the SDR basket is an important factor determining the effective yield of the SDR, which is the rate of interest on the SDR adjusted for any change in its capital value (see Appendix IV). The effective yield of the SDR in the last four and a half years has varied over a wide range in terms of different currencies, reflecting not only an uneven exchange market performance of the constituent currencies of the SDR but also because interest rate changes were only partially compensated by exchange rate changes.

Financial Years 1985 and 1986," EBS/85/104 (4/25/85), no change is proposed as regards the SDR rate of interest. However, the question of any change in the SDR interest rate resulting from a new valuation basket will be reviewed at the time of its introduction at the beginning of 1986.

2. Review of the instruments in the SDR basket

The choice of instruments in the SDR interest rate basket is governed by the comparability of their quality, maturity and ready availability of quotations. The existing instruments in the SDR interest basket are: market yield on three-month U.S. Treasury bills and market yield on three-month U.K. Treasury bills, three-month interbank deposit rate in Germany, three-month interbank money rate against private paper in France, and discount rate on two-month (private) bills in Japan. These domestic instruments not only meet the standards noted above but also the criteria that they: (i) are representative, for the currency concerned, of financial instruments that are actually available to investors, (ii) reflect the reserve asset choices of foreign investors, and (iii) have risk characteristics similar to the official standing of the SDR itself. 1/ In "The Level of the SDR Interest Rate" (SM/83/244), certain developments in the money markets in the United Kingdom and France were described, notably the decline in market share of Treasury bills in the United Kingdom and the diminished representativeness of the French franc financial instrument. It was concluded, however, that the existing instruments remained broadly appropriate in light of the above-mentioned criteria for inclusion in the SDR interest rate basket, and there did not appear to be any strong reason at that time to propose changes in the SDR interest rate basket.

In the view of the staff, and after consulting the authorities of some of the currencies included in the basket, there have been no significant changes in the role of the instruments in the SDR interest basket in their domestic money market since the last review and they have broadly maintained the representativeness of national money market conditions. Consequently, it is proposed that the market instruments for the five currencies in the SDR interest rate basket be maintained unchanged at this time. However, the staff will continue to monitor developments that might influence both the evolution of the present instruments and the availability of comparable instruments that might be considered for the determination of the interest rate, and particularly if more comparable three-month governmental instruments were to develop; such developments could be discussed at any appropriate time between the five-year reviews of the SDR valuation basket.

1/ See "The Level of the SDR Interest Rate," SM/83/244 (11/29/83) and "A Note on Interest Rates on SDR-Denominated Assets," SM/84/68 (3/28/84). See also "SDR Valuation and Interest Rate Basket," SM/80/206 (8/22/80).

V. Proposed Weights and Transition to the New SDR Basket

1. Proposed new weights

The existing decision on the SDR valuation basket requires that any change in the currency amounts in the basket will take effect on January 1, 1986. In the past, revisions of the SDR valuation basket had been completed by the end of September in order to allow a period of three months for official and private parties to be informed of the new weights for the currencies included in the SDR basket and to familiarize themselves with other changes in the new SDR basket and related procedures. On the basis of the analysis presented in the preceding sections, no proposal is made to change the method of calculation of the SDR valuation basket.

As regards the formula to be used in connection with the revision of the percentage weights for the currencies in the valuation basket, some adjustments, such as that involved in rounding to the nearest one percent or as may be convenient, may be envisaged. The supplementary criteria discussed in Section II, without strictly combining them in a predetermined quantitative manner in order to arrive at the percentage weights, would tend to give support to the ranking and relative position of the currencies as derived from the updated calculations. It is not proposed to diverge from the requirement that the calculations be rounded to the nearest one percent. The new initial weights in the valuation basket that would take effect on January 1, 1986, would be: U.S. dollar, 42 percent; Deutsche mark, 19 percent; Japanese yen, 15 percent; French franc, 12 percent; pound sterling, 12 percent.

The Executive Directors will recall that they are not committed to follow automatically the results of the formula regarding the rounding of the weights of the five currencies. Departures from the formula would constitute a change in the method of valuation of the SDR and would require a qualified majority of the total voting power, i.e., a majority of 70 percent or, if the Board were to decide that the change proposed was a fundamental change in the application of a principle in effect, an 85 percent majority of the total voting power. 1/ In this connection, it will be recalled that a change in the method of valuation of the SDR will require consultations with the Fund's lenders under the Supplementary Financing Facility (SFF) and the Enlarged Access Policy on the options which they might wish to exercise with respect to the valuation of outstanding loans to the Fund. Furthermore, it would be appropriate for the prescribed holders of SDRs and other institutions that have adopted the SDR as a unit of account to be informed of the revision of the weights well ahead of the date of a new basket coming into effect.

1/ See "SDR Valuation - Majority for Decision," SM/80/180 (7/18/80).

2. Transition to the new SDR basket

Paragraph 3b together with paragraph 4 of the present decision on the method of valuation set out the procedures for the transition to the new basket which will ensure an identical transactions value for the SDR on the basis of the old and the new baskets on the last working day preceding January 1, 1986. The currency amounts corresponding to a given set of relative weights in a revised basket will also be derived. The currency amounts will be calculated so as to minimize the percentage deviation from the agreed weights applied to the average exchange rates over the reference period of three months preceding the coming into effect of the revision, subject to the above-mentioned requirement that the SDR value on the transition date shall be equal under the old and the new baskets. The formula for these calculations is discussed in Appendix III. The transition date is the last business day at which the old basket remains in effect, i.e., the last working day of 1985. 1/

3. Representative rates of exchange

The value of the SDR in terms of the U.S. dollar is the sum of the U.S. dollar values of the amounts of the currencies that comprise the SDR valuation basket. The value of the SDR in terms of other currencies is normally the product of the U.S. dollar value of the SDR and the representative exchange rate of the currency, expressed in currency units per U.S. dollar. The exchange rates used for the purpose of determining the U.S. dollar value of the SDR are the middle rates between the buying and selling rates for the currencies in the London foreign exchange market at noon, as determined by the Bank of England. This system works effectively and no change is proposed. However, the representative rates for three of the currencies in the SDR valuation basket differ from their London noon rates because these representative rates against the U.S. dollar are determined in each member's own exchange market and at varying times. These differences give rise to certain operational difficulties, in particular with respect to the placing by the Fund of SDR-denominated deposits with the Bank for International Settlements (BIS). Consequently, consideration might be given to determining the representative rates for all the currencies in the SDR valuation basket in one common foreign exchange market. A more detailed analysis of this issue will be presented in a staff memorandum to be issued shortly.

1/ See "SDR Valuation Basket - Calculation of the Currency Amounts," SM/80/206, Supplement 3 (12/15/80) and Supplement 5 (12/22/80).

VI. Summary and Conclusions

1. Decision No. 6631 governing the valuation of the SDR provides that the present SDR valuation basket is to be revised with effect from January 1, 1986 and on the first day of each subsequent five-year period in accordance with the terms of that decision unless the Fund decides otherwise in connection with a revision. The list of currencies to be included in the basket will be the currencies of the five members whose exports of goods and services had the largest values in the five-year period ended 12 months before the effective date of change in the valuation basket. On the basis of this criterion, it is concluded that the currencies to be included in the revised basket will continue to be the U.S. dollar, the Deutsche mark, the pound sterling, the French franc, and the Japanese yen.

2. Relative weights of the currencies in the SDR basket are to be determined, according to the decision, by the relative shares in the total for the period 1980-84 of (i) exports of goods and services of the countries that issue these currencies, and (ii) the balances of these currencies held by other countries as reserves. The calculations using data for these economic variables indicate unrounded weights of the currencies in the SDR basket of the following amounts: U.S. dollar, 42.04 percent; Deutsche mark, 19.25 percent; Japanese yen, 14.94 percent; French franc, 11.98 percent; pound sterling, 11.79 percent. As compared with the calculations made in connection with the 1980 revision of the SDR basket, the calculated rounded shares of the U.S. dollar and the Deutsche mark in the aggregate value of these two variables have declined by two percentage points each while that of the Japanese yen increased by three percentage points to 15 percent; the share of the pound sterling rose by a percentage point to 12 percent while the position of the French franc remained unchanged at 12 percent. The results of the calculations using updated data reflect broadly the relative significance of the factors that underlay the percentage weights used to determine the amounts of the currencies in the present basket. From the results of these calculations, the new weights for the currencies in the SDR valuation basket, rounded to the nearest one percent, would be as follows: U.S. dollar 42 percent; Deutsche mark 19 percent; Japanese yen 15 percent; French franc 12 percent; pound sterling 12 percent. The Executive Board, by a 70 percent majority of the voting power, could decide on another method of rounding.

3. Supplementary data with respect to a number of other financial variables were also analyzed to obtain some further indication of the relative positions of the five currencies in the SDR basket. These data covered exchange market turnover (in New York), outstanding volume of eurocurrency deposits, new international bond issues, and currency denomination in invoicing of trade. The available data in these areas have deficiencies with respect to both coverage and quality but they clearly indicate the predominance of the U.S. dollar in the international financial system. If these supplementary indicators were used in conjunction with the economic factors specified in the decision, the weight

of the U.S. dollar would tend to increase from the level resulting from using the shares in exports of goods and services and balances of currencies held by other members; the growing relative importance of the Japanese yen was also a feature of these supplementary data on the financial role of members in the international financial system. These supplementary data would not indicate a need to qualify the results of the calculation of the new weights based on the sum of exports of goods and services and currency holdings as provided under the applicable decision. The staff would however continue to monitor developments, between the quinquennial reviews of the SDR valuation basket, in world trade and the extent to which currencies are used as units of account, as means of payment for international transactions, and for the denomination of foreign debts.

4. The substantial changes in exchange rates since the beginning of 1981 have led to significant changes in the shares of the currencies in the basket as compared with the initial weights determined in 1980. The exchange rates of the Deutsche mark, the French franc, and the pound sterling depreciated over the period 1981-May 1985 by 37-52 percent against the U.S. dollar and that for the yen eased by a smaller margin of 20 percent. The shares in the SDR basket of the Deutsche mark, the pound sterling, and the French franc declined to 15.0 percent, 7.9 percent and 9.1 percent from their initial shares of 19 percent, 13 percent and 13 percent respectively. In contrast the share of the U.S. dollar rose from 42 percent to 54.3 percent and that for the Japanese yen rose slightly to 13.6 percent from 13 percent. These substantial changes in actual shares imply that significant changes in the currency amounts of the new SDR basket will take place if the present pattern of exchange rates were maintained in the last quarter of 1985 preceding the coming into effect of the new basket.

5. The changes in SDR exchange rates are major determinants of changes in the effective yield of the SDR, and interest rate developments over the period as a whole did not fully compensate for changes in the individual exchange rates. As a consequence, the effective yield of the SDR in terms of different currencies varied widely. However, the performance of the so-called standard basket for valuing the SDR and also the working of the SDR interest rate basket have been generally satisfactory since the beginning of 1981. There does not seem a compelling need, in the light of experience, to change the standard basket approach used to value the SDR, though such a conclusion should not preclude some future study of alternative methods that might be used to value the SDR. Furthermore, there would also seem to be little need to change the criteria for determining both the list of currencies in the basket or the procedure for determining their initial weights in the valuation basket of the SDR. The existing criteria would seem to lend representativeness, stability and continuity to the present method of valuing the SDR basket.

6. In accordance with the 1980 Decision on the valuation of the SDR, the average exchange rates prevailing in September-December 1985 will be applied to the agreed weights to determine the currency amounts in the valuation basket. Notwithstanding the small margins of change over the 1980-84 period with respect to the calculated weights of three of the five currencies, the amounts of the respective currencies to be included in the SDR basket are likely to change significantly in the light of the substantial changes in relative exchange rates. These changes do not introduce any particular bias in the method of valuation of the SDR. However, under all circumstances the amounts of currency will be determined in a manner which would ensure that the value of the SDR calculated on the last business day of 1985 on the basis of the new basket will be the same as that actually prevailing on that day so as to avoid a discrete change in the transactions value of the SDR against individual currencies.

7. The revision of the currency shares in the SDR valuation basket would consequentially result in a realignment of the amounts of currency in the SDR interest rate basket, as the currency amounts in the interest basket are identical with those in the SDR valuation basket. However, partly because expectations of changes in exchange rates tend to be reflected in domestic interest rates used in the SDR interest rate basket and also because of other factors that bring about interest rate differentials, the revision of the currency amounts in the SDR valuation basket would, on the basis of present exchange rate and domestic interest rate configurations, possibly result in a discrete change in the SDR interest rate at the time the new SDR valuation basket comes into effect. Based on the configuration of exchange rates and interest rates at the end of May 1985 and using the new weights of 15 percent for the Japanese yen and 12 percent each for the French franc and the pound sterling, there would be an upward adjustment in the combined market rate of the order of 1/5 of 1 percent at the time the calculation was made. An adjustment is likely also to occur in the calculation of the Fund's borrowing rates under the Enlarged Access Policy. The date of the calculation of the new basket and the actual date that the SDR interest rate is determined will not be coincident and further changes in exchange rates and interest rates will ensue. At this time it is not foreseeable whether the discrete change in the SDR interest rate or any of the interest rates on SDR-denominated loan claims on the Fund will be upwards or downwards.

A change in the SDR interest rate as a result of the realignment of weights in the SDR valuation basket and interest basket is not expected to change the effective yield of the SDR to any appreciable extent. It is, therefore, suggested that any change in the SDR interest rate that would automatically follow the realignment of weights in the SDR valuation basket, would be considered further nearer the date of the effective change in the SDR valuation basket. The staff will supply, with the calculations of the currency amounts in the new basket, the details of the likely change in the SDR interest rate basket as of the date of changeover to the new valuation basket. The Executive Directors will then be in a position to review in particular the interest change that would result from the realignment of weights in the SDR valuation basket.

It would also be the intention of the staff to monitor developments that influenced the choice of comparable instruments for the determination of the SDR interest rate between the five-year reviews of the baskets, in particular in the event that more comparable three-month governmental instruments were to develop.

Special Drawing Right--Method of Valuation

1. Effective January 1, 1981, the value of one special drawing right shall be the sum of the values of specified amounts of the currencies listed in 2. below, the amounts of these currencies to be determined on December 31, 1980 in a manner that will ensure that, at the average exchange rates for the three-month period ending on that date, the shares of the currencies in the value of the special drawing right correspond to the weights specified for each currency in 2. below.

2. On the basis of changes in members' exports of goods and services and in official balances of members' currencies held by other members since the previous review of the method of valuation of the SDR conducted in March 1978, that the currencies and weights referred to in 1. above shall be as follows:

Currency	Weight (In percent)
U.S. dollar	42
Deutsche mark	19
French franc	13
Japanese yen	13
Pound sterling	13

3. The list of the currencies that determine the value of the special drawing right, and the amounts of these currencies, shall be revised with effect on January 1, 1986 and on the first day of each subsequent period of five years in accordance with the following principles, unless the Fund decides otherwise in connection with a revision:

a. The currencies determining the value of the special drawing right shall be the currencies of the five members whose exports of goods and services during the five-year period ending 12 months before the effective date of the revision had the largest value, provided that a currency shall not replace another currency included in the list at the time of the determination unless the value of the exports of goods and services of the issuer of the former currency during the relevant period exceeds that of the issuer of the latter currency by at least one percent.

b. The amounts of the five currencies referred to in a. above shall be determined on the last working day preceding the effective date of the relevant revision in a manner that will ensure that, at the average exchange rates for the three-month period ending on that date, the shares of these currencies in the value of the special drawing right correspond to percentage weights for these currencies, which shall be established for each currency in accordance with c. below.

c. The percentage weights shall reflect the value of the balances of that currency held at the end of each year by the monetary authorities of other members and the value of the exports of goods and services of the issuer of the currency over the relevant five-year period referred to in a. above, in a manner that would maintain broadly the relative significance of the factors that underlie the percentage weights in paragraph 2 above. The percentage weights shall be rounded to the nearest one percent or as may be convenient.

4. The determination of the amounts of the currencies in accordance with 1. and 3. above shall be made in a manner that will ensure that the value of the special drawing right in terms of currencies on the last working day preceding the five-year period for which the determination is made will be the same under the valuation in effect before and after revision.

Decision No. 6631-(80/145) G/S
September 17, 1980

Interest, Charges, and Assessments in Respect of SDRs

Rule T-1. (a) Interest and charges in respect of SDRs shall accrue daily at the rate referred to in (b) below. The amount that has accrued during each quarter of the financial year of the Fund shall be paid promptly as of the beginning of the following quarter. The accounts of participants shall be credited with the excess of interest due over charges or debited with the excess of charges over the interest due. The accounts of holders that are not participants shall be credited with the interest due.

(b) The rate of interest on holdings of SDRs for each weekly period commencing each Monday shall be equal to the combined market interest rate as determined by the Fund at the beginning of the period in the manner described in (c) below.

(c) The combined market interest rate shall be the sum, rounded to the two nearest decimal places, of the products that result from multiplying each yield or rate listed below, expressed as an equivalent annual bond yield, for the preceding Friday by the value in terms of the SDR on that Friday of the amount of the corresponding currency specified in Rule O-1, as determined pursuant to Rule O-2(b). If a yield or rate is not available for a particular Friday, the calculation shall be made on the basis of the latest available yield or rate.

U.S. dollar	Market yield for three-month U.S. Treasury bills
Deutsche mark	Three-month interbank deposit rate in Germany
French franc	Three-month interbank money rate against private paper in France
Japanese yen	Discount rate on two-month (private) bills in Japan
Pound sterling	Market yield for three-month U.K. Treasury bills

(d) The Fund will review the rate of interest on holdings of SDRs at the conclusion of each financial year.

Formulas for the Calculation and Rounding of the Currency Components in the SDR Valuation Basket 1/

The calculation of the amounts of each currency in the SDR valuation basket is presented algebraically below.

Let W_i be the weight of currency i, expressed as a proportion;

BEX_i be the base period average exchange rate for currency i, expressed as U.S. dollars per unit of currency i;

TEX_i be the exchange rate for currency i on the transition date, the last business day of the base period, expressed as U.S. dollars per unit of currency i; and

\$/SDR be the value of the SDR in U.S. dollars on the transition date, calculated under the then Rule 0-1.

Step A: The components in the basket are determined as:

$$C_i = (W_i/BEX_i) \cdot \frac{\$/SDR}{\sum_{i=1}^{5} (W_i/BEX_i) \cdot TEX_i}$$

where C_i is the units of currency i.

Step B: In rounding the results under Step A, the rounded currency amounts RCC_i will be determined in a manner that would ensure that the value of the SDR on the transition date on the basis of the new basket will be the same as that actually prevailing on that day. For each of the baskets that meet the test, the root mean square of the deviations of the rounded currency components (RCC_i) from their previously calculated values, i.e.,

$$\sqrt{\frac{\sum_{i=1}^{5} \left(\frac{RCC_i - C_i}{C_i}\right)^2}{5}}$$

is calculated.

1/ See "SDR Valuation Basket - Calculation of the Currency Amounts," SM/80/206, Supplement 3 (12/15/80) and Supplement 5 (12/22/80).

Step C: The currency amounts of the new basket will be expressed to two significant digits, provided that the percentage deviation over the agreed weight for each currency in the value of the SDR resulting from the application of the average exchange rates for the relevant three-month period ending on the transition date is the minimum on average and does not exceed one-half percentage point for any currency.

Step D: If no solution is found under Step C, the significant digits to which currency amounts will be expressed may exceed two for one or more currencies but not exceed four for any currency provided that the shares of component currencies over the three-month averaging period, when appropriately rounded, are the same as the agreed percentage weights. The basket that meets the test of equality with the transition value of the SDR in U.S. dollars, expressed to six significant figures, and with the smallest root mean squared deviation is selected.

Effective Yield of the SDR

The effective yield of a financial asset is the rate of interest on an asset adjusted for any change in its capital value. In the case of the SDR, the concept of effective yield embraces the change in the value of the SDR in terms of the currency in which the effective yield is calculated. The effective yield of the SDR, when measured in terms of different currencies, provides an indication of the performance of the SDR as a store of value relative to the alternative investment in the comparator currencies. Table 10 shows the trend in the effective yield on the SDR itself as well as that in terms of the currencies that comprise the SDR. 1/ The basket method of valuation and of determining its interest rate represents an average of yields that could be obtained if investments were made in the constituent currencies and provides an important element of stability in the effective yield of the SDR which should enhance the attractiveness of the SDR as an asset as its capital value will be less volatile. 2/

Table 10. Effective Yield Based on an Initial SDR Investment on December 31, 1980

(At annual percentage rates at end of period)

	1981	1982	1983	1984	May 1985
In SDR terms	12.7	11.9	10.8	10.3	10.1
In U.S. dollar terms	2.8	4.0	3.7	3.3	4.1
In Deutsche mark terms	18.9	14.9	16.0	16.4	15.5
In French franc terms	30.5	27.1	27.3	24.7	22.9
In Japanese yen terms	9.9	11.2	8.0	8.6	8.9
In pound sterling terms	28.2	26.3	22.3	23.7	19.9

1/ The formula for the effective yield calculations in Table 10 is:

$$V_t = V_o (1 + i)^t$$

where i = effective yield, V_o = value of initial investment, and V_t = value of investment, including interest, at end of year t. V_t is derived on the basis of the average SDR interest rate and end-period exchange rates.

2/ It should be noted that in the private market, the simplification of the SDR valuation basket has enabled market participants to arrange to some extent the composition of their own SDR-denominated deposits at a higher overall yield than investing in an SDR-denominated deposit (see "The Level and Structure of Interest Rates on SDR-Denominated Financial Assets," DM/85/27, 5/3/85).

The effective yield of the SDR in the last four and a half years has varied over a wide range in terms of different currencies, reflecting not only an uneven exchange market performance of the constituent currencies of the SDR but also because interest rate changes were only partially compensated by exchange rate changes. An initial SDR investment made on December 31, 1980 yielded, in SDR terms, 10.1 percent at an annual rate through the end of May 1985, as indicated in the table. The comparable effective annual yield on the SDR, measured in terms of the U.S. dollar, was substantially less, at 4.1 percent as the persistent decline in the value of the SDR in terms of the U.S. dollar largely offset the interest return on the SDR. By contrast, an SDR investment yielded substantially higher rates of returns of 15.5-22.9 percent in terms of the Deutsche mark, the French franc, and the pound sterling, as a result of the sharp appreciation of the SDR against these currencies. In Japanese yen terms, the effective yield of the SDR was 8.9 percent, close to that in SDR terms because the yen was relatively stable in terms of the SDR.