FOR AGENDA

SM/85/98

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April 5, 1985

To: Members of the Executive Board

From: The Secretary

Subject: Review of the Decision on Compensatory Financing of Fluctuations in the Cost of Cereal Imports

Attached for consideration by the Executive Directors is a paper on the review of the decision on compensatory financing of fluctuations in the cost of cereal imports, which is scheduled for discussion on Friday, May 3, 1985. A draft decision appears on page 21.

If Executive Directors have technical or factual questions relating to this paper prior to the Board discussion, they should contact Mr. Kaibni, ext. 7721.

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INTERNATIONAL MONETARY FUND

Review of the Decision on Compensatory Financing of Fluctuations in the Cost of Cereal Imports

Prepared by the Research Department

(In consultation with Legal and other Departments)

Approved by Wm. C. Hood

April 4, 1985

Contents

Contents

Review of the Cereal Decision (Executive Board Decision No. 6860-(81/81)), adopted May 13, 1981, as amended)

I. Introduction

On May 13, 1981, the Executive Board adopted Decision No. 6860-(81/81), on "Compensatory Financing of Fluctuations in the Cost of Cereal Imports," which established a means of providing members in balance of payments need with assistance related to temporary increases in the costs of their cereal imports caused by factors largely beyond their control. Paragraph 1 of this decision provides:

> "1. For an initial period of four years from May 13, 1981, the Fund will be prepared to extend financial assistance in accordance with the terms of this Decision ..."

The cereal decision was reviewed by the Executive Board at its meeting on July 18, 1983 (SM/83/131 and Cor. 1), following the first two years of operation under the decision, as provided for in paragraph 17 of the decision. The Executive Board decided to keep the cereal decision without modification and agreed to review it before it expires at the end of the fourth year. 1/ In addition, following the entry into effect of quotas under the Eighth General Review of Quotas in January 1984, new limits on purchases under paragraph 9 of the cereal decision were set by the Executive Board. 2/

The purpose of this paper is to review the operations to date under the cereal decision and to assist the Executive Board in its consideration of whether the decision should be renewed. The review is presented in five sections and three annexes: the following section summarizes the main features of the cereal decision; the third section reviews operations under the decision; the fourth section discusses financial implications relating to extending the period of coverage of the cereal decision; and the fifth section contains a summary appraisal and the staff's recommendations. The three annexes provide a review of recent developments and outlook for the cereal market (Annex I), a summary of requests for purchases under the cereal decision (Annex II), and an assessment of the excesses in cereal import costs experienced by Fund members in recent years (Annex III). In addition, in response to requests made by Executive Directors during consideration of CF requests by individual countries, ex post calculations with respect to purchases under the CFF are presented in Annex IV.

1/ Decision No. 7490-(83/105), adopted July 18, 1983 (paragraph 2).

2/ Decision No. 7602-(84/3), adopted January 6, 1984.

II. Main Features of the Cereal Decision

Under the cereal decision, the existing CFF was adapted to include provisions for financing excesses in the costs of cereal imports (paragraphs 1 and 4 of Decision No. 6860-(81/81)) in addition to shortfalls in export earnings, subject to specific quota limits. An excess in cereal import costs is calculated as the c.i.f. cost of such imports (excluding concessional cereal imports) in a given 12-month period less the (arithmetic) average cost of these imports for the five years centered on the same 12 months. 1/ Since the financing of excesses in cereal import costs is integrated with the financing of export shortfalls, Fund assistance is provided for the net amount of the cereal import excess and the export shortfall. Thus, an excess in cereal imports may be partly or entirely offset by an excess in exports, and a shortfall in exports by a shortfall in cereal imports; consequently, a purchase under the cereal decision could relate entirely to a cereal excess, entirely to an export shortfall, or to both.

The limit on the amount of outstanding CF purchases relating to cereal import excesses is 83 percent of a member's quota, the same as the limit for export shortfalls, subject to a joint limit of 105 percent of quota on both components. The calculation of an excess in cereal imports may be based on a year for which cereal imports for up to 12 months are estimated (paragraph 5). To the extent that subsequent calculations based on actual data for the excess year indicate that the member was overcompensated in its purchase, the member is subject to an expectation of a prompt repurchase of the amount of overcompensation (paragraph 12). A parallel provision relating to export shortfalls allows estimation of merchandise exports up to six months and services up to 12 months, subject to a similar repurchase expectation in the event of overcompensation.

A member may continue to request assistance for an export shortfall alone under the CFF, 2/ or, at any time, it may base its request for a combined cereal import excess and an export shortfall under the cereal decision (paragraph 2). Having opted for the cereal decision, however, the member's subsequent CFF requests for three years must be made under provisions of that decision.

The conditions governing the use of Fund resources under the cereal decision are the same as those that govern the use of the CF for export shortfalls (paragraph 3). These are that the member must have a balance of payments need, that the cereal import excess and the export shortfall must be judged to be temporary and attributable to circumstances largely beyond the control of the member, such as a decline in domestic food production

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1/ The cereals included in the scheme are wheat, rice, and coarse grains such as maize, barley, sorghum and millet, and the flour from these grains.

2/ Under Decision No. 6224-(79/135), adopted August 2, 1979, as amended.

caused by a crop failure or a rise in cereal import prices in the case of a cereal import excess, and that the request must meet the test of cooperation. 1/

III. Experience with the Cereal Decision

1. Scale of operations

a. Purchases

Over the four-year period since the cereal facility was established in May 1981, a total of 11 purchases by 7 members were made under the cereal decision (Decision No. 6860-(81/81), adopted May 13, 1981, as amended). 2/ Total purchases under the decision amounted to SDR 962 million, of which SDR 394 million was in relation to excesses in cereal imports (Table 1). The part of the purchases relating to export shortfalls amounted to SDR 569 million, nearly two thirds of the total purchases made. Over the same period, some 73 purchases amounting to SDR 6.8 billion were made under the decision on compensatory financing of export fluctuations (Decision No. 6224-(79/135), adopted August 2, 1979, as amended). The SDR 394 million purchased with respect to cereal import excesses represented only about 5 percent of the total purchases made under the two compensatory financing decisions during the four-year period under review. Thus, the basis for assistance under the two compensatory decisions has remained predominantly in relation to export shortfalls. However, it may be noted that the magnitude of shortfalls in export earnings in this period was relatively large as a result of the 1981-82 recession.

As regards frequency of members' purchases under the cereal decision, one member (Malawi) made three purchases, two others (Korea and Bangladesh) made two purchases each, and four members (Morocco, Kenya, Ghana, and Jordan) made one purchase each (Table 2). Three of the 11 purchases were made in the first year of operation and the same number in the second year; there were no purchases in the third year, but five in the fourth year.

1/ The decision stipulates that the Fund must be satisfied that the member will cooperate with the Fund in efforts to find, where required, appropriate solutions for its balance of payments difficulties, and in addition, for purchases in the upper CF tranche (i.e., purchases that raise the outstanding purchases above 50 percent of quota) that the member has been cooperating with it in efforts to find appropriate solutions for the member's balance of payments difficulties. The cooperation requirement is applied in accordance with guidelines adopted by the Executive Board on September 14, 1983 (Decision No. 7528-(83/140)).

2/ These "purchases" include a request by a member (Bangladesh) which is scheduled to be discussed by the Executive Board on April 10, 1985 (EBS/85/62, 3/15/85). Although the outcome of the request will not be known until the Board discussion, the proposed purchase has been included with purchases already made to provide a more complete picture of the possible use of the cereal decision during the four years of its operation.

Table 1. Purchases Under the Two CF Decisions, 1981/82-1984/85

Years Ending April	Number of Purchases			Amount of Purchases						
				Total Under Two Decisions			Under Decision No. 6860			Under
	Total	Decision No. 6860	Decision No. 6224	Purchases	Cereal component	Export component	Purchases	Cereal component	Export component	Decision No. 6224 1/
	(Number of cases)			(In millions of SDRs)						
Total	84	11	73	7,803	394	7,409	962	(394)	(569)	6,840
1981/82	24	3	21	1,635	242	1,393	355	(242)	(113)	1,280
1982/83	32	3	29	3,740	65	3,675	144	(65)	(79)	3,596
1983/84	14	--	14	1,180	--	1,180	--	(--)	(--)	1,180
1984/85	14	5	9	1,248	87	1,161	464	(87)	(377)	784
				(In percent of total) 2/						
Total	100	13	87	100	5	95	12	(41)	(59)	88
1981/82	100	12	88	100	15	85	22	(68)	(32)	78
1982/83	100	9	91	100	2	98	4	(45)	(55)	96
1983/84	100	--	100	100	--	100	--	(--)	(--)	100
1984/85	100	36	64	100	7	93	37	(19)	(81)	63

1/ Relates only to compensation of export shortfalls.
2/ The figures in parentheses are in percent of purchases under Decision No. 6860.

Table 2. Purchases Under the Cereal Decision: Executive Board Decision No. 6860-(81/81)

Country	Date of Purchase	Amount of Purchase by Component			Purchase in Relation to Quota					
					Purchase			Outstanding After Purchase		
		Purchase	Export component	Cereal component	Total CFF	Export component	Cereal component	Total CFF	Export component	Cereal component
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		--(In millions of SDRs)--			--------(In percent of quota) 1/--------					
Total 2/		962.5	568.7	393.8	(49)	(28)	(22)	(92)	(67)	(25)
First year (1981/82)		354.6	113.0	241.6	(63)	(17)	(46)	(112)	(66)	(46)
1. Malawi 3/	9/81	12.0	--	12.0	42	--	42	109	67	42
2. Korea	1/82	106.2	--	106.2	42	--	42	104	62	42
3. Morocco 3/	4/82	236.4	113.0	123.4	105	50	55	124	69	55
Second year (1982/83)		143.8	78.6	65.2	(44)	(29)	(15)	(92)	(75)	(17)
1. Kenya 3/	6/82	60.4	28.8	31.6	58	28	30	125	94	31
2. Bangladesh 3/	8/82	71.2	37.6	33.6	31	16	15	47	33	15
3. Malawi	3/83	12.2	12.2	--	43	43	--	103	98	5
Third year (1983/84)		--	--	--	--	--	--	--	--	--
Fourth year (1984/85)		464.1	377.1	87.0	(44)	(34)	(11)	(81)	(63)	(18)
1. Korea	6/84	279.7	279.7	--	60	60	--	105	82	23
2. Malawi	8/84	13.8	13.8	--	37	37	--	84	80	4
3. Ghana	12/84	58.2	49.2	9.0	28	24	4	87	83	4
4. Jordan	1/85	57.4	34.4	23.0	78	47	31	78	47	31
5. Bangladesh 4/	4/85	55.0	--	55.0	19	--	19	50	23	27

1/ The figures in parentheses are averages.

2/ Total purchases under the Decision, after reversal of overcompensation associated with the early drawings by Malawi and Bangladesh, amounted to SDR 932.7 million, consisting of SDR 560.6 million in relation to export shortfalls, and SDR 372.1 million in relation to the cereal excesses.

3/ Early drawing. Final calculations based on actual data for the shortfall year indicated that two purchases were overcompensated--Malawi by SDR 10.5 million and Bangladesh by SDR 19.3 million. Malawi reversed the overcompensation in two installments, SDR 3.8 million in March 1982 and SDR 6.7 million in April 1982. Bangladesh reversed the overcompensation of SDR 19.3 million (SDR 8.1 million in relation to the export component and SDR 11.2 million in relation to the cereal component in March 1983.

4/ As proposed in EBS/85/62 (3/15/85); Board consideration of request scheduled for April 10, 1985.

Only 8 of the 11 purchases were based in part (five purchases) or entirely (three purchases) on excesses in cereal imports. The number of purchases relating to export shortfalls was also eight, of which three were based entirely on export shortfalls. The three purchases based entirely on export shortfalls were made by members that had made earlier purchases under the cereal decision, and consequently they were subject to the requirement that their CF requests for three years from the first purchase be based on the cereal decision.

With reference to the cereal component (SDR 394 million) of the purchases made under the cereal decision, more than 60 percent were purchased in the first year (SDR 242 million, compared with SDR 65 million in the second year and SDR 87 million in the fourth year). The cereal component as a proportion of total CF purchases under the decision also diminished in subsequent years. Consequently, the export component of the purchases increased sharply after the first two purchases, and by the fourth year it accounted for 80 percent of the purchases made in that year under the cereal decision.

The scale of CF purchases to compensate excesses in the cost of cereal imports has been considerably below that projected in 1981 when the cereal decision was taken. At that time, based on simulations covering 1965-74, the additional financial requirements for 1981-85 resulting from the cereal decision were projected at SDR 180 million per year for normal years and at a maximum of SDR 620 million for a "crisis year" equivalent to the one experienced in the mid-1970s. By comparison, the additional financial requirements resulting from the cereal decision have averaged less than SDR 100 million per year.

Since the decision was taken in 1981, the global food situation has improved: global food production trends have generally been favorable and international prices of cereals have tended to decrease (Annex I). Despite this global trend, some countries, particularly in Africa, have experienced acute food problems. However, many of these countries have been able to meet a considerable part of their cereal deficits with cereal imports under food aid.

An analysis of the cereal imports during the past four years suggests that a fairly large number of Fund members considered as potential users of the cereal facility have experienced excesses in cereal import costs. For 117 countries, the aggregate amount of excesses in the commercial cereal import costs, net of any excesses in export earnings, is estimated to have averaged approximately SDR 620 million per year over the period 1981-83 (Annex III). 1/ Twenty-two countries in 1981, 19 countries in

1/ These results refer to the calculation of cereal excesses and export excesses made on the basis of the prices which were used during the year of the possible purchase for the purpose of projecting cereal import costs and export earnings in the two post excess (shortfall) years (Annex III, Table 20).

1982, and 13 countries in 1983 had net excesses of more than SDR 0.5 million and of more than 5 percent of their IMF quota. 1/

A number of reasons may be advanced as to why some Fund members with excesses in the costs of commercial cereal imports not offset by excesses in export earnings have not made use of the cereal decision. A few countries that might have otherwise met the conditions for use of the decision did not have a balance of payments need. This may particularly have been the case with reference to 1981, when a large number of excesses were triggered by increases in prices; some of the countries so affected were traditional cereal importers whose balance of payments positions were relatively strong. Some countries increased commercial cereal imports for reasons other than circumstances beyond their control, such as in order to raise per capita food consumption or to build stocks. A few countries experiencing excesses in cereal import costs may not have met the requirement for use of the CFF concerning cooperation with the Fund. In addition, some of the countries may have preferred not to request a purchase to compensate for excesses in cereal import costs because of the requirement that they make all subsequent CF purchases under the cereal decision for a period of three years.

An additional explanation of the low level of use of the cereal option has been the difficulties in compiling the necessary data. In contrast to the use of the CFF to compensate export shortfalls where data on export earnings are routinely made available to Fund missions, data on cereal imports, especially those disaggregated by commercial and concessional imports, are not readily available for many countries. The lack of timely data would seem to explain why a number of countries making CF purchases with respect to export shortfalls in 1981 and 1982 failed to use the cereal decision, although in retrospect it is evident that at the time they also incurred excesses in cereal import costs. Lack of familiarity with the provisions of the new decision in its early years of operation also may have inhibited some Fund members from making use of it.

It might have been expected that the African countries which in recent years have experienced abnormal food shortages (Annex I) would have made greater use of the cereal decision. An important factor explaining the limited use of the decision by these countries, in addition to the reasons

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1/ As discussed in Annex III, the aggregate value of the cereal excesses not offset by excesses in export earnings was high in 1981 and 1983 relative to 1982. In 1981 the list included two countries with large cereal imports that accounted for more than 50 percent of the total of the excesses for that year. In 1983, three countries experienced large excesses in the cost of cereal imports that accounted for more than 75 percent of the total. If these large importers are excluded, the aggregate excesses in cereal import costs, not offset by excesses in export earnings, in the period 1981-83 would average only SDR 240 million, somewhat more than double the level of purchases under the CFF to compensate excesses in cereal import costs.

outlined above, lies in the nature of the problems faced. The persistence of adverse production conditions in a number of these countries resulting in serious food shortages meant that the food problems were not temporary and hence could not be addressed by the cereal decision. In addition, the weak balance of payments position and low growth rates in a number of the countries affected led to an attempt to meet import requirements as far as possible through food aid rather than through increases in commercial imports, which are the basis upon which cereal excesses are calculated.

b. Purchases in relation to quota limits

All but one of the members that purchased under the cereal decision had outstanding CF purchases in relation to export shortfalls under Decision No. 6224-(79/135) at the time they made their purchases under the cereal decision (Decision No. 6860-(81/81)). These outstanding amounts, together with purchases relating to export shortfalls under the cereal decision, had the effect of raising the outstanding purchases in relation to export shortfalls to levels significantly higher than those in relation to cereal excesses. For the 11 purchases, the outstanding amounts relating to export shortfalls averaged 67 percent of quota, compared with 25 percent as the average of outstanding purchases relating to cereal excesses (Table 2). By reference to the quota limit in effect at the time of purchase, 1/ five purchases had the effect of raising the outstanding purchases in relation to export shortfalls up to or close to the limit. By contrast, the outstanding purchases for cereal excesses exceeded half the quota limit for purchases relating to these excesses in only one instance.

The outstanding purchases in relation to the two components reached the joint limit on two occasions (Kenya, 125 percent of quota in 1982; Korea, 105 percent of quota in 1984), and were close to it on one other occasion (Morocco, 124 percent of quota in 1982). In addition to these three cases, outstanding purchases exceeded the limit on export shortfalls in five other instances, and hence for these eight purchases the cereal decision had the effect of providing assistance in excess of amounts available to the members concerned in relation only to export shortfalls under Decision No. 6224-(79/135). In summary, it may be said that based on the experience to date, the quota limit on the cereal component has not constrained the purchases made in relation to cereal excesses; however, because of the greater incidence of export shortfalls and their larger amounts, both the limit on purchases relating to export shortfalls and the joint limit on purchases relating to the two components have constrained some of the purchases made.

1/ Through December 1983, the quota limits were 100/100/125, representing 100 percent of quota on outstanding CF purchases relating to export shortfalls, 100 percent in relation to cereal import excesses, and 125 percent of quota in relation to the two components; following the increase in quotas under the Eighth General Review of Quotas, the limits were reduced to 83/83/105.

2. Factors responsible for the excesses in cereal imports and shortfalls in exports

Of the 11 purchases under the cereal decision, 5 purchases were in respect of both shortfalls in exports and excesses in cereal imports; 3 purchases were in respect of export shortfalls partly offset by shortfalls in cereal imports; and the remaining 3 were in respect of cereal import excess partly offset by excess in exports. On average, the purchases compensated 58 percent of the aggregate shortfalls in exports and 41 percent of the aggregate excesses in cereal imports; they compensated 71 percent of the aggregate net shortfalls (Table 3). The net shortfalls were fully compensated in 7 of the 11 purchases made under the decision.

A judgment regarding the "beyond the control" requirement under the cereal decision when there is a shortfall in exports as well as an excess in cereal imports must encompass the circumstances that led to both. As noted above, export shortfalls contributed to eight purchases and cereal excesses also contributed to eight purchases; both components contributed to five purchases. The eight cereal import excesses that were compensated under the cereal decision were all predominantly related to increases in the volume of cereal imports; cereal prices from 1981 to 1985 have generally been on a declining trend. In all cases, volume excesses were caused by the effects of adverse weather on domestic cereal production and, therefore, were judged to be beyond the control of the members concerned. Drought was the main cause of the production shortfalls in six of the eight cases; other natural factors were responsible in the other two. In all eight cases, the magnitudes of crop losses due to adverse weather were sufficiently large to justify the increases in commercial cereal imports, taking into account availabilities from food aid and national stocks.

The eight export shortfalls that were compensated under the cereal decision were generally due to weak external demand and low prices during the recession, but in some cases export crops were also adversely affected by weather. For example, the same droughts that reduced cereal production affected fruit and vegetable exports in Morocco, tea exports in Kenya, and cocoa and electricity exports in Ghana. In one case (the third purchase by Malawi), the calculated shortfall was reduced because of a temporary accumulation of tobacco stocks during the shortfall year.

In summary, the "beyond the control" requirement under the cereal decision did not present particular difficulties of implementation.

3. Consequences of integration

The extent to which merchandise exports had the effect of augmenting or offsetting excesses in cereal imports varied among the cases. The first two purchases (Malawi and Korea) occurred when the countries concerned were experiencing simultaneously excesses in their cereal imports and in their merchandise exports, with the latter partly offsetting the

Table 3. Net Shortfalls Related to Purchases Under the Cereal Decision, 1981/82-1984/85

Country	Date of Purchase	Shortfall Year Ending	Shortfall and Excess: Net shortfall 2/ (1)	Shortfall and Excess: Export shortfall (2)	Shortfall and Excess: Cereal import excess (3)	Purchase: Total (4)	Purchase: Export component (5)	Purchase: Cereal component (6)	Rate of Compensation 1/: Net shortfall 2/ (7)	Rate of Compensation 1/: Export shortfall (8)	Rate of Compensation 1/: Cereal import excess (9)
			(In millions of SDRs)						(In percent) 3/		
Total			1,351.9	980.2	949.3	962.5	568.7	393.8	(71)	(58)	(41)
First year (1981/82)			354.6	113.0	712.4	354.6	113.0	241.6	(100)	(100)	(34)
1. Malawi 4/	9/81	6/81	12.0	-6.7	18.7	12.0	--	12.0	100	--	64
2. Korea	1/82	9/81	106.2	-464.0	570.2	106.2	--	106.2	100	--	19
3. Morocco 4/	4/82	3/82	236.4	113.0	123.4	236.4	113.0	123.4	100	100	100
Second year (1982/83)			149.2	88.1	65.2	143.8	78.6	65.2	(96)	(89)	(100)
1. Kenya 4/	6/82	12/81	65.8	34.2	31.6	60.4	28.8	31.6	92	84	100
2. Bangladesh 4/	8/82	9/82	71.2	37.6	33.6	71.2	37.6	33.6	100	100	100
3. Malawi	3/83	9/82	12.2	16.3	-4.1	12.2	12.2	--	100	75	--
Third year (1983/84)			--	--	--	--	--	--	--	--	--
Fourth year (1984/85)			848.1	779.1	171.7	464.1	377.1	87.0	(55)	(48)	(51)
1. Korea	6/84	12/83	557.1	626.1	-69.0	279.7	279.7	--	50	45	--
2. Malawi	8/84	12/83	13.8	16.0	-2.2	13.8	13.8	--	100	86	--
3. Ghana	12/84	5/84	111.6	102.6	9.0	58.2	49.2	9.0	52	48	100
4. Jordan	1/85	6/84	57.4	34.4	23.0	57.4	34.4	23.0	100	100	100
5. Bangladesh 5/	4/85	12/84	108.2	-31.5	139.7	55.0	--	55.0	51	--	39

1/ The amount of purchases (column (4)) on its component (column (5) or (6)) as a percent of net amount (column (1)) or its component (column (2) or (3)).

2/ Refers to the sum of the export shortfall and the cereal import excess, as defined in paragraph 4 of Decision No. 6860-(81/81).

3/ Figures in parentheses are averages.

4/ Early drawings, with amounts as estimated at the time of purchase.

5/ As proposed in EBS/85/62 (3/15/85); Board consideration of request scheduled for April 10, 1985.

former (Table 3). In five subsequent cases (Morocco, Kenya, Bangladesh, Ghana, and Jordan), the countries were experiencing both an excess in the cost of cereal imports and a shortfall in export earnings, thereby both components contributing to the purchases. However, the second and third purchases by one member (Malawi) and the second purchase by another member (Korea) were made when these countries were experiencing export shortfalls that were partly offset by shortfalls in their cereal imports. The latter development underscores the possible risk that members assume when they opt to use the cereal decision, which requires that for a period of three years following an initial purchase under the cereal decision all CF purchases by the member concerned must be made under that decision. 1/ More generally, the incidence of export shortfalls and cereal import excesses on purchases, which are a consequence of integrating assistance for cereal excesses with that for export shortfalls, raises questions regarding the impact upon purchases resulting from the adoption of an integrated scheme rather than a separate one.

An evaluation has been made of the effects on purchases that would have occurred had a cereal facility been separate from, rather than integrated with, the CFF for export shortfalls. In Table 4, purchases are simulated for the 11 cereal cases so that members which experienced export shortfalls would have purchased under Decision No. 6224-(79/135) and those that experienced excesses in their cereal imports would have made a separate purchase under a cereal facility, with the following provisions: (a) the purchase would be in relation only to the cereal excess and (b) the quota limit is assumed to be half of that in relation to export shortfalls (i.e., 50 percent of quota through end-1983 and 41.5 percent thereafter). 2/ The results of the simulation may be summarized as follows:

(1) Eight CF purchases for export shortfalls would have been made for a total amount of SDR 580 million (column (5)). This figure

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1/ Whether the member assumes a risk by opting for a purchase under the cereal decision depends, inter alia, on the amount of the purchase in relation to the quota limits, the profile of its outstanding purchases during the three years following the purchase and whether it is likely to meet the conditions for further purchases during those three years. A member with no outstanding CF purchases would be unlikely to assume a risk if it qualified for a maximum purchase of 105 percent of quota; this is because, unless its purchase possibilities are restored through early repurchases, it would not qualify for further purchases during the three years when the purchase remains outstanding. On the other hand, a member that makes a purchase under the cereal decision of less than 83 percent of quota may not be able to make any further purchases (up to 83 percent of quota) for which it could otherwise qualify in relation to export shortfalls had it not opted for a purchase under the cereal decision.

2/ At the time of Board consideration of alternative schemes to compensate cereal import excesses, one of the variants involved an assumption of a limit for a separate cereal facility of 50 percent of quota, equivalent to one-half the limit on CF purchases which was in effect at that time.

Table 4. Simulation of Purchases Under a Separate Scheme, 1981/82-1984/85

(In millions of SDRs)

Country	Actual Purchase			Simulated Purchase Under a Separate Scheme 1/		
	Total (1)	Export component (2)	Cereal component (3)	Total (4)	Export component (5)	Cereal component (6)
Total	962.5	568.7	393.8	1,051.6	580.5	471.1
First year (1981/82)	354.6	113.0	241.6	367.6	113.0	254.6
1. Malawi 2/	12.0	--	12.0	14.2	--	14.2
2. Korea	106.2	--	106.2	127.9	--	127.9
3. Morocco 2/	236.4	113.0	123.4	225.5	113.0	112.5
Second year (1982/83)	143.8	78.6	65.2	149.9	84.7	65.2
1. Kenya 2/	60.4	28.8	31.6	65.8	34.2	31.6
2. Bangladesh 2/	71.2	37.6	33.6	71.2	37.6	33.6
3. Malawi	12.2	12.2	--	12.9	12.9	--
Third year (1983/84)	--	--	--	--	--	--
Fourth year (1984/85)	464.1	377.1	87.0	534.1	382.8	151.3
1. Korea	279.7	279.7	--	284.1	284.1	--
2. Malawi	13.8	13.8	--	15.1	15.1	--
3. Ghana	58.2	49.2	9.0	58.2	49.2	9.0
4. Jordan	57.4	34.4	23.0	57.4	34.4	23.0
5. Bangladesh 3/	55.0	--	55.0	119.3	--	119.3

1/ Purchases relating to export shortfalls are in accordance with the provisions of Decision No. 6224-(79/135), as amended. Purchases relating to cereal excesses assume full compensation of excesses subject to quota limits equivalent to one half the limits for purchases relating to export shortfalls (i.e., a limit of 50 percent through end-1983 and 41.5 percent thereafter).

2/ Early drawings, with amounts as estimated at the time of purchase; see Table 5 for final calculations based on actual rather than estimate data for the shortfall year.

3/ As proposed in EBS/85/62 (3/15/85); Board consideration of request scheduled for April 10, 1985.

is roughly SDR 10 million larger than the sum of the export components of the purchases made under the cereal decision; it also represents the amounts that members could have purchased had they not opted for use of the cereal decision (or had the cereal facility not existed).

(2) Purchases relating to cereal excesses under a separate facility would have amounted to SDR 471 million (column (6)), or SDR 77 million more than the sum of the cereal components of the purchases made under the cereal decision (column (3)). This calculation, of course, ignores possible additional purchases that may have been made by other members under a separate facility.

(3) Under a separate cereal facility, the sum of the purchases relating to export shortfalls (SDR 580 million) and to cereal excesses (SDR 471 million), at SDR 1,052 million, compares with total purchases of SDR 962 million made in relation to the two components under the cereal decision. The additional costs associated with the operation of a separate cereal facility for those 11 purchases made under the cereal decision would have amounted to some SDR 90 million. The additional cost of SDR 90 million is rather modest, but as noted above, it does not take into account any further requests that may have been generated by a separate scheme.

Table 4 also sheds some light on the experience of members that have made multiple purchases under the cereal decision, namely, Malawi (three purchases) and Korea and Bangladesh (two purchases each). Their initial purchases were based entirely (Malawi and Korea) or partly (Bangladesh) on excesses in their cereal imports (columns (1)-(3)). Subsequent purchases by Malawi and Korea were based entirely on export shortfalls which were partly offset by shortfalls in cereal imports; the second purchase by Bangladesh was based entirely on an excess in cereal imports. Thus, the question as to whether countries obtained larger purchases by opting to include cereals in the CF calculations is confined to Malawi and Korea. Although the later purchases by Malawi and Korea were somewhat less than they would have been if cereals had not been included, their total purchases under the cereal decision (SDR 38.0 million by Malawi and SDR 385.9 million by Korea) were significantly larger than the amounts they could have purchased without the cereal decision (SDR 28.0 million by Malawi and SDR 284.1 million by Korea). In the case of Malawi, however, after deducting the amount of overcompensation (SDR 10.5 million) which was reversed soon after the first purchase, its total purchases under the decision were reduced to SDR 27.5 million, almost the same amount that it could have purchased had it not opted initially for the cereal decision. This analysis suggests that benefits in terms of larger purchases under the cereal decision are not always assured, a factor that may have discouraged some members from opting for it.

4. Cooperation with the Fund

As regards the requirement of cooperation, 9 of the 11 purchases were in the upper CF tranche, thus requiring a stricter test of cooperation (i.e., the Fund had to be satisfied that the member "has been cooperating"

with the Fund in efforts to find appropriate solutions for its balance of payments difficulties). The two purchases in the lower CF tranche, both by Bangladesh, required satisfaction that the member "will cooperate" with the Fund. 1/ In both cases, cooperation was justified on the basis of action taken by the member, which, in the language of the guidelines on cooperation, "gives ... a reasonable assurance that policies corrective of the member's balance of payments problem will be adopted." In all the upper tranche CF purchases except one (Jordan in 1985), the cooperation requirement was met by either the existence of a Fund arrangement at the time of the purchase, or by the approval of an arrangement concurrently with approval of the request for the CF purchase. In the case of Jordan, the test of cooperation was met on the basis of a judgment that, except for the temporary effects of the shortfall, the country's balance of payments situation was satisfactory. 2/

5. Use of the early drawing provision

Four of the 11 purchases made under the cereal decision were based on the early drawing procedure, which allows the use of estimated data for merchandise exports for up to six months of the shortfall (excess) year and up to 12 months of the same year for services and for cereal imports. All four early drawings were made in the 12-month period from September 1981 to August 1982, thus coinciding with the early period of operations under the decision (Table 5). Only two of the purchases involved estimated cereal data (three months for the purchase by Morocco and four months for the purchase by Bangladesh), whereas all four purchases involved estimated export data. Final calculations in respect of the four early drawings indicated that overcompensation occurred in two cases--Malawi, SDR 10.5 million, and Bangladesh, SDR 19.3 million. Overcompensation resulted from underestimation of exports in the case of Malawi and from both an underestimation of exports and an overestimation of cereal imports in the case of Bangladesh. The final (net) shortfalls in respect of the other two purchases turned out to be larger in one case (Morocco) and smaller in the other (Kenya) than originally estimated; Morocco was undercompensated by SDR 2.9 million, whereas Kenya's compensation was not affected. 3/

1/ The first purchase was constrained by the amount of the net shortfall. The second (proposed) purchase was smaller than the related net shortfall because of a judgment that Bangladesh met the requirement of cooperation for a purchase in the lower CF tranche.

2/ The request for a purchase by Jordan, which was the first upper CF tranche purchase in more than three years that was not accompanied by a Fund arrangement, was considered to conform to the guidelines on cooperation which state that: "The existence of a satisfactory balance of payments position (apart from the effects of the shortfall) ... will be considered to provide evidence of cooperation."

3/ The final (net) shortfall for Kenya, though smaller than the shortfall estimated at the time of the purchase, exceeded the joint limit on outstanding purchases.

Table 5. Early Drawings Under the Cereal Decision

(In millions of SDRs)

	Original Calculations			Final Calculations			
	Date of Purchase	Early Drawing	Related Net Shortfall	Net Shortfall	Over (+) or Under (-) Compensation	Date Reported to Board	Date of Repurchase
Malawi	9/81	12.0	12.0	1.5	10.5	1/25/82	4/2/82 1/
Morocco	4/82	236.4	236.4	258.5	-2.9 2/	1/3/83	--
Kenya	6/82	60.4	65.8	61.5	--	11/30/83	--
Bangladesh	8/82	71.2	71.2	51.9	19.3	2/10/83	3/14/83

1/ SDR 3.8 million was repurchased on 3/12/82 and SDR 6.7 million was repurchased on 4/2/82.

2/ Constrained by the quota limit.

Members that were overcompensated reversed the overcompensation within a fairly short period of time after they were notified of the expectation to repurchase pursuant to paragraph 12 of the cereal decision. It may be noted that the operation of the early drawing procedure in relation to the cereal decision has not given rise to the kinds of problems that occasionally arose in connection with early drawings relating to export shortfalls under Decision No. 6224. These problems, which involved delays in the provision of the actual data required to complete the calculations as well as delays in reversing the overcompensation, were the subject of a detailed examination by the Executive Board in July 1983. 1/

6. Ex post calculations with respect to purchases under the cereal decision

In this subsection ex post cereal import excesses and export shortfalls relating to purchases under the cereal decision are calculated on the basis of actual data now available for the post-shortfall years. A wider, though not as complete, analysis of ex post calculations of shortfalls related to CF purchases made since 1975 is contained in Annex IV.

1/ The Executive Board carried out the examination on the basis of Section II of SM/83/131, dated June 16, 1983.

Actual data on merchandise exports and commercial cereal imports are now available for 4 of the 11 purchases made under the cereal decision. The four purchases were made by Malawi, Korea, Morocco, and Bangladesh. Actual data on merchandise exports and cereal imports for the post-shortfall years relating to these four purchases were provided by the members concerned in connection with their subsequent requests for purchases under the cereal decision.

Calculations on the basis of actual data for the two post-shortfall (excess) years indicate that there were no compensable amounts in respect of the purchases by Malawi (SDR 1.5 million) and Korea (SDR 106.2 million), while in the case of Morocco, the compensable amount based on actual data data was SDR 123.8 million compared with its purchase of SDR 236.4 million (Table 6). For Bangladesh, the compensable amount based on actual data was SDR 12.2 million compared with a purchase of SDR 51.9 million.

Table 6. Purchases Under the Cereal Decision: Ex Post Calculations

Country	Shortfall Year Ending	Purchase by Component 1/			Ex Post Compensable Amount		
		Purchase	Export component	Cereal component	Net Shortfall	Export Shortfall	Cereal Import Excess
1. Malawi 2/	6/81	1.5	--	1.5	--	-19.9	6.5
2. Korea	9/81	106.2	--	106.2	--	-1,248.1	584.4 3/
3. Morocco 2/	3/82	236.4	113.0	123.4	123.8	-45.8	169.6
4. Bangladesh 2/	9/82	51.9	29.5	22.4	12.2	45.0	-32.8

1/ In the case of purchases under the early drawing procedures the amounts shown are the net amounts after repurchases, if any.
2/ Purchase was made under the early drawing procedure.
3/ The value of cereal imports for the years ended June 1982 and 1983 was estimated from calendar year data.

The first purchase made by Malawi (September 1981 with respect to the 12 months ended June 1981) amounted to SDR 1.5 million (after reversal of overcompensation), consisting of a cereal import excess of SDR 18.7 million which was largely offset by an export excess of SDR 17.2 million. Calculations, on the basis of revised actual data for the five-year trend period, indicate that the entire SDR 1.5 million was overestimated because of a sharply lower cereal import excess (SDR 6.5 million) which was completely offset by an export excess (SDR 19.9 million). The reduction in the cereal import excess was largely due to the fact that as a result of data revisions, cereal imports in the shortfall year were reduced to SDR 13.9 million, compared with SDR 27.9 million in the data provided at the time of the purchase.

Korea made a purchase of SDR 106.2 million on account of a cereal import excess of SDR 570.2 million which was partly offset by an export excess of SDR 464.0 million. Actual data for the two post-shortfall years indicate that the actual cereal import excess at SDR 584.4 million was slightly larger than that estimated at the time of the purchase. However, as the world recession was much more protracted than originally expected, the actual rate of growth of merchandise exports in the two post-shortfall years, at 11.5 percent per annum, was substantially lower than the 22 percent per annum originally projected. Consequently, the excess based on actual merchandise exports amounted to SDR 1.25 billion, almost three times as large as that originally estimated.

Morocco made a purchase of SDR 236.4 million in April 1982 on account of a net shortfall of the same size for the year ended March 1982. The export component of the purchase amounted to SDR 113.0 million, while the cereal component amounted to SDR 123.4 million. A severe drought in the 1980/81 crop year was largely responsible for the export shortfall as well as the cereal import excess. Calculations, based on actual data for the two post-shortfall years indicate that Morocco experienced an export excess of SDR 45.8 million and a cereal import excess of SDR 169.6 million. Consequently, the compensable amount for the year ended March 1982 was SDR 123.8 million. The excess based on actual cereal imports was larger than the estimated excess because cereal production in 1981/82 recovered more rapidly than expected, thereby resulting in lower imports in 1982/83 than had been projected at the time of purchase. Exports, however, did not recover as expected because the volume of agricultural exports, especially citrus fruit, remained depressed due to the continuing effects of the drought while the projected recovery in earnings from phosphates was not realized because of weak demand.

Bangladesh made a purchase of SDR 51.9 million (after reversal of overcompensation) on account of a shortfall in merchandise exports of SDR 29.5 million and a cereal import excess of SDR 22.4 million for the year ended September 1982. Actual data for the two post-shortfall years indicate an export shortfall of SDR 45.0 million and a cereal import shortfall of SDR 32.8 million. 1/ The export shortfall was larger than that estimated originally because of stronger-than-expected export growth resulting from sharply higher jute prices and garment exports. Cereal imports in the year ended September 1984 were much larger than projected because of the adverse effects of extensive flooding on rice supplies.

IV. Extension of the Period of Coverage--Financial Implications

Prior to the adoption of the cereal decision in May 1981, the Executive Board had considered the financial resources that would be required to operate a cereal facility. The Board had noted that, although the cereal

1/ With perfect foresight, Bangladesh would not have opted to draw under the cereal decision, but could have purchased SDR 45 million entirely with respect to the export shortfall.

decision would have to be supported by additional financial resources, the integrated scheme that was adopted would require less resources inasmuch as excesses in cereal imports may be offset by excesses in merchandise exports. It was estimated that "additional" financial resources required for such a scheme would be some SDR 180 million for a year of normal cereal situation and some SDR 620 million for a crisis year equivalent to the one experienced in the mid-1970s.

As noted above, the better-than-expected global cereal situation has been a major reason for the relatively low level of purchases during the first four years of operations under the cereal decision. Both world cereal production and cereal production in developing countries increased more rapidly during 1981-84 than during the preceding four years. Consequently, in contrast to the earlier period there was little increase in world cereal imports and the prices of wheat and rice, the two major cereals, declined continuously in 1981-84. Nevertheless, the cereal situation deteriorated in some countries, particularly in Africa, after 1980. However, in many of the countries adversely affected, the deterioration has taken the form of a prolonged need for larger imports partly met by food aid, rather than a temporary increase in import demand which could qualify them for purchases under the cereal decision.

Cereal prices, which have been on a declining trend since 1980 with the exception of a temporary increase in maize prices in 1983, are expected to rise slightly in 1985-86. The existence of ample supplies leads to an expectation that any price increase that may occur would be rather modest. Beyond 1986, it is conceivable that in reaction to the low prices prevailing in recent years, world production capacity may not grow as fast as world consumption and prices may tend to increase at a faster pace than in 1985-86. Projections of cereal import volume for individual developing countries are subject to a wide margin of error as they are dependent primarily on the vagaries of weather. It is assumed that in the aggregate, the magnitude of country excesses in import volumes during the next four years would not be significantly different from that experienced during the past four years. In addition, the flow of food aid is assumed to maintain its recent pattern.

While the magnitude of the volume excesses may remain largely unchanged, higher cereal prices would tend not only to generate excesses for countries whose import volumes remain stable, but also to increase the value of the excesses for countries that experience volume fluctuations. However, some of the increase in the amount of cereal import excesses may be expected to be partly offset by excesses in export earnings. Overall, the compensable amounts that may form the basis for requests during the next four years may be somewhat larger than those experienced during the past four years, when a large number of countries experienced sizable export shortfalls as a result of the world recession. Accordingly, assuming that the present quotas and quota limits remain in effect, the financial resources required to maintain the cereal scheme in its current form may be expected to be somewhat larger on average than the amounts that were required during the period 1981-85 (somewhat less than SDR 100 million per year), but within the earlier projection of some SDR 180 million referred to above.

V. Summary Appraisal and Staff Recommendations

Decision No. 6860-(81/81) on the Compensatory Financing of Fluctuations in the Cost of Cereal Imports provides for balance of payments assistance to members that experience a temporary rise in the cost of their cereal imports caused by factors largely outside their control. Compensation for excesses in the cost of cereal imports is integrated with compensation for shortfalls in export earnings. The compensable amount is the sum of the cereal import excess and the export shortfall, subject to a separate quota limit of 83 percent on the export and cereal import components of the purchases outstanding and a joint limit of 105 percent on both components. A member may continue to base its requests on Decision No. 6224-(79/135) on Compensatory Financing of Export Fluctuations or it may opt to base its requests on the cereal decision which provides compensation for cereal excesses as well as export shortfalls. Once a member opts to use the cereal decision, any further CF requests by that member during the following three years must be made under the cereal decision.

The cereal decision requires that the circumstances that have led to the need for a purchase must be largely outside the control of the member. The member must have a balance of payments need. The Fund must be satisfied that the member will cooperate with the Fund in efforts to find appropriate solutions for its balance of payments difficulties. In the case of a purchase that has the effect of raising the outstanding purchases under either or both of the two compensatory decisions above 50 percent of quota, the Fund must be satisfied that the member has been cooperating with the Fund toward that end.

In the four years since the cereal decision was adopted, operations under it have been on a rather modest scale. The main reason for this limited use has been a relatively favorable global food supply situation from 1981 to 1985 that has been characterized by record cereal production levels, large stocks, declining cereal prices, increasing food aid, and rather small increases in the volume of cereals imported by developing countries on commercial terms. However, within this favorable global setting, some developing countries, particularly in Africa, have experienced severe food shortages.

The food shortages resulting from sharp declines in production in a number of low-income countries have been met to a considerable extent by imports of cereals under food aid. This has been possible because of the international attention that the acute food problems of these countries have attracted at a time when stocks of cereals have been accumulating in cereal exporting countries. As a result, there has been less recourse to requests for use of Fund resources under the cereal decision to compensate commercial imports of cereals by countries where famine conditions have been reported than might have been anticipated. This is perhaps largely due to the fact that the decision provides a means for assisting countries that rely to a greater extent on commercial imports and those that have suffered cereal production shortfalls of a temporary rather than a prolonged character. Even with regard to these countries, the use of the cereal

decision was less than might have been suggested by the incidence of excesses in cereal import costs over the period of the operation of the decision. Among the possible reasons for the limited use of the cereal decision may have been the offsetting effect of excesses in export earnings, the failure to satisfy the requirements with reference to balance of payments need or cooperation, and the unavailability of data.

Total purchases under the cereal decision amounted to over SDR 962 million, but of this amount purchases specifically related to the financing of excesses in cereal imports totaled SDR 394 million. Over the same period, purchases relating to export shortfalls, including those under the cereal decision (SDR 569 million), amounted to SDR 7.4 billion, underscoring the overwhelming use of the compensatory financing assistance in relation to export shortfalls.

Eight of the eleven purchases made under the cereal decision were related either entirely (three cases) or partly to excesses in cereal imports. A similar number of purchases related either entirely (again three cases) or partly to export shortfalls; in five cases, both export shortfalls and cereal excesses contributed to the purchase. This pattern of use is in conformity with the intent of the cereal decision, which was designed to provide compensation on a net, rather than a gross, basis, i.e., by adding the excesses in cereal imports to shortfalls in exports, rather than compensating each component separately. If a separate cereal facility had been in operation since 1981, approximately SDR 90 million more could have been purchased with respect to the eleven cases from 1981 to 1985; it is also possible that more countries would have qualified to use a separate cereal facility.

The eight cereal import excesses that were compensated under the cereal decision were all caused by the effects of adverse weather on domestic cereal production, while the eight export shortfalls that were compensated were generally attributable to weak external demand during the recession, although in some cases shortfalls were also due to the effects on export crops of the same adverse weather that affected cereal production. In all of these cases, therefore, the cereal import excesses and/or export shortfalls resulted from factors largely beyond the control of the member. The fact that all the cereal import excesses were caused by domestic crop failures demonstrates that the cereal decision has met the needs of those members using it, in the manner envisioned in 1981 when the decision was adopted.

The requirement of cooperation under the cereal decision was met in eight of the eleven cases (all in the upper CF tranche) by the existence or adoption of an arrangement with the Fund. In the only two cases in the lower CF tranche, the cooperation requirement was met by actions taken by the member that were judged to demonstrate a reasonable assurance that the member would cooperate with the Fund in efforts to find appropriate policies to address its balance of payments difficulties. In the remaining upper tranche purchase (Jordan), the cooperation requirement was satisfied on the basis of a judgment that, apart from the balance of payments

difficulties attributable to the temporary conditions that gave rise to the need for a CF purchase, the country's balance of payments position was satisfactory.

Four purchases were made under the early drawing purchase, by which data for the shortfall year were partly estimated. Final calculations of the net shortfalls based on actual data for the shortfall years indicated that two purchases were overcompensated. The members concerned reversed the overcompensation shortly after they were notified of the expectation to repurchase pursuant to paragraph 12 of the cereal decision.

The staff considers that the 1981 cereal decision has served the purpose for which it was intended. It has provided timely balance of payments assistance to a number of members facing problems arising from temporary increases in the cost of their cereal imports. The outlook for the next few years does not suggest major changes in the global supply of cereals or their prices. It is the case, however, that individual countries are now experiencing, and may be expected to experience, temporary shortages of cereals due to factors outside their control, particularly shortages due to crop failures caused by weather conditions. The staff recommends, therefore, that the cereal decision be renewed to cover a further period of four years. The staff also considers that the cereal decision has not given rise to serious difficulties of implementation. For this reason and, in view of the rather limited experience with the cereal decision, the staff recommends that no modifications be made to the provisions of the decision. If these recommendations are acceptable to the Executive Board, the staff would suggest that the new decision be reviewed in the light of experience after two years.

As with Decision No. 6860, the decision to renew the facility would require an 85 percent majority of the total voting power.

Accordingly, the following Decision is proposed for adoption by the Executive Board:

Renewal of Decision on Compensatory Financing of Fluctuations in the Cost of Cereal Imports

Decision No. 6860-(81/81), adopted May 13, 1981, as amended by Decision No. 7602-(84/3), adopted January 6, 1984, shall be further amended as follows:

1. In paragraph 1, the words "For an initial period of four years ..." shall be replaced by the words "For a period of eight years ..."

2. Paragraph 17 shall read: "The Executive Board will review this Decision not later than May 13, 1987."

World Cereal Situation and Outlook

1. Overall developments and outlook

The discussions leading up to the establishment of the cereal decision in mid-1981 were held against a background of tightening cereal markets and rising prices. During the period between 1977/78 and 1980/81, growth in world cereal consumption had outstripped production, and declining world cereal stocks had led to a substantial rise in cereal prices. Moreover, the ratio of world cereal stocks to consumption had declined below 17 percent, the level considered by FAO to be the minimum required for the world food security. During the last four years, the world cereal situation has improved significantly as the growth in world cereal production has exceeded consumption and an increase in total supplies has caused cereal prices to decline.

World cereal production increased by 13 percent from 1.57 billion tons in calendar year 1980 to 1.79 billion tons in calendar year 1984. The most rapid increase in production occurred in the developing countries where cereal output increased at an annual rate of 4.3 percent per annum; production in the developed countries increased at a more modest rate of 2.6 percent per annum (Table 7). On a regional basis, the largest production increase was achieved in Asia, where production rose by 20 percent from 635 million tons in 1980 to 765 million tons in 1984. In Africa, on the other hand, production increased from 73 million tons in 1980 to 78 million tons in 1981, but declined steadily thereafter due to adverse weather and by 1984 cereal production in Africa had fallen to 62 million tons. In the low-income food-deficit countries 1/ as a group, per capita cereal production increased from 227 kilograms in 1980 to 250 kilograms in 1984.

Global cereal imports declined from 206 million tons in 1980/81 (July/June years) to 200 million tons in 1983/84, but imports of developing countries increased from 97 million tons to 108 million tons over the same period. In 1984/85 world cereal imports are expected to increase to 211 million tons, while imports of developing countries are expected to increase modestly to 110 million tons. World cereal stocks of all grains increased from 237 million tons in 1980/81 to 322 million tons in 1982/83, largely because of a build up of coarse grain and wheat stocks. However, a large coarse grains production shortfall in 1983/84 led to a sharp reduction of stocks of coarse grains, and total world cereal stocks fell by 17 percent to 266 million tons; in 1983/84 total world stocks are expected to recover to 292 million tons. The ratio of world cereal stocks to consumption increased from 16 percent in 1980/81 to 21 percent in 1982/83, but declined to 17 percent in 1983/84; the stock consumption ratio is expected to recover to 18 percent in 1984/85.

1/ Includes all food-deficit countries with per capita income below the level used by the World Bank to determine eligibility for IDA assistance (i.e., US$790 in 1983).

Table 7. World Cereal Situation, 1971/72-1984/85 1/

(In millions of metric tons)

Year 2/	Production 3/		Imports		Ending Stocks 4/	Food Aid in Cereals	Stocks/ Consumption	Export Prices (US$/ton) 5/		
	World	Developing Countries	World	Developing Countries				Wheat	Rice	Maize
1971/72	1,206	503	108	43	217	12.6	.18	61	136	51
1972/73	1,273	586	133	50	175	10.0	.14	92	192	71
1973/74	1,375	621	135	60	186	5.6	.15	178	485	116
1974/75	1,338	633	134	62	179	8.4	.14	162	439	132
1975/76	1,372	682	150	56	191	6.8	.14	151	295	116
1976/77	1,481	698	148	58	249	9.0	.18	112	257	108
1977/78	1,472	699	162	72	242	9.2	.17	116	337	96
1978/79	1,602	748	170	82	277	9.5	.19	141	330	103
1979/80	1,555	750	197	90	258	8.9	.18	175	387	115
1980/81	1,566	770	206	97	237	8.9	.16	190	477	142
1981/82	1,651	813	212	97	284	9.1	.19	170	390	118
1982/83	1,701	831	197	106	322	9.2	.21	158	273	114
1983/84 6/	1,641	889	200	108	266	9.8	.17	153	268	146
1984/85 6/	1,790	912	211	110	292	11.6	.18	150 7/	243 7/	124 7/

Source: FAO, Food Outlook, various issues.

1/ Cereals comprise wheat, rice, and coarse grains.

2/ Data refer to July/June year unless otherwise indicated.

3/ Data refer to calendar year of first year shown.

4/ Stock data are based on an aggregate of national carryover levels at the end of national crop years.

5/ Average spot quotations for July-June. Wheat = U.S. No. 2, Hard Red Winter, Ordinary Protein, f.o.b., Gulf ports; Rice = Thai, White, 5 percent broken, f.o.b., Bangkok; Maize = U.S. No. 2 Yellow, f.o.b., Gulf ports.

6/ Estimate/projection.

7/ July 1984/February 1985.

Reflecting the overall improvement in the world cereal supply/demand position, wheat and rice prices have declined steadily since mid-1981. Maize prices also declined until the end of 1982, but rose sharply in 1983 due to a shortfall in maize production in the United States. Maize prices remained high until mid-1984, but have fallen significantly since then (Chart 1).

After peaking at US$193 per ton in 1981, the composite price of cereals 1/ declined to US$159 per ton in 1982, but then rose to US$163 per ton in 1983 due to the sharp rise in maize prices. In 1984, the composite price declined to US$158 per ton, 22 percent lower than the level it had reached in 1981. Owing to the strengthening of the U.S. dollar during this period, movements of the composite price in terms of SDRs were not quite as pronounced. The composite price in 1984, at SDR 154 per ton, was only 6 percent lower than the peak 1981 price of SDR 164 per ton.

Barring an unforeseen production shortfall in one or more major grain exporting or importing countries, the near term outlook is for adequate world cereal supplies and relatively small price increases. Over the medium term, world grain consumption is likely to increase at a rate of about 2 percent per annum; grain consumption in developing countries is likely to grow at an annual rate of about 3 percent, primarily because of a relatively high rate of population growth. Assuming no major change in government policies in the main grain exporting and importing countries, total world cereal production can be expected to grow at slightly less than 2 percent per annum in reaction to the low prices in recent years. The trend toward increasing self-sufficiency in cereals in the populous countries of Asia is likely to continue and trade in cereals, which grew at an annual rate of 5.4 percent in the two decades between 1960 and 1980, is likely to grow at a much slower rate of about 2 percent per annum over the medium term.

The future course of government grain policies would have a profound effect on the medium-term scenario outlined above. Rising budgetary expenditures on agricultural price support programs in the face of burdensome stocks and low prices has led a number of countries to re-evaluate their policies. With the present low level of grain prices, a move toward more market-oriented farm policies in one or more major grain-exporting countries might reduce supplies by discouraging production and thereby lead to a strengthening in cereal prices over the medium term.

2. Developments by years

After remaining at an average level of 1.56 billion tons in 1979 and 1980, world cereal production increased by 5.9 percent to 1.65 billion tons in 1981. Production of wheat, rice and coarse grains rose because

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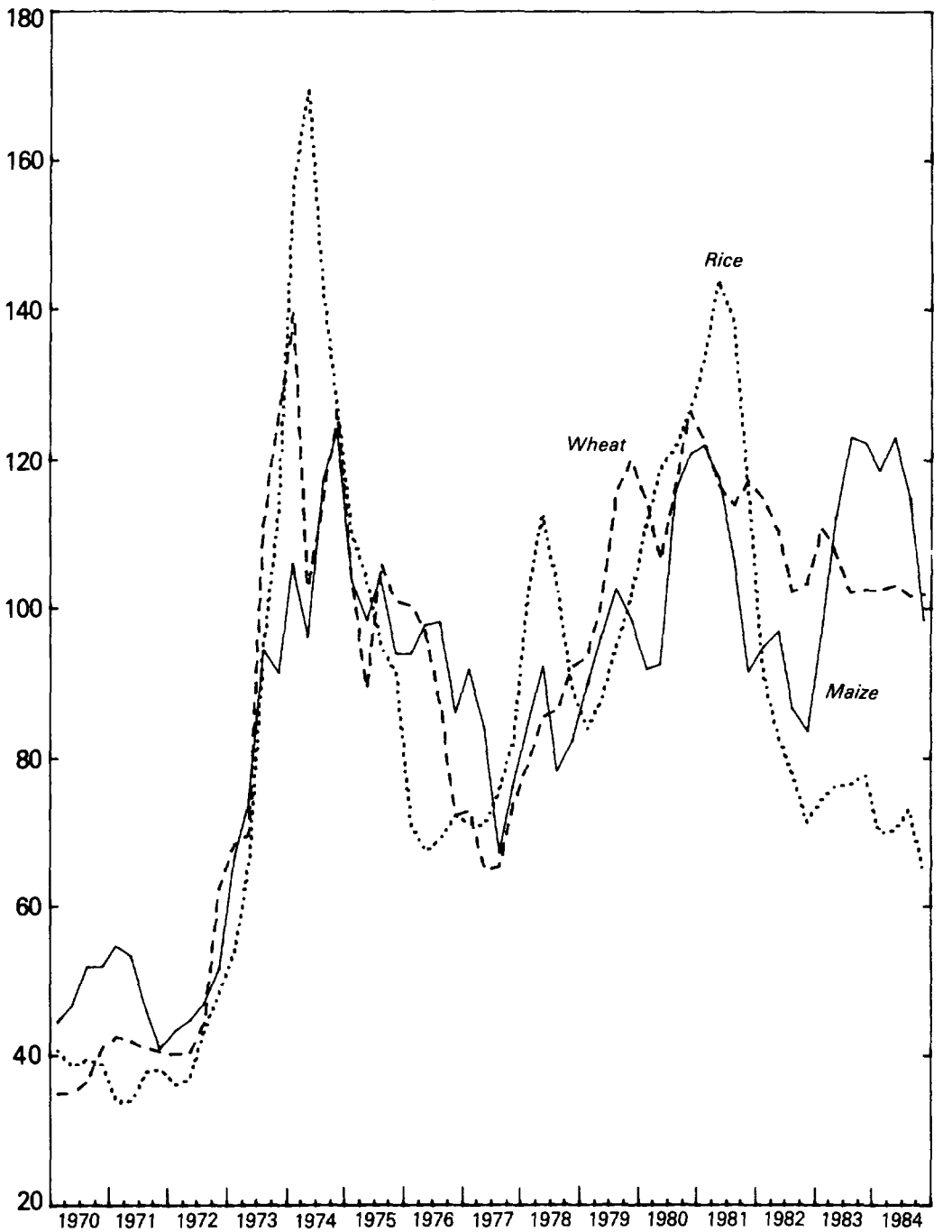
1/ A composite of the prices of wheat, maize and rice weighted by the volume share of these cereals in the total cereal imports of developing countries.

CHART 1

PRICES OF MAJOR CEREALS[1]

(1975 = 100; in terms of U.S. dollars)



[1]Maize: U.S. no. 2 yellow, f.o.b. Gulf ports; wheat: U.S. No. 1 hard red winter, f.o.b. Gulf ports; rice: Thailand, white milled 5 percent broken, f.o.b. Bangkok.

of favorable weather and an increase in the total area sown, with coarse grains showing the greatest increase. Output increased in most major producing countries, except in the U.S.S.R., where cereal production declined by 15 percent due to adverse weather conditions. Output in the developing countries as a group increased by 4.3 percent. In spite of this overall increase in world cereal production, world trade in cereals continued to increase in 1981/82, and the ratio of trade to production remained at 13 percent, the same level as in the two previous crop years. Imports by developing countries, which had risen at an annual rate of 12 percent between 1975/76 and 1980/81, stabilized at 97 million tons in 1981/82. Global cereal stocks, which had declined for two consecutive years, recovered by 19 percent to 284 million tons in 1981/82 and were equivalent to 19 percent of world cereal consumption in the same year. The improvement in global cereal supplies arrested four successive years of cereal price increases and caused prices to decline substantially during 1981/82 (Chart 1).

World cereal production increased by a further 3 percent in 1982 to 1.7 billion tons as a result of a 7 percent increase in world wheat production and a 3 percent increase in world rice production; production of coarse grains remained at virtually the same level as in 1981. In the developing countries, despite a 12 percent increase in wheat production, total cereal production increased by only 2 percent because unfavorable weather caused coarse grain production to decline in parts of Asia and South America and in many parts of Africa. Larger crops in major importing countries and greater use of grain substitutes for livestock feeding caused world cereal import demand to decline by 7 percent in 1982/83. However, the availability of ample supplies at lower prices and production shortfalls in certain countries caused cereal imports by developing countries to increase by 9 percent. World cereal stocks at the end of 1982/83 had risen to 320 million tons or about 21 percent of world consumption and prices of the three major grains continued to decline.

As a result of the combined effects of strong farmer participation in the 1983 U.S. maize program and a drought in the United States, which lowered maize yields substantially, total world cereal production declined by 4 percent in 1983 to 1.64 billion tons. However, the impact of the reduction in maize output on total world cereal supplies was cushioned by the high level of cereal stocks carried over from the 1982/83 crop year and by record 1983 wheat and rice crops. In 1983/84, world cereal consumption exceeded production for the first time in two years causing closing stocks of all cereals to decline by 18 percent and the ratio of stocks to consumption to decline to 17 percent. Coarse grain prices rose sharply during the year because of a 45 percent drop in world coarse grain stocks. Reflecting larger supplies and rising stocks, prices of wheat and rice continued to decline during the year.

In 1984 world cereal production is estimated to have increased by 9 percent to 1.79 billion tons. A sharp recovery in coarse grain production in the United States was largely responsible for an estimated 17 percent increase in cereal production in the developed countries. Output in

developing countries is estimated to have increased by only about 2.5 percent. However, if India and China are excluded, cereal output in the low-income food-deficit countries is estimated to have declined by 4 percent in 1984. Cereal production in Africa, which continued to be affected by drought, is expected to remain at about the same low level as in 1983. Greater use of grains for animal feed in developed countries and increasing human consumption in developing countries are expected to contribute to a 3 percent increase in world cereal consumption in 1984/85. Reflecting increased imports by the U.S.S.R., world trade in cereals is expected to increase to 211 million tons. By the end of 1984/85, world cereal stocks are expected to recover to 292 million tons, which would be about 10 percent higher than the level at the beginning of the crop year; at this level, world cereal stocks are expected to amount to about 18 percent of world consumption in 1985/86, which is considered by the FAO to be adequate for world food security at the global level. Reflecting ample world supplies, prices of wheat and rice continued to decline during 1984, while a recovery in coarse grains production in the United States caused prices to decline during the second half of 1984.

3. Developments by major grains

Prices of wheat, which accounts for about 60 percent of the total cereal imports of developing countries, have been declining since early 1982 because of four successive record world wheat crops. World wheat production is estimated to have increased from 446 million tons in 1980 to 521 million tons in 1984. Production in the developing countries is estimated to have increased at an annual rate of 7 percent, due mainly to significant production gains in Asia, especially in China and India. Overall production in developed countries increased at a much more modest rate of 1.8 percent per annum because significant increases in wheat production in Western Europe, especially in the EC countries, and in Eastern Europe, were partly offset by declining production in the United States and the U.S.S.R. World wheat utilization has lagged behind production, and end of period stocks, which increased from 98 million tons in 1980/81 to 132 million tons in 1983/84, are expected to increase further to 143 million tons by the end of the 1984/85 crop year. Successive record harvests and a high level of stocks caused wheat prices to decline steadily from a level of US$190 per ton in 1980/81 to US$153 per ton in 1983/84 and US$151 per ton during the first six months of the 1984/85 crop year. An increase in imports by the U.S.S.R., as a result of poor harvests in that country, and sharply higher wheat relief shipments to Africa were the main factors which caused world trade in wheat to increase from 92 million tons in 1980 to an estimated level of 102 million tons in 1984. With record wheat supplies available for the 1984/85 marketing year, price competition among major exporters can be expected to remain strong. Though consumption is expected to increase, carry-over stocks at the beginning of the 1985/86 crop year are expected to be larger than in 1984/85. Consequently, wheat prices are not expected to rise appreciably during 1985.

Maize and other coarse grains account for about 30 percent of the cereal imports of developing countries where they are used both as livestock feed, especially in the middle-income developing countries, and for human consumption. World maize production increased by 8 percent to 439 million tons in 1981/82 (years ending September) and remained at about the same level in the following year. However, the world recession lowered demand for meat and livestock products and depressed the demand for maize as a livestock feed. This caused end-of-period maize stocks to increase from 50 million tons in 1980/81 to 96 million tons in 1982/83 and maize prices to decline from US$130 per ton in 1981 to US$106 in 1982. During 1983 and 1984, developments in the United States, which accounts for almost one half of the world maize production and about three fourths of world maize exports, had a major impact on the world maize market. Strong farmer participation in the 1983/84 U.S. acreage reduction program, especially under the payment-in-kind (PIK) program, reduced total U.S. planted acreage by 26 percent. Production on this reduced acreage was further reduced by a severe drought. In the event, maize production in the United States declined by 50 percent in 1983/84, while world maize production declined by 20 percent. In spite of a sharp rise in prices, world maize utilization declined by only 1.6 percent. As a result, by the end of the 1983/84 crop year carry-over stocks had declined by 65 percent.

In 1984/85 much of the maize acreage idled in the United States under the acreage reduction and PIK programs in the previous year was brought back into production and, with favorable weather, production recovered by 30 percent from the abnormally low level of 1983/84. As a result, production in the United States is estimated to have recovered by 81 percent in 1984/85, and this is expected to contribute to a 25 percent recovery in the world crop. This should permit carry-over stocks to recover by 36 percent, while consumption is expected to increase by 4 percent. Coarse grain production in the U.S.S.R. in 1984/85 is estimated to be sharply lower because of a reduction in coarse grain area and hot, dry weather which reduced yields by about 14 percent. Consequently, world trade in maize is expected to increase in 1984/85 by about 12 percent to 67 million tons.

The improvement in global supplies caused maize prices to decline from their record level of US$138 per ton in 1983 to US$126 per ton during the second half of 1984. Competition between major maize exporters is expected to intensify due to the availability of competitively priced feed wheat and sorghum and an expected increase in maize exports from Argentina and China. This and the prospect of a larger 1985/86 U.S. maize crop should prevent any strong rise in maize prices in the near term, but following the typical seasonal pattern prices can be expected to strengthen during the rest of the 1984/85 crop year.

Rice accounts for about 10 percent of the cereal imports of developing countries. Rice production in Asia, which accounts for about 90 percent of world production, is estimated to have increased at an annual average rate of 4 percent between 1980 and 1984 due to favorable monsoon rains and

increasing yields. Impressive gains were achieved in China where production increased by 25 percent over the same period, and in India, where production increased by 12 percent. World rice production is estimated to have increased at an annual rate of 3.6 percent over the same period. Since only about 3 percent of total world rice production enters international trade as compared with about 20 percent for wheat and about 14 percent for maize, rice prices have traditionally been more unstable than those of wheat and maize. A poor harvest in Korea caused that country's rice imports to increase by 190 percent and world rice imports to rise from 12 million tons in 1980 to 13 million tons in 1981. Largely as a result of the increased import demand from Korea in 1981, rice prices increased by 11 percent to US$483 per ton. Since then, there has been no recurrence of a similar situation; though Indonesia's imports quadrupled in 1983, this was offset by reduced imports by other importing countries.

The generally favorable overall rice supply situation, coupled with a slow growth in world import demand, contributed to intense competition between the world's two major rice exporters: the United States and Thailand. The widening price differential between U.S. and Thai rice enabled Thailand to increase its exports by 50 percent between 1981 and 1984, while U.S. rice exports declined by 27 percent over the same period. Rice importing countries benefited from a 48 percent decline in rice prices from an average level of US$484 per ton in 1981 to an average level of US$252 per ton in 1984; during the first quarter of 1985 rice prices averaged US$228 per ton. In 1985, supplies in major importing countries are expected to be ample, and as consumption is expected to lag behind production, stocks are expected to rise to 46 million tons by the end of the year, the highest level in a decade. Given this outlook, a strong recovery in rice prices is unlikely in the near term. However, since carry-over stocks of lower-quality short and medium grain rice are relatively low, increased import demand for these types of rice from Asian and African countries could result in some recovery in prices of these grades.

4. The food-deficit countries

In the low-income food-deficit countries, total cereal production is estimated by the FAO to have increased at an annual rate of 4.5 percent between 1980 and 1984 but population growth reduced the rate of growth in per capita cereal production to 2.4 percent per annum. The total cereal imports of these countries increased from 46 million tons in 1980/81 to 53 million tons in 1982/83 before declining to 48 million tons in 1983/84; cereal imports of 49 million tons are forecast for 1984/85.

Food aid in cereals to these countries increased from 7.2 million tons in 1980/81 to 7.7 million tons in 1982/83 and 8.7 million tons in 1983/84. Largely in response to the extraordinary food needs of drought-stricken parts of Africa, food aid in cereals to the low-income food-deficit countries is expected to increase to 10.4 million tons in 1984/85. The

proportion of the cereal imports of these countries covered by food aid increased from 15 percent in both 1981/82 and 1982/83 to 18 percent in 1983/84; in 1984/85 this share is expected to rise to 21 percent. Owing to the increase in food aid in cereals and the decline in world cereal prices, expenditures by these countries on commercial cereal imports declined from US$9.0 billion in 1980/81 to US$7.8 billion in 1983/84; in 1984/85, expenditures are expected to fall to about US$7.4 billion.

On a regional basis, the largest gains in cereal production in the low-income food-deficit countries during the period between 1980 and 1984 were achieved in Asia, where production is estimated to have increased by 29 percent, from 529 million tons in 1980 to an estimated level of 681 million tons in 1984 largely as a result of cereal production increases in China and India. Cereal production in the low-income food-deficit countries of Central and South America showed virtually no increase over the same period. By contrast, cereal production in the low-income food-deficit countries of Africa has fluctuated around a declining trend. Production declined from 52 million tons in 1979 to 51 million tons in 1981, then recovered to 55 million tons in 1982 before declining to 50 million tons in 1983; cereal production in 1984 is estimated to be about 50 million tons.

Reflecting the above cereal production trends, cereal imports by the low-income food-deficit countries in Asia declined from 24 million tons in 1980 to 22 million tons in 1984, while imports by low-income food-deficit African countries increased from 16 million tons in 1980 to 20 million tons in 1984. Shortfalls in cereal production in Africa also caused the regional pattern of food aid flows to shift in favor of Africa. Total food aid in cereals increased from 8.9 million tons in 1979/80 to 9.8 million tons in 1983/84, while the inflow of food aid to Africa increased from 3.7 million tons to 5.1 million tons over the same period, making it the largest recipient.

Of the total of 30 countries identified by the FAO in early 1985 as facing abnormal food shortages, 21 were in Africa, 1/ six in Asia, 2/ one in the Middle East 3/ and three in the Western Hemisphere 4/. Although the number of African countries affected by abnormal food shortages declined from 25 in 1983/84 to 21 in 1984/85, the African food crisis has been more severe in 1984/85 because 15 of these 21 countries were already affected by abnormal food shortages in 1983/84. In 1984 aggregate cereal production in the 21 affected countries, at 22.5 million tons, was 14 percent lower than the drought-reduced crop of 1983 and 20 percent lower than the 1979-83 average. The food situation in many of these countries is expected to deteriorate further over the next few months, as they enter the lean period before the next main harvests.

1/ Angola, Botswana, Burkina Faso, Burundi, Cape Verde, Chad, Ethiopia, Kenya, Lesotho, Mali, Mauritania, Morocco, Mozambique, Niger, Rwanda, Senegal, Somalia, Sudan, Tanzania, Zambia, and Zimbabwe.

2/ Bangladesh, Jordan, Kampuchea, Laos, Lebanon, and Vietnam.

3/ Jordan.

4/ Bolivia, El Salvador, and Nicaragua.

In the four years since the cereal decision was adopted, high levels of cereal production in cereal surplus countries and significant gains in cereal production in the populous countries of Asia have contributed to a general improvement in the overall global food security situation. However, the improvement has not been uniform and the food security situation in many low-income food-deficit countries, especially in Africa, has not improved appreciably. While lower cereal prices made it easier for some food-deficit countries to import cereals commercially, severe foreign exchange constraints prevented many others from benefiting from the prevailing low prices.

Summary of Purchases under the Cereal Decision (Executive Board Decision No. 6860-(81/81))

For each purchase under the cereal decision, this annex summarizes the calculations upon which the purchase was based, the causes of the underlying cereal import excess and/or export shortfall, and indicates how the member was able to satisfy the test of cooperation with the Fund. For purchases using the early drawing procedure, the final calculation of the compensable amount is compared with the amount of purchase. Reference is also made to the ex post calculation of the compensable amount in the four cases where actual data are now available for the two-year period following the shortfall or excess year.

1. Malawi

a. First purchase--September 1981 (EBS/81/189, 9/2/81)

This was the first purchase made under the cereal decision. The purchase of SDR 12.0 million represented a cereal import excess of SDR 18.7 million, partly offset by a merchandise export excess estimated at SDR 6.7 million, for the year ended June 1981. The early drawing procedure was utilized, as the export excess was based on data estimated for the last quarter of the shortfall year; the cereal import excess was based on actual data. The subsequent final calculation showed that actual exports in the shortfall year were higher than estimated and that Malawi had been overcompensated by SDR 10.5 million; this amount was repurchased in two installments in March and April 1982 (Table 8).

The excess cost of cereal imports reflected almost entirely a higher volume of maize imports necessitated by the drought-induced failure of the domestic crop in two successive growing seasons. Cereal import prices in the shortfall year were estimated to be only marginally above their medium-term trend. Malawi was required to meet the stricter test of cooperation since outstanding compensatory financing purchases were already above 50 percent of quota. This test was met by Malawi's satisfactory performance under a two-year stand-by arrangement in effect at the time of purchase.

The ex post calculation using revised actual data for the entire five-year period indicates no compensable amount. A sharply lower cereal import excess of SDR 6.5 million, resulting from the downward revision of the value of cereal imports in the excess year, was completely offset by a slightly higher export excess of SDR 19.5 million.

b. Second purchase--March 1983 (EBS/83/28, 2/4/83)

As required by paragraph 2 of the cereal decision, the next compensatory financing purchase by Malawi was also made under that decision, since it occurred within three years of the 1981 purchase. The purchase of SDR 12.2 million was in respect of the shortfall year ended September 1982 and represented the net amount of a merchandise export shortfall

Table 8. Malawi: First Purchase--Determination of the Amount of Compensation

(In millions of SDRs)

	Years Ended June					
			Estimated	Actual	Projected	
	1979	1980	1981		1982	1983
1. Cereal imports	1.4	5.7		27.9 1/	5.6	5.4
2. Merchandise exports	145.2	191.5	208.3 2/	221.2	227.0	253.0
3. Compensable amount: (3.1)+(3.2)			12.0	1.5		
3.1 Cereal import excess			18.7	18.7		
3.2 Export shortfall			-6.7 3/	-17.2 3/		
4. Purchase			12.0			
Less: overcompensation				10.5 4/		
Net purchase				1.5		
5. Ex post calculation:						
Compensable amount: (5.1)+(5.2)				--		
5.1 Cereal import excess				6.5		
5.2 Export shortfall				-19.9 3/		

1/ Believed to be final data at the time of purchase, but subsequently revised downward to SDR 13.9 million.

2/ Based on estimated data for April-June, 1981.

3/ Excess.

4/ Reported to the Executive Board in January 1982; repurchases of SDR 3.8 million and SDR 6.7 million were made in March and April 1982, respectively.

estimated at SDR 16.9 million, partly offset by a negative excess (shortfall) in cereal import costs estimated at SDR 4.1 million, and adjusted downward by SDR 0.6 million to avoid double compensation arising from a buffer stock (sugar) purchase of SDR 0.9 million made in December 1981 (Table 9).

Table 9. Malawi: Second Purchase--
Determination of the Amount of Compensation

(In millions of SDRs)

	Years Ended September				
				Projected	
	1980	1981	1982	1983	1984
1. Cereal imports	7.1	23.4	5.2	5.2	5.6
2. Merchandise exports	203.5	237.7	209.9	223.1	264.8
3. Compensable amount: (3.1)+(3.2)			12.8		
3.1. Cereal import excess			-4.1 1/		
3.2. Export shortfall			16.9		
Less: double compensation			0.6 2/		
4. Purchase			12.2		
5. Ex post calculation:					
Compensable amount			... 3/		

1/ Shortfall.
2/ Arising in respect of a buffer stock (sugar) purchase in December 1981.
3/ Data not available.

The entire amount of the purchase was therefore related to an export shortfall resulting from lower world prices for major agricultural exports and transportation difficulties in neighboring countries. The negative excess in cereal import costs reflected a return to a normal level of maize production. The stricter test of cooperation was met by Malawi's satisfactory performance under a one-year stand-by arrangement ended in March 1983 and by the authorities' intention to enter into a longer-term program with the Fund.

c. Third purchase--August 1984 (EBS/84/153, 7/12/84)

Malawi's third purchase (Table 10) under the cereal decision, like the second, was not related to an excess in the cost of cereal imports. The purchase of SDR 13.8 million was in respect of a merchandise export shortfall estimated at SDR 16.0 million (after a deduction of SDR 13.0 million on account of the accumulation of tobacco stocks during the shortfall year ended December 1983), partly offset by a negative excess (shortfall) in cereal import costs estimated at SDR 2.2 million.

Table 10. Malawi: Third Purchase--
Determination of the Amount of Compensation

(In millions of SDRs)

	Calendar Years			Projected	
	1981	1982	1983	1984	1985
1. Cereal imports	15.6	5.7	5.6	5.9	6.2
2. Merchandise exports	233.1	210.7	193.7	226.6	254.3
3. Compensable amount: (3+1)+(3.2)			13.8		
3.1 Export shortfall: (a)+(b)			16.0		
(a) Gross shortfall			(29.0)		
(b) Stock adjustment			(-13.0) 1/		
3.2 Cereal import excess			-2.2 2/		
4. Purchase			13.8		
5. Ex post calculation: Compensable amount			... 3/		

1/ Made on account of the temporary accumulation of tobacco stocks due to transportation difficulties at the end of the shortfall year.
2/ Shortfall.
3/ Data not available.

The shortfall in merchandise exports was again largely the result of low world commodity prices and transportation difficulties in neighboring countries. The stricter test of cooperation was met by Malawi's satisfactory performance during the first year of an extended arrangement and the formulation of appropriate economic and financial policies for the second year of the arrangement.

2. Korea

a. First purchase--January 1982 (EBS/82/5, 1/8/82)

The purchase of SDR 106.2 million, the second under the cereal decision, was made in respect of an excess in cereal import costs estimated at SDR 570.2 million for the year ended September 1981, which was partly offset by an excess in merchandise exports estimated at SDR 464.0 million (Table 11).

Table 11. Korea: First Purchase--
Determination of the Amount of Compensation

(In millions of SDRs)

	Years Ended September				
				Projected	
	1979	1980	1981	1982	1983
1. Cereal imports	461	677	1,425	874	837
2. Merchandise exports	11,052	12,517	16,919	20,700	24,900
3. Compensable amount: (3.1)+(3.2)			106.2		
3.1 Cereal import excess			570.2		
3.2 Export shortfall			-464.0 1/		
4. Purchase			106.2		
5. Ex post calculation:					
Compensable amount: (5.1)+(5.2)			--		
5.1 Cereal import excess			584.4		
5.2 Export shortfall			-1,248.1 1/		

1/ Excess.

Most of the excess in the cost of cereal imports reflected a surge in rice imports in the shortfall year, necessitated by the failure of the domestic crop in the previous growing season due to adverse weather. In addition, a small excess in maize and wheat import costs was caused by higher world prices. As outstanding compensatory financing purchases at the time of purchase exceeded 50 percent of quota, Korea was required to meet the stricter test of cooperation. This test was met by Korea's satisfactory performance under a one-year stand-by arrangement ending February 1982.

The ex post calculation of the compensable amount using actual data for the two post-excess years indicates no compensable amount. The ex post cereal import excess of SDR 584.4 million was slightly higher than estimated at the time of purchase. However, as the world recession was more protracted than originally expected, the actual rate of growth of merchandise exports was substantially lower than that originally projected. Consequently, the ex post merchandise export excess of SDR 1,248.1 million was almost three times as large as originally estimated.

b. Second purchase--May 1984 (EBS/84/100, 5/3/84)

Although not related to an excess in cereal import costs, this purchase was made under the cereal decision in accordance with paragraph 2 of that decision. A compensable amount of SDR 557.1 million was calculated for calendar year 1983; a shortfall of SDR 626.1 million in merchandise exports was only partly offset by a negative excess of SDR 69.0 million in the cost of cereal imports (Table 12). The purchase amount of SDR 279.7 million was constrained to about half of the compensable amount by the joint quota limit of 105 percent on outstanding purchases under the cereal decision.

Table 12. Korea: Second Purchase--
Determination of the Amount of Compensation

(In millions of SDRs)

	Calendar Years				
				Projected	
	1981	1982	1983	1984	1985
1. Cereal imports	1,346	810	948	985	995
2. Merchandise exports	17,685	19,114	21,651	25,435	29,473
3. Compensable amount: (3.1)+(3.2)			557.1		
3.1 Cereal import excess			-69.0 1/		
3.2 Export shortfall			626.1		
4. Purchase			279.7		
5. Ex post calculation: Compensable amount			... 2/		

1/ Shortfall.
2/ Data not available.

The export shortfall reflected largely the impact of the international recession on the prices of Korea's exports, while the negative excess in cereal imports was due mainly to a decline in rice imports to normal levels from their peak in 1981. The stricter test of cooperation was met by Korea's satisfactory performance under a 20-month stand-by arrangement through end-March 1985.

3. Morocco, April 1982 (EBS/82/58, 3/31/82)

The third purchase under the cereal decision was made by Morocco for an amount of SDR 236.4 million in respect of a cereal import excess of SDR 112.4 million and a merchandise export shortfall of SDR 113.0 million for the year ended March 1982 (Table 13). The purchase was made under the early drawing procedure as data for both cereal imports and merchandise exports were estimated for the last quarter of the shortfall year. Subsequently, the final calculation of the shortfall based on actual data for the shortfall year revealed that no overcompensation had taken place.

The excess cost of cereal imports was due entirely to increased imports of wheat, barley and maize necessitated by a halving of cereals production in the preceding crop year due to drought. Drought also reduced the output of exportable agricultural products, mainly fruit and vegetables, and together with the international recession, was a major cause of the export shortfall. Morocco was able to satisfy the stricter test of cooperation by the adoption of a set of economic and financial policies supported by a one-year stand-by arrangement which was approved by the Executive Board concurrently with the purchase under the cereal decision.

Using actual data for the two years through March 1984, the ex post compensable amount is calculated at SDR 123.8 million, representing a slightly higher cereal import excess of SDR 169.6 million, partly offset by a merchandise export excess of SDR 45.8 million. Merchandise exports did not recover as expected due to the continuing effects of drought and weaker-than-anticipated external demand. By contrast, cereal production recovered more rapidly than expected, thereby reducing imports in 1982/83 by more than originally projected.

4. Kenya, June 1982 (EBS/82/84, 5/11/82)

Kenya's purchase of SDR 60.4 million under the cereal decision was based on the early drawing procedure; the calculations were based on estimated data for merchandise exports for the last six months of the shortfall year ended December 1981, and on actual cereal imports data. A compensable amount of SDR 65.8 million was calculated as the sum of an excess of SDR 31.6 million in cereal import costs and a shortfall of SDR 34.2 million in merchandise export earnings (Table 14). However, the purchase was constrained to SDR 60.4 million by the joint quota limit of 125 percent of quota on outstanding purchases under the cereal decision. The subsequent final calculation based on actual data for the shortfall year reduced the export shortfall to SDR 29.8 million and the compensable amount to SDR 61.5 million, but as this was still greater than the amount of purchase, no overcompensation was involved.

Table 13. Morocco: Determination of the Amount of Compensation

(In millions of SDRs)

	Years Ended March					
			Estimated	Actual	Projected	
	1980	1981	1982		1983	1984
1. Cereal imports	222.7	243.7	409.3 1/	428.8	284	270
2. Merchandise exports	1,671.0	1,800.0	1,915.3 1/	1,907.0	2,270	2,625
3. Compensable amount: (3.1)+(3.2)			236.4	258.5		
3.1 Cereal import excess			123.4	139.0		
3.2 Export shortfall			113.0	119.5		
4. Purchase			236.4			
Less: overcompensation				—		
Net purchase				236.4		
5. Ex post calculation:						
Compensable amount: (5.1)+(5.2)				123.8		
5.1 Cereal import excess				169.6		
5.2 Export shortfall				-45.8 2/		

1/ Based on estimated data for January-March 1982.
2/ Excess.

Table 14. Kenya: Determination of the Amount of Compensation

(In millions of SDRs)

	Calendar Years					
			Estimated	Actual	Projected	
	1979	1980	1981		1982	1983
1. Cereal imports	2.9	71.2		64.5	17.0	9.0
2. Merchandise exports						
a. EBS/82/84	798.4	1,009.9	953.8 1/	...	1,048.0	1,168.0
b. Actual 2/	779.0	985.3	...	947.0	1,048.0	1,168.0
3. Compensable amount: (3.1)+(3.2)			65.8	61.5		
3.1 Cereal import excess			31.6	31.6		
3.2 Export shortfall			34.2	29.9 3/		
4. Purchase			60.4			
Less: overcompensation				--		
Net purchase				60.4		
5. Ex post calculation:						
Compensable amount				... 4/		

1/ Based on estimated data for July-December 1981.

2/ The export values for 1979 and 1980 used in EBS/82/84 were revised downward by the Kenyan authorities because of an inadvertent inclusion of certain re-export items with data on domestic exports.

3/ Based on data shown in line 2b.

4/ Data not available.

The excess cost of cereal imports reflected unusually high volumes of imported maize and wheat in both 1980 and 1981 as a result of drought in two consecutive growing seasons. Drought also reduced the supply of exportable agricultural products, especially tea. In addition, lower international prices for coffee and weak demand in regional trading partners were important causes of the export shortfall. The stricter test of cooperation was met by Kenya's satisfactory performance under a one-year stand-by arrangement in effect at the time of purchase.

5. Bangladesh

a. First purchase--August 1982 (EBS/82/136, 7/28/82)

The fifth purchase under the cereal decision was similar to the preceding two purchases in that it included both a cereal import excess and an export shortfall and utilized the early drawing procedure. For the year ended September 1982, a cereal import excess of SDR 33.6 million and a merchandise export shortfall of SDR 56.0 million were estimated (Table 15). The compensable export shortfall was, however, reduced by SDR 18.4 million to avoid double compensation arising from a compensatory financing purchase in February 1982 which was based on a shortfall year ended March 1982. The compensable amount of SDR 71.2 million was the amount of purchase. Cereal import data were estimated for the last four months of the shortfall year and merchandise export data for the last six months. The subsequent final calculation based on actual data for the shortfall year indicated that both the cereal and export components of the compensable amount had been overestimated by SDR 11.2 million and SDR 8.1 million, respectively, and Bangladesh was required to make a repurchase of SDR 19.3 million which was completed in March 1983.

Approximately two thirds of the excess cost of cereal imports was due to a higher volume of rice imports and the remainder to an increased volume of wheat imports, both necessitated by the effects of drought on domestic production. Movements in cereals prices did not contribute to the excess. The export shortfall reflected mainly depressed world demand for jute which reduced unit values in the shortfall year to well below their medium-term trend. Since the purchase brought outstanding purchases under the cereal decision to less than 50 percent of quota, Bangladesh was not required to satisfy the stricter test of cooperation with the Fund. The test of cooperation for a lower tranche purchase was met by budgetary measures taken in June 1982 and ongoing discussions between the staff and the authorities on adjustment measures.

Using actual data for the two years through September 1984, the ex post compensable amount is calculated at SDR 12.2 million, representing an export shortfall of SDR 45 million and a cereal import shortfall of SDR 32.8 million. The export shortfall is larger than originally estimated due to stronger than anticipated price and volume growth of major exports. Cereal imports in the year ended September 1984 were much larger than projected because of the adverse effects of extensive floods on rice production.

Table 15. Bangladesh: First Purchase--Determination of the Amount of Compensation

(In millions of SDRs)

	Years Ended September					
			Estimated	Actual	Projected	
	1980	1981	1982		1983	1984
1. Cereal imports	118.1	--	81.0 1/	67.0	25	15
2. Merchandise exports	587.9	568.2	538.2 2/	548.6	605	681
3. Compensable amount: (3.1)+(3.2)			71.2	51.9		
3.1. Cereal import excess			33.6	22.4		
3.2. Export shortfall: (a)-(b)			37.6	29.5		
a. Shortfall			(56.0)	(47.9)		
b. Double compensation 3/			(18.4)	(18.4)		
4. Purchase			71.2			
Less: overcompensation				19.3 4/		
Net purchase				51.9		
5. Ex post calculation:						
Compensable amount: (5.1)+(5.2)				12.2		
5.1 Cereal import excess				-32.8 5/		
5.2 Export shortfall				45.0		

1/ Based on estimated data for June-September, 1982.
2/ Based on estimated data for April-September, 1982.
3/ Arising in respect of a compensatory financing purchase in February 1982.
4/ Reported to the Executive Board in February 1983; a repurchase of the full amount of over-compensation was made in March 1983.
5/ Shortfall.

b. Second purchase--April 1985 (EBS/85/62, 3/15/85) 1/

The proposed purchase of SDR 54.95 million is in respect of a net compensable amount of SDR 108.2 million, consisting of an excess of SDR 137.9 million in the cost of cereal imports which was partly offset by a negative shortfall (excess) of SDR 31.5 million in merchandise export earnings for the year ended December 1984 (Table 16). If approved, the purchase would raise the outstanding CF purchases to the equivalent of 50 percent of quota.

Table 16. Bangladesh: Second Purchase--Determination of the Amount of Compensation

(In millions of SDRs)

	Calendar Years				
				Projected	
	1982	1983	1984	1985	1986
1. Cereal imports	104.0	75.8	266.6	106.4	81.5
2. Merchandise exports	553.6	653.5	780.7	877.5	952.2
3. Compensable amount: (3.1)+(3.2)			108.2		
3.1 Cereal import excess			139.7		
3.2 Export shortfall			-31.5 1/		
4. Purchase			54.95		
5. Ex post calculation: Compensable amount			... 2/		

1/ Excess.
2/ Data not available.

The excess cost of cereal imports is divided about evenly between rice and wheat. An abnormally large import volume was necessitated in 1984 by drought in the spring and a series of floods in mid-year; the development of cereals prices made a negligible contribution to the excess. The excess in merchandise export earnings is accounted for entirely by a recovery of world demand for jute which caused a sharp increase in unit values in the shortfall year. In the staff paper on the proposed request, the test of cooperation for a lower tranche purchase is judged to have been satisfied by the successful completion by Bangladesh of a one-year stand-by arrangement in 1982/83; by the tightening of financial policies and the liberalization of exchange arrangements in 1984 in an attempt

1/ Board consideration of the request is scheduled for April 10, 1985.

to redress a deterioration in the balance of payments; and by ongoing discussions between the staff and the authorities on the formulation of required adjustment measures.

6. Ghana, December 1984 (EBS/84/219, 10/22/84)

The purchase of SDR 58.2 million was in respect of a compensable amount of SDR 111.6 million for the year ended May 1984, calculated as the sum of a cereal import excess of SDR 9.0 million and a merchandise export shortfall of SDR 102.6 million (Table 17). However, the export component of the purchase was constrained to SDR 49.2 million by the quota limit on outstanding purchases related to export shortfalls; Ghana had made a purchase of SDR 120.5 million (equivalent to 58.9 percent of quota) under the Compensatory Financing Decision No. 6224 in August 1983.

The excess cost of cereal imports resulted entirely from an increased volume of maize and wheat imports following three years of low rainfall culminating in serious drought in 1983. The drought also had a severe impact on cocoa production and exports, and by limiting the production of hydroelectricity, the drought had the effect of reducing manufacturing and mining exports. Ghana was able to meet the stricter test of cooperation by the successful completion of a one-year stand-by arrangement in 1983/84 and by its satisfactory performance under a 16-month stand-by arrangement in effect at the time of purchase.

Table 17. Ghana: Determination of the Amount of Compensation

(In millions of SDRs)

	Years Ending May				
				Projected	
	1982	1983	1984	1985	1986
1. Cereal imports	25.3	16.2	34.5	17.8	33.6
2. Merchandise exports	608.9	450.5	437.0	561.6	679.7
3. Compensable amount: (3.1)+(3.2)			111.6		
3.1 Cereal import excess			9.0		
3.2 Export shortfall			102.6		
4. Purchase: (4.1)+(4.2)			58.2		
4.1 Cereal component			9.0		
4.2 Export component			49.2 1/		
5. Ex post calculation: Compensable amount			... 2/		

1/ Determined by the limit of the 83 percent of quota on outstanding purchases.
2/ Data not available.

7. Jordan, January 1985 (EBS/84/265, 12/20/85)

The purchase of SDR 57.4 million was equal to the compensable amount, which consisted of an excess of SDR 23.0 million in the cost of cereal imports and a shortfall of SDR 34.4 million in aggregate earnings from merchandise exports, travel, and workers' remittances calculated for the year ended June 1984 (Table 18). The purchase raised the member's outstanding purchases under the cereal decision from zero to 77.7 percent of quota.

Table 18. Jordan: Determination of the Amount of Compensation

(In millions of SDRs)

	Years Ending June				
				Projected	
	1982	1983	1984	1985	1986
1. Cereal imports	104	119	163	151	162
2. Aggregate earnings 1/	1,850	1,898	2,076	2,286	2,512
3. Compensable amount: (3.1)+(3.2)			57.4		
3.1 Cereal import excess			23.0		
3.2 Export shortfall			34.4		
4. Purchase			57.4		
5. Ex post calculation: Compensable amount			... 2/		

1/ From merchandise exports and services.
2/ Data not available.

The excess cost of cereal imports was due entirely to an increased volume of wheat and barley imports necessitated by production shortfalls caused by severe drought during the critical sowing period in December 1983-January 1984. The shortfall in earnings reflected mainly the contraction of markets in regional trading partners, a weakening of world prices for major exports, and security problems in some neighboring countries. Jordan was able to meet the stricter test of cooperation with the Fund by the past and continuing implementation of appropriate policies in a timely manner to deal with its balance of payments difficulties. Apart from the temporary effects of the shortfalls, Jordan's balance of payments position was judged to be satisfactory.

Excesses in Cereal Import Costs, 1979-85

Excesses in cereal import costs can be calculated for recent years on the basis of data provided by the Food and Agricultural Organization of the United Nations (FAO). For 62 Fund members defined by FAO as low-income food-deficit countries, excesses in cereal import costs are calculated for years ended in 1979 to 1984, with a projection for the year ending in 1985. For an additional 55 Fund members, given the data currently available, excesses can only be calculated through 1983. The calculations of cereal import costs for the 117 Fund members examined are shown in Table 19. 1/

Of the 117 countries considered, the number experiencing excesses in cereal import costs rose from 28 in 1979 to 77 in 1981 and then fell to 28 in 1983. African countries dominated in terms of numbers, while Asian countries dominated in terms of value of cereal import excesses. The pattern of excesses in cereal import costs during the 1979-83 period largely reflected the movements in cereal prices. Unit values of cereal imports in SDR terms increased by 15 percent in 1980, and by a further 18 percent in 1981, and fell by 5 percent in 1982, and by a further 7 percent in 1983.

The calculations made for the 62 low-income food-deficit countries for 1984 and 1985 indicate total cereal excesses in the order of those in 1982 and 1983. However, the number of countries experiencing cereal excesses in 1984 and 1985 is considerably greater than in 1983 and is concentrated in Africa.

A more detailed analysis of excesses in cereal import costs can be made for that period of operation of the cereal decision for which information is now available for the post-excess years. Table 20 gives the results of an analysis of cereal excesses in 1981-83 with attention being given to countries with cereal excesses amounting to more than SDR 0.5 million and to more than 5 percent of their Fund quota. Using these criteria, total cereal excesses for the 117 countries considered amounted to SDR 2.7 billion in 1981, SDR 0.8 billion in 1982, and SDR 1.4 billion in 1983. In 1981 a total of 54 countries experienced cereal excesses of more than SDR 0.5 million and of more than 5 percent of their Fund quota; the number fell to 28 countries in 1982 and to 22 countries in 1983. However, many of these countries would not have been able to use the cereal decision because realized excesses in export earnings, particularly for 1981, would have offset the excesses in cereal import costs. Excesses in export earnings would have offset the cereal excesses of 36 countries in 1981 and 9 countries in 1982. As a result, in 1981 the total value of net cereal excesses (cereal excesses not offset by excesses in export earnings) was only SDR 0.3 billion, one ninth of the

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1/ The calculations are made with reference to annual data whereas the cereal decision allows that use of any 12-month period, subject to the limitations concerning timeliness of data and use of estimated data, for the excess (shortfall) year.

Table 19. Excesses in Cereal Import Costs of Developing Countries, 1979-85

Region	Number of Countries	Excess Years Ending in							Excess Years Ending in						
		1979	1980	1981	1982	1983	1984	1985	1979	1980	1981	1982	1983	1984	1985
		(In millions of SDRs)							(Number of countries)						
Total	117	747	1,175	2,765	808	1,374	...	...	28	49	77	39	28	...	...
Low-income food-deficit	(62)	(533)	(395)	(1,218)	(565)	(768)	(627)	(529)	(14)	(23)	(39)	(23)	(7)	(28)	(26)
Other	(55)	(214)	(780)	(1,547)	(243)	(606)	(...)	(...)	(14)	(26)	(38)	(16)	(21)	(...)	(...)
Africa	47	64	142	340	210	156	...	...	12	21	28	21	11	...	...
Low-income food-deficit	(37)	(52)	(110)	(306)	(203)	(6)	(107)	(180)	(8)	(16)	(24)	(16)	(4)	(16)	(15)
Other	(10)	(12)	(32)	(34)	(7)	(150)	(...)	(...)	(4)	(5)	(4)	(5)	(7)	(...)	(...)
Asia	24	479	288	1,234	447	789	...	...	6	6	13	7	6	...	...
Low-income food-deficit	(18)	(477)	(281)	(579)	(354)	(762)	(313)	(200)	(5)	(5)	(8)	(5)	(3)	(7)	(7)
Other	(6)	(2)	(7)	(655)	(93)	(27)	(...)	(...)	(1)	(1)	(5)	(2)	(3)	(...)	(...)
Middle East	8	12	16	378	33	122	...	...	2	4	6	4	3	...	...
Low-income food-deficit	(3)	(--)	(--)	(297)	(8)	(--)	(198)	(147)	(--)	(--)	(3)	(2)	(--)	(3)	(3)
Other	(5)	(12)	(16)	(81)	(25)	(122)	(...)	(...)	(2)	(4)	(3)	(2)	(3)	(...)	(...)
Western Hemisphere	30	104	590	503	4	300	...	...	5	14	23	3	7	...	...
Low-income food-deficit	(4)	(4)	(4)	(36)	(--)	(--)	(9)	(2)	(1)	(2)	(4)	(--)	(--)	(2)	(1)
Other	(26)	(100)	(586)	(467)	(4)	(300)	(...)	(...)	(4)	(12)	(19)	(3)	(7)	(...)	(...)
Europe	8	88	139	310	114	7	...	...	3	4	7	4	1	...	...
Low-income food-deficit	(--)	(--)	(--)	(--)	(--)	(--)	(--)	--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)
Other	(8)	(88)	(139)	(310)	(114)	(7)	(...)	..)	(3)	(4)	(7)	(4)	(1)	(...)	(...)

Table 20. Analysis of Incidence of Excesses in Cereal Import Costs Incurred by 117 Developing Countries, 1981-83

Countries with Cereal Excesses of more than SDR 0.5 Million and of more than 5 percent of IMF Quota	Excess Years Ended in 1981	1982	1983	Excess Years Ended in 1981	1982	1983
	(In millions of SDRs)			(Number of countries)		
1. Simulation of cereal excesses based on:						
1.1 Actual data						
Gross cereal excesses	2,695	689	1,363	54	28	22
Africa	313	205	156	17	18	9
Asia	1,214	359	785	11	4	4
Middle East	377	18	122	6	2	3
Western Hemisphere	489	3	293	16	2	5
Europe	302	104	7	4	2	1
Net cereal excesses 1/	310	298	1,363	18	19	22
Africa	87	198	156	6	15	9
Asia	8	94	785	3	3	4
Middle East	25	6	122	2	1	3
Western Hemisphere	75	--	293	6	--	5
Europe	115	--	7	1	--	1
1.2 Projected prices for post-excess years						
Gross cereal excesses	1,537	488	1,134	34	24	14
Africa	173	136	134	11	14	4
Asia	718	243	659	7	4	3
Middle East	202	9	108	3	2	2
Western Hemisphere	239	3	228	10	2	4
Europe	205	97	5	3	2	1
Net cereal excesses 1/	515	203	1,130	22	19	13
Africa	119	131	134	8	14	4
Asia	128	70	659	4	3	3
Middle East	14	1	108	1	1	2
Western Hemisphere	52	1	224	6	1	3
Europe	202	--	5	3	--	1
2. Actual CF purchases with cereal components						
2.1 Gross cereal excesses	620	146	--	3	2	--
Africa	50	123	--	2	1	--
Asia	570	22	--	1	1	--
2.2 Cereal component of purchases 2/	139	146	--	3	2	--
Africa	33	123	--	2	1	--
Asia	106	22	--	1	1	--

1/ Cereal excesses not offset by excesses in export earnings.
2/ After early repurchase to reverse any overcompensation.

total value of gross cereal excesses. In 1982 the total value of net cereal excesses also fell to SDR 0.3 billion, less than one half of the value of gross cereal excesses. By contrast, all of the 18 countries with cereal excesses in 1983 also had export shortfalls and the total value of net cereal excesses equalled that of gross cereal excesses.

Perhaps more relevant to the assessment of the use of the cereal decision is the analysis of cereal excesses based upon the prices being projected for the post-excess years at the time of the possible purchases. The prices for cereals projected in the period 1981-83 for subsequent years have proven to be higher than those actually realized. As a result, use of projected prices reduces the perceived cereal excesses considerably below those obtained using realized prices. Total cereal excesses using projected prices for the 117 countries considered would have amounted to SDR 1.5 billion in 1981, SDR 0.5 billion in 1982, and SDR 1.1 billion in 1983 (compared with SDR 2.7 billion, SDR 0.7 billion and SDR 1.4 billion, respectively, using realized prices). A total of 34 countries would have been perceived as having cereal excesses in 1981, 24 in 1982, and 14 in 1983. However, because prices for export commodities were also projected in this period at levels higher than subsequently realized, there is a smaller reduction in compensable cereal excesses on account of perceived export excesses than when actual data are used. Perceived export excesses offset the cereal excesses of 12 countries in 1981, of 5 countries in 1982, and of 1 country in 1983. 1/ Thus, 22 countries might have been perceived at the time of a possible CF purchase as having net cereal excesses with reference to (excess) shortfall year 1981. There might have been 19 countries in a similar position with reference to 1982 and 13 countries with reference to 1983.

The total value of perceived net cereal excesses (cereal excesses not offset by export excesses) would have averaged approximately SDR 620 million over the period 1981-83. The total value of cereal excesses is high in 1981 and 1983 relative to 1982 because of large excesses shown for a few individual countries. One European country and one Asian country with large cereal imports accounted for more than one half of the total of net cereal excesses in 1981. Two Asian countries and one country in the Western Hemisphere with large cereal imports accounted for more than three quarters of the total of net cereal excesses in 1983. With these large cereal-importing countries excluded, the aggregate excesses in cereal import costs, not offset by excesses in export earnings, in the period 1981-83 averaged only SDR 240 million per year.

1/ Perceived export excesses are calculated on the basis of data for the WEO exercise used during the excess (shortfall) year concerned.

IV. Ex Post Calculations with Respect to Purchases Under the CF Decision (Executive Board Decision No. 6224-(79/135))

This annex examines the experience with export projections made in connection with the calculation of shortfalls and purchases under the CFF. The first section describes the sample of CF cases examined and the statistical data used. In the second section, shortfalls pertaining to the sample cases are calculated on the basis of "actual" rather than projected data for the two post-shortfall years; these shortfalls are then used to simulate purchases.

1. Sample and data

Under the CFF, shortfalls are calculated as the amount by which exports in a given year are below a trend value of exports, defined as the five-year average of exports centered on that year. Since the shortfall year must relate to the latest 12-month period for which actual data are available, the calculation of the trend value involves use of actual exports for the most recent three years, the last of which being the shortfall year, and projected exports for the following two years. 1/ The export projections are based on a judgmental method. Because the calculation of the shortfall involves export projections, there is an element of uncertainty about the amount of the shortfall. If actual exports in the two post-shortfall years turn out to be higher than projected at the time of the purchase, the shortfall based on actual data (ex post shortfall) would be larger than the shortfall calculated on the basis of projected data (ex ante shortfall); i.e., the shortfall would be underestimated. Conversely, the shortfall would be overestimated if actual exports turn out to be lower than projected. The overestimation or underestimation of the shortfall gives rise to the possibility that purchases may have been larger or smaller than the amounts that could have been justified on the basis of actual exports for the two post-shortfall years. However, for those purchases that were constrained by the quota limits, the overestimation or underestimation of shortfalls does not necessarily imply that purchases would have been different.

Since January 1976, when the judgmental method was introduced to project export earnings for the two post-shortfall years, there have been 210 CF purchases consisting of 190 in relation to shortfalls in merchandise exports, 9 in relation to shortfalls in services as well as merchandise exports, and 11 in relation to net shortfalls involving cereal imports as well as merchandise exports. Available data for the relevant

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1/ Under the early drawing provision, the shortfall year may be moved forward beyond the most recent available data by use of estimated data of up to six months for exports and up to 12 months for services and cereal imports. Members that make purchases under the early drawing procedure are subject to an expectation of prompt repurchase in the event that overcompensation is determined subsequently by use of actual rather than estimated data for the shortfall year.

post-shortfall periods enable an ex post calculation of shortfalls for 140 purchases; 132 in relation to exports shortfalls, 4 in relation to shortfalls involving services and 4 under the cereal decision. These calculations cover the CF purchases made in respect of years 1975 through 1982. Ex post calculations concerning the purchases made under the cereal decision are discussed in Section III(6) of this paper. This annex analyzes the ex post calculations for the other 136 purchases.

The calculations are based on data from two sources: the actual export data for the three years through the shortfall year as provided by members in connection with their individual CF requests, and "actual" export data for the post-shortfall periods as reported in IFS. 1/ Although the IFS provides a comprehensive and uniform data source for the ex post calculations it should be emphasized that the IFS data differ from those used to calculate the shortfalls at the time of the purchases. This is because the composition and coverage are not the same. Under existing procedures, shortfalls are calculated from export data based on customs valuation, net of re-exports, and without exception the data are provided to the staff directly by the authorities on the occasion of a CF request. The data are not subsequently updated unless the member makes a further request. In the ex post calculation of the shortfalls discussed in this section, a proxy for actual exports in the two post-shortfall years has been made on the basis of the IFS data as follows: export growth rates for the post-shortfall years implied by IFS data have been applied to derive "actual" exports for the two post-shortfall years. While this method of deriving "actual" data for the two post-shortfall years may be the least complicated, the results implied by its use should be interpreted with extreme caution. 2/

1/ The data used to calculate the 132 export shortfalls are based on the IFS data, while the data used to calculate shortfalls for the four cases involving services are based on both the IFS data and national sources. For the early drawing cases, actual export data are used for the shortfall year.

2/ In order to assess the accuracy of the method used, IFS data were compared with actual exports (i.e., actual data provided by the authorities at the time of the CF request) for a common period of the six years through the shortfall year for each of the 136 CF cases. The correlation coefficients are fairly high, exceeding 0.9 for 125 cases. However, use of the IFS data could yield shortfall results that are quite different from those corresponding to the data provided for CF requests. Such a possibility is indicated by a comparison of the ex post shortfalls based on two sets of data for the post-shortfall years: one from the IFS and the other from data that corresponds to the CF data as provided by members in subsequent CF requests. Of 14 such cases examined, the ex post shortfalls based on the two sets of data differ by more than 20 percent for 4 cases; for one of them, use of the IFS data indicate an ex post excess (SDR 17 million) while the CF data indicate an ex post shortfall (SDR 100 million).

2. Purchases based on ex post shortfalls

a. Shortfalls--ex ante versus ex post

The aggregate ex ante shortfalls for the 136 purchases (based on merchandise exports and services) amounted to SDR 13,491 million; the aggregate ex post shortfalls amounted to SDR 13,474 million. Therefore, in the aggregate there was a net overestimation amounting to SDR 17 million (Table 21). This overall outcome represents overestimation of 77 shortfalls for a total amount of SDR 4,562 million, which is roughly offset by underestimation of 59 shortfalls for SDR 4,545 million.

Table 21. Shortfalls: Ex Ante and Ex Post

	Total or Net	Overestimation	Underestimation
		(Number of cases)	
Purchases	136	77	59
		(Amount in millions of SDRs)	
Aggregate shortfalls			
Ex ante	13,491	7,595	5,896
Ex post	13,474	3,033	10,441
Ex ante minus ex post 1/	17	4,562	-4,545
	(--)	(60)	(-77)

1/ The figures in parentheses are in percent of ex ante shortfalls.

The distribution of errors in the estimation of shortfalls was highly uneven among years. For purchases made in respect of shortfalls calculated for years ended in 1975, 1977, 1978, and 1979, more shortfalls were underestimated than overestimated; for years ended in 1976, 1980, 1981, and 1982, more shortfalls were overestimated than underestimated (Table 22). The incidence of overestimation was particularly large for the 1981-82 period, when 32 shortfalls were overestimated, while only 2 shortfalls were underestimated. For the entire period, 1975-82, fairly large errors (exceeding 50 percent in absolute amounts) 1/ were about equally distributed

1/ Throughout this section, the overestimation or underestimation (difference between ex ante and ex post shortfalls) of the shortfall or the difference between the actual purchase and the purchase simulated on the basis of the ex post shortfall is measured either in SDRs or in percent (the amount of difference as percent of the ex ante amount).

Table 22. Overestimation and Underestimation of Shortfalls by Year

	Shortfall Years Ended in Various Months of								
	1975	1976	1977	1978	1979	1980	1981	1982	Total
	(Number of cases)								
Range of error in percent of ex ante shortfall									
Total	17	25	7	21	19	13	17	17	136
Overestimation	6	14	2	9	5	9	17	15	77
100 and larger	--	7	--	3	2	3	7	5	27
75 to 100	--	1	--	--	--	--	4	2	7
50 to 75	2	--	--	2	--	2	1	1	8
25 to 50	2	4	1	4	1	3	4	3	22
0 to 25	2	2	1	--	2	1	1	4	13
Underestimation	11	11	5	12	14	4	--	2	59
-25 to 0	2	--	2	1	4	1	--	1	11
-50 to -25	1	2	1	2	1	2	--	1	10
-75 to -50	3	1	--	--	5	--	--	--	9
-100 to -75	1	2	--	3	1	--	--	--	7
to -100	4	6	2	6	3	1	--	--	22
	(Amount in millions of SDRs)								
Shortfalls									
Ex ante	2,547	2,215	438	1,344	1,050	1,107	2,303	2,487	13,491
Ex post	2,736	2,444	690	2,409	1,964	912	433	1,886	13,474
Ex ante minus ex post 1/	-189	-229	-252	-1,065	-914	195	1,870	601	17
	(-7)	(-10)	(-58)	(-79)	(-87)	(18)	(81)	(24)	(--)

1/ The figures in parentheses are in percent of ex ante shortfalls.

between overestimation (42) and underestimation (38); smaller errors (less than 25 percent) were distributed also about equally between overestimation (13) and underestimation (11). For errors ranging between 25 and 50 percent, however, the instances of overestimation (22) far exceeded those of underestimation (10).

In Table 22, the ex ante shortfalls are compared with the ex post shortfall by year. For 1975-79, the ex ante shortfalls in the aggregate were smaller for each year than the ex post shortfalls (underestimation); during the three years 1980-82, the former was larger than the latter (overestimation). The amount of underestimation was particularly large for 1979 (SDR 914 million or 87 percent of the ex ante shortfalls); the amount of overestimation was particularly large for 1981 (SDR 1,870 million or 81 percent of the ex ante shortfalls).

The underestimation of the shortfalls for the 1975-79 period reflected the underprojection of exports for post-shortfall periods ended in 1977-81; conversely, the overestimation of the shortfalls for 1980-82 reflected the overprojection of exports for post-shortfall periods ended in 1981-84. In this respect, the years 1979 and 1981 stand out: for shortfalls relating to years ended in 1979, annual export growth for the post-shortfall years centered on 1980 was projected on average at 16 percent, but actual growth averaged 23 percent; by contrast, for shortfalls relating to years ended in 1981, annual export growth for the two years centered on 1982 was projected on average at 21 percent, but actual growth averaged 7 percent (Table 23). This experience was broadly consistent with the experience in projecting export earnings of the non-oil developing countries made in connection with WEO exercises (Table 23, right panel). For example, for all the non-oil developing countries, export growth for 1980 was projected at 13 percent, but actual growth was 25 percent; export growth for 1982 was projected at 15 percent, but actual growth was 2 percent.

The overestimation of shortfalls for 1981-82 is attributable to several factors, of which the underestimation of the extent and the duration of the cyclical downturn of the world economy during the 1981-82 recession was perhaps the most significant. For the 1981-82 shortfalls, the projected recovery of exports for the two post-shortfall years was substantially less than the strong export growth realized during the period of relatively high inflation in the preshortfall years (1979-80). For the 1981 and 1982 shortfalls, actual export growth for the two preceding years averaged 27 percent. Although the rates of export growth projected for the two post-shortfall years were substantially lower, at 21 percent and 8 percent respectively, actual rates of export growth turned out to be even lower than projected (Table 23).

Overestimation was also due to non-cyclical factors, such as weather. Although it is not feasible to isolate such factors precisely, it is possible to obtain a rough indication of their influence by examining the performance of agricultural exports during the relevant post-shortfall periods; prices of agricultural exports are influenced largely by weather conditions in major exporting countries, while export volumes of the

Table 23. Export Projections: Ex Ante and Ex Post

(In terms of SDRs)

Export Projections Relating to CFF Purchases								Export Projections for Non-Oil Developing Countries Relating to WEO				
Projections Made			Actual Annual Export Growth		Projected Annual Export Growth			Projections Made		Projected Annual Export Growth		
During (1)	For Two Years Ending 1/ (2)	Number of Cases (3)	Pre-Shortfall Years (4)	Shortfall Years (5)	Ex Ante (6)	Ex Post (7)	Error (8)=(6)-(7)	During (9)	For Calendar Years (10)	Ex Ante (11)	Ex Post (12)	Error (13)=(11)-(12)
			------ (In percent) ------							---- (In percent) ---		
1975	1977	17	40	-9	30	32	-2					
1976	1978	25	25	3	16	18	-2					
1977	1979	7	12	16	14	17	-3	12/1977	1978	6	7	-1
1978	1980	21	18	2	14	21	-7	2/1979	1979	12	24	-12
1979	1981	19	11	8	16	23	-7	7/1979	1980	13	25	-12
1980	1982	13	11	12	19	18	1	8/1980	1981	14	16	-2
1981	1983	17	27	-3	21	7	14	8/1981	1982	15	2	13
1982	1984	17	27	-9	8	4	4	1/1983	1983	10	6	4

1/ The center years of these two-year periods are the calendar years shown in column (10).

countries using the CFF are largely influenced by the effects of weather on their export supply. An examination of cases involving large overestimation in respect of the shortfall years ended in 1976, 1981, and 1982, reveals that adverse developments in agricultural exports, due to either export price declines or export volume declines were contributing factors to the shortfalls in the majority of the cases.

Another factor contributing to the overestimation or underestimation of shortfalls has to do with assumptions regarding the policy stance of members using the CFF during the projection period. The standard practice has been to assume that policies in effect at the time of the CF request will remain intact during the projection period. In some of the cases of overestimation, the assumption regarding policies, especially exchange rate and producer pricing, was invalidated by policies that militated against the countries' exports.

The underestimation of shortfalls for the 1975-79 period and the overestimation of shortfalls for 1980-82 raises the question as to whether a mechanical formula would have projected exports more accurately than the judgmental method. Simulation of shortfalls based on such an extrapolation formula 1/ indicates that shortfalls were more accurately estimated by the judgmental method than by the extrapolation formula. As shown in Table 24, in 104 of the 136 cases, the ex ante judgmental shortfalls were closer to the ex post shortfalls than the extrapolation shortfalls; the extrapolation shortfalls were more accurate than the judgmental shortfalls in the remaining 32 cases. In terms of amounts, the extrapolation shortfalls were, in aggregate, larger than the ex post shortfalls for all the eight years (1975-82), and were more than twice as large as the ex post shortfalls; this compares judgmental shortfalls in aggregate being virtually the same as the ex post shortfalls.

b. Simulated purchases

The ex post shortfalls discussed above have been used to simulate purchases for the sample of 136 CF cases. Among the 77 cases where shortfalls were overestimated, simulated purchases are the same as the actual purchase for 23 cases, but smaller for 54 cases (Table 25). In aggregate, the simulated purchases for these 77 cases amount to SDR 2,013 million, compared with the actual purchases of SDR 4,236 million. The difference of SDR 2,223 million is 52 percent of the actual purchases. Among the 59 cases where shortfalls were underestimated, the simulated purchases are the same as the actual purchase for 45 cases, but larger for the 14

1/ The formula projects exports for the post-shortfall period by extrapolating the export trend in the most recent six years. The formula was referred to in the 1975 decision, and shortfalls based on this formula were reported in papers on individual CF requests. However, the formula was not applied to determine the compensable shortfalls because the shortfalls it yielded were considered less reasonable than those based on the judgmental method.

others. In aggregate, the simulated purchases for the 59 cases amount to SDR 3,101 million, compared with the actual purchases of SDR 2,855 million. The difference of SDR 246 million is 9 percent of the actual purchases.

Table 24. Judgmental Versus Extrapolation Shortfalls: Relative Performance

Shortfalls in Respect of Years Ended	Purchases	No. of Cases with Smaller Errors in Shortfall	
		Judgmental	Extrapolation
	(Number of cases)		
Total	136	104	32
1975	17	12	5
1976	25	18	7
1977	7	7	--
1978	21	12	9
1979	19	17	2
1980	13	10	3
1981	17	12	5
1982	17	16	1
	(Amount of aggregate shortfalls in millions of SDRs)		
Ex ante			
Judgmental	13,491		
Extrapolation	32,699		
Ex post	13,474		

For the entire 136 cases, the simulated purchases are smaller than the actual purchases for 54 cases, the same for 68 cases, and larger for 14 cases. The simulated purchases for these 136 cases, in aggregate, amount to SDR 5,114 million, compared with the actual purchase of SDR 7,091 million. The difference of SDR 1,977 million is 28 percent of the actual purchases.

The analysis suggests that the overestimation of shortfalls has resulted in a larger downward deviation of the simulated purchases from the actual purchases than the upward deviation of the simulated purchases from the actual purchases caused by the underestimation of shortfalls. While the shortfalls were, in aggregate, underestimated, the simulated purchases based on the ex post shortfalls, are, in aggregate, smaller than the actual purchases.

Table 25. Purchases: Actual and Simulated

Simulated Purchase Compared with Actual Purchase	Total	Shortfalls: Over-estimation	Shortfalls: Under-estimation
	(Number of purchases)		
Total	136	77	59
Simulated purchase smaller	54	54	--
Simulated purchase same	68	23	45
Simulated purchase larger	14	--	14
	(Aggregate purchases in millions of SDRs)		
Total			
Actual	7,091	4,236	2,855
Simulated	5,114	2,013	3,101
Actual minus simulated 1/	1,977	2,223	-246
	(28)	(52)	(-9)
Simulated purchase smaller			
Actual	3,343	3,343	--
Simulated	1,117	1,117	--
Actual minus simulated 1/	2,226	2,226	--
	(67)	(67)	(--)
Simulated purchase the same 2/			
Actual	3,385	893	2,492
Simulated	3,388	896	2,492
Actual minus simulated 1/	-3	-3	--
	(--)	(--)	(--)
Simulated purchase larger			
Actual	363	--	363
Simulated	609	--	609
Actual minus simulated 1/	-246	--	-246
	(-67)	(--)	(-67)

1/ The figures in parentheses are in percent of actual purchases.

2/ The difference, in absolute value, between the actual and simulated purchase less than 2 percent of the actual purchase.

The distribution of the difference between the actual and the simulated purchases was particularly uneven for shortfall years ended in 1976, 1981, and 1982. Cases where the simulated purchase is smaller than the actual purchase by more than 50 percent of the actual purchase were 8 for 1976, 11 for 1981, and 7 for 1982 (Table 26). The difference between the actual and the simulated purchases was particularly large for the purchases made in respect of shortfall years ended in 1981 and 1982; on a net basis, the difference amounted to SDR 843 million for 1981 and SDR 612 million for 1982, equivalent, respectively, to 75 percent and 37 percent of the aggregate actual purchases made in those two years.

The unbalanced distribution of the difference between the actual and simulated purchases, in contrast to the rather balanced distribution of the overestimation and underestimation of shortfalls, resulted from a number of factors. During the three years, 1975, 1976, and 1978, for which a large number of shortfalls were underestimated, the ex post shortfalls turned out to be much larger than the ex ante shortfalls. This outcome was partly due to the fact that the 1975 world recession, although deep, was relatively brief; the sharp export recovery that followed that recession had the effect of raising the shortfalls measured on the basis of actual data. In contrast, shortfalls in 1981-82 were overestimated because the 1981-82 recession lasted much longer than expected and, as noted above, the recovery in exports did not materialize as projected. In addition, the period of overestimation of shortfalls in 1981-82 coincided with much larger access under the CFF than during the earlier years when shortfalls were underestimated. As a consequence, the quota limits were the constraining factor for a relatively large number of purchases in respect of the shortfalls in 1975, 1976, and 1978; therefore, the purchases were estimated exactly in many of these cases. In contrast, the size of the shortfalls was the limiting factor for a relatively large number of purchases in respect of the shortfalls in 1980-82; therefore, the overestimation of the shortfalls for those years resulted in a large number of purchases that would have been smaller had actual exports during the post-shortfall periods been known. 1/

c. Timing factor

In the preceding analysis, the ex ante shortfalls were compared with ex post shortfalls, and the implications of the errors in estimating shortfalls for the purchases were examined strictly on the basis of the shortfall years as defined at the time the purchases were made. As discussed above, the export recovery from the 1981-82 recession took place

1/ The average size of the ex ante shortfalls for years ended in 1975, 1976, and 1978 was SDR 103 million; the average size of those for years ended in 1980-82 was SDR 131 million. The latter was 28 percent larger than the former. However, for all potential CF countries CF access in absolute terms was 146 percent larger during 1980-82 than during 1975-78. Consequently, 34 percent of purchases for the 1981-82 period were constrained by shortfalls, whereas only 16 percent of the purchases for 1975, 1976, and 1978 were constrained by shortfalls.

Table 26. Actual and Simulated Purchases by Year

Simulated Purchase Compared with Actual Purchase	Shortfall Years Ended in Various Months of 1975	1976	1977	1978	1979	1980	1981	1982	Total
					(Number of cases)				
Difference between actual and simulated purchase in percent of actual purchase									
Total	17	25	7	21	19	13	17	17	136
Simulated purchases smaller	3	9	--	5	3	6	16	12	54
50 and over	--	8	--	3	2	4	11	7	35
40 to 50	1	--	--	--	--	1	1	1	4
30 to 40	2	1	--	--	--	--	1	1	5
20 to 30	--	--	--	--	--	--	1	1	2
10 to 20	--	--	--	2	1	1	2	1	7
2 to 10	--	--	--	--	--	--	--	1	1
Simulated purchases the same 1/	12	14	6	12	13	6	1	4	68
Simulated purchases larger	2	2	1	4	3	1	--	1	14
-10 to -2	--	--	--	--	1	--	--	--	1
-20 to -10	--	--	--	--	--	--	--	--	--
-30 to -20	--	--	--	1	--	--	--	--	1
-40 to -30	2	--	--	--	2	1	--	--	5
-50 to -40	--	--	--	1	--	--	--	1	2
to -50	--	2	1	2	--	--	--	--	5
					(In millions of SDRs)				
Purchases									
Actual	675	1,239	231	694	718	739	1,126	1,669	7,091
Simulated	616	971	329	652	712	493	283	1,057	5,114
Actual minus simulated 2/	59	268	-98	42	6	246	843	612	1,977
	(9)	(22)	(-42)	(6)	(1)	(33)	(75)	(37)	(28)

1/ The difference, in absolute value, between the actual and simulated purchases less than 2 percent of the actual purchase.

2/ The figures in parentheses are in percent of the actual purchases.

later than had been predicted at the time of the purchases; consequently, projected exports turned out to be optimistic, and the shortfalls were overestimated. In retrospect, larger shortfalls evolved in respect of later periods than those on which the purchases were based. In this connection, it is worth noting that most, if not all, the 1981-82 cases, where the shortfalls (and purchases) were overestimated, experienced (actual) shortfalls in the course of the recession which could have supported purchases equal to, or even larger than, the purchases made. This observation, however, should not be interpreted as implying that the members concerned would have qualified to make such purchases, since a request for a purchase must be assessed on its own merits at the time it is made. Nevertheless, to the extent that the members whose shortfalls were, in retrospect, overestimated had met the requirements for use of the CF at the time they made their purchases, it is relevant to provide an ex post examination of the purchases that these members could have qualified for on the basis of shortfalls relating to more recent periods than the original periods. Specifically, since shortfall years lag the date of purchase by up to six months, moving the shortfall years forward by six months provides an indication of the size of the shortfall that the members concerned were experiencing around the time of the purchase. 1/

Based on the actual data now available, combined in some cases with the latest projections of exports, the shortfall years associated with 36 purchases which exceed significantly the simulated purchases based on ex post shortfalls have been moved forward by three months and six months beyond the original shortfall years, and the resulting shortfalls have been used to simulate purchases during 1975-82 (Table 27). For 15 of the 36 cases, simulated purchases for later shortfall years are larger than the simulated purchases for the original shortfall years, particularly for 1981-82. For those two years taken together, members would have qualified to purchase SDR 619 million more than the amount indicated by the ex post shortfalls had their (ex post) shortfalls been based on years moved forward to correspond closely to the dates on which they made their purchases. This amount represents 42 percent of the difference between the actual purchases and the simulated purchases for 1981-82. 2/ Consequently, a large part of the differences between actual and simulated purchases can be attributed to timing considerations.

1/ Requests could have been based on shortfall years covering later periods through estimation of exports under the early drawing procedure.

2/ The percentage of the difference during 1981-82 accounted for by the timing factor increases as the hypothetical shortfall years are moved forward. The difference due to the timing factor increases to about 60 percent by moving forward the shortfall years by 12 months, and to about 80 percent by moving forward the shortfall years by 24 months.

Table 27. Timing Factor: Profiles of Shortfalls Subsequent to Purchase 1/

	Shortfall Years Ended in Various Months of								
	1975	1976	1977	1978	1979	1980	1981	1982	Total
1. Number of cases	2	6	--	2	2	4	11	9	36
	(In millions of SDRs)								
2. Shortfall years as defined at the time of purchase									
2.1 Shortfalls									
Ex ante	211	597	--	98	53	344	1,949	1,101	4,353
Ex post	111	213	--	--	--	121	157	278	880
2.2 Purchases									
Actual	184	476	--	88	46	344	982	868	2,988
Simulated	111	213	--	--	--	121	157	278	880
2.3 Difference in purchase									
Actual minus simulated: net for all 136 cases	59	268	-98	42	6	246	843	612	1,977
Cases of major differences	73	263	--	88	46	223	825	590	2,108
Other cases	-14	5	-98	-46	-40	23	18	22	-130
3. Modified shortfall years 2/									
a. Number of cases in which simulated shortfalls are									
3.1 Smaller	1	4	--	2	2	3	5	4	21
3.2 Larger	1	2	--	--	--	1	6	5	15
than ex post shortfall in (2.1)									
b. Amount									
3.3 Simulated shortfalls	244	312	--	--	--	150	749	689	2,144
3.4 Simulated purchases	155	263	--	--	--	150	510	544	1,622
3.5 Difference between actual and simulated purchases in (2.3) accounted for by timing factor	44	50	--	--	--	29	353	266	742

1/ Based on the cases of major differences are defined as those for which the difference between actual and simulated purchase exceeds SDR 10 million and 10 percent of the actual purchase.

2/ Shortfall years advanced by six months or less.