The world coffee market and the international coffee agreement

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ABSTRACT

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The World Coffee Market and the International Coffee Agreement
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Based on research done at the International Coffee Organization, this report presents a descriptive analysis of the world coffee market. The emphasis is on the coffee price, which is studied from the angles of production, consumption, trade and the International Coffee Agreement.

The Agreement - a commodity agreement operating with export quotas - can be regarded as a consumer-supported producers' cartel, originally dominated by Brazil. Brazil's declining share of production as well as of stocks, has exacerbated the already difficult decision making on quotas and prices. The problems of the ICA, including the allocation of quotas, the increase of the non-quota market as well as the shortfalls and undershipments, have hampered consensus among both producers and consumers. However, it is expected that producing countries will try to regulate the market, even in the absence of a consumer-supported agreement.

Coffee / International Coffee Agreement / Export quotas /
Commodity Agreement / International agricultural trade

PREFACE

Many people have contributed in one way or another to this report, which aims at clarifying the complex economical and political nature of the world coffee market. We would like to thank mr M. van de Steene of the International Coffee Organization who most generously allowed the first author to fulfil a practical period at the ICO. Mr A. Rengifo and dr O. Akoto of the ICO kindly gave valuable time to discuss the various aspects of coffee, and mrs K. Winchester of the ICO library was most helpful in making the literature accessible for research.

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Our thanks are due to mrs M. van Hunnik for typing the manuscript, mr P. Holleman for drawing the graphs and mrs M.C. Rigg for greatly improving the English.

Although many people have contributed, the responsibility for the report lies wholly with the authors.

September 1987,

M.Th.A. Pieterse
H.J. Silvis

CONTENTS

1. INTRODUCTION

Coffee is the most important tropical commodity in international agricultural trade. This report presents a descriptive analysis of the international coffee market and its regulation by the International Coffee Agreement (ICA). The focus of attention is on the price of coffee. Many questions can be raised about this. What are its determinants? Which characteristics of supply and demand can explain its short term and long term development? What role is played by the International Coffee Agreement? How does this agreement regulate the market? With what success? What kind of problems are encountered? For which problems has a solution been found?

The research on these questions was largely done at the International Coffee Organization (ICO) in London, where literature was researched in the extensive library, available statistics were collected and interviews were held with staff members and representatives of member countries. The findings of the research initially served as an M.Sc. thesis for Agricultural Economics and Policy (Pieterse, 1987).

From an international perspective, production and consumption of coffee are clearly separated. Production is restricted to the (sub)tropical regions of the world, whereas consumption is concentrated in Western Europe, North America and Japan. A large number of exporting countries is heavily dependent on coffee for the foreign exchange earnings. In 1985, coffee exports constituted more than 25 percent of the total export revenues of sixteen countries (see table 1.1). On the other hand, imports of coffee form only a minor share of the total value of imports of industrialized countries. However, in these countries, coffee-drinking forms a very important element in the dominant lifestyle.

Coffee prices on the international market tend to be very volatile. Apart from monetary factors that may destabilize commodity markets collectively, the coffee market has to cope with cyclical imbalances between supply and demand and with occasional harvest failure. A frost in Brazil,

Table 1.1. Export value of coffee as a percentage of total exports for selected countries in 1985.

Brazil	10.3	Cameroon	29.0
Colombia	50.9	Madagascar	38.2
Cote d'Ivoire	24.7	Burundi	96.6
Indonesia	2.9	Haiti	29.2
Costa Rica	33.5	Rwanda	66.2[1]
El Salvador	73.0	Sierra Leone	22.1
Guatemala	41.4	Uganda	94.2
Honduras	24.4	Central African Republic	45.8
Kenya	31.3	Nicaragua	41.4
Tanzania	38.4	India	3.1
Ethiopia	49.8	Mexico	2.5
Benin	55.5		

[1] 1984 figure.

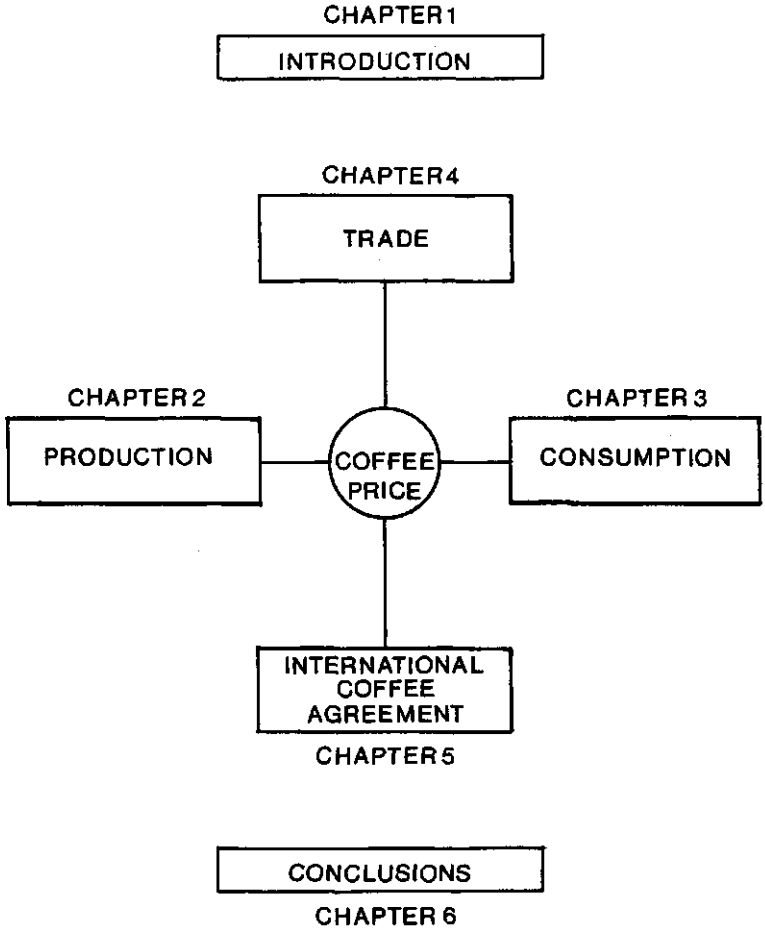
Source: ICO, Quarterly Statistical Bulletin 36, 1986.

the main producing country, can have a considerable impact on total supply. This can lead to large price reactions, often aggravated by speculative behaviour on the futures market.

The stabilization of coffee prices is the prime objective of the International Coffee Agreement (ICA). This producer and consumer based agreement was first established in 1962 and was renewed in 1968, 1976 and 1983. With a number of interruptions, the ICA has regulated the world coffee trade by means of export quotas which restrict members' exports to importing member markets. Currently the agreement covers 99% of production and some 85% of global consumption. The ICA numbers seventy-five member countries, fifty producing countries and twenty-five consuming countries.

Although the Coffee Agreement has certain unique features, it is not the only international commodity agreement. In the 1947 Charter of Havana, the members of the United Nations agreed to strive for international commodity agreements between producing and consuming countries.

Figure 1.1. Schematic representation of the structure of this report.



The objective was to reduce commodity price volatility. An important reason for this was to help developing countries, which had to cope with severely fluctuating export earnings.
Two systems of price stabilization were described. Supply was to be controlled either by export quotas or by a buffer stock agreement, while still allowing market forces to work in the freest possible sense. Regulation was only allowed when the balancing of supply could not be effectuated by normal market forces alone. Agreements were to aim at a reasonable degree of price stability on the basis of such prices as were fair to the consumer and remunerative for the efficient producer, and expansion of production was to take place by the most efficient producer. Commodity agreements were meant to stabilize, not to increase prices. Increases in income for exporting countries were to be reached via growth in demand. Voting rights in the commodity organizations were to be distributed equally among producers and consumers. And finally, the agreements were to be jointly administrated.

The framework provided by the Charter of Havana has led to a number of agreements of which the most important are for wheat, sugar, tin, rubber, cocoa and coffee. In 1964 the specific task of promoting and organizing commodity agreements was taken up by the newly established Unctad, which was to provide a platform for the debate on relations between developed and developing countries. In 1976 in the search to establish a Common Fund, the Integrated Program for Commodities was proposed. This fund was to serve as a basis for the financing of buffer stock activities for ten 'core' (most important) commodities. However, this proposal for the benefit of developing countries has still not been ratified by the industrialized countries. Taking into consideration the changes in the international political appreciation of commodity agreements, the Integrated Program must therefore be considered a failure.

The only three major commodity agreements, currently functioning are those for cocoa, rubber and coffee. The Tin Agreement collapsed in 1985 because of financial problems, and the Sugar Agreement, operating with export quotas, was not renewed in 1984 because its coverage of the world market was too small. The Cocoa and the Rubber Agreements both operate by means of a buffer stock. The Rubber Agreement was first established

in 1979. The Cocoa Agreement is much older. In 1986 its members decided on a fourth agreement. With the exception of the United States, all important producing and consuming countries are members. At the moment, the Coffee Agreement is the only international commodity agreement that operates through export quotas. This statement needs some qualification, in that, at the time of writing, the member countries have not been able to decide whether to implement the quotas or not in spite of low coffee prices. This issue is dealt with in Chapter four.

The structure of the report is quite simple. A schematic representation of the structure is given in Figure 1.1. This shows that the main focus is on the price of coffee. In the next four chapters, this price is studied from the angles of production, consumption, trade and the Coffee Agreement.

Chapter Two reviews the characteristics and historical developments of production and marketing. Chapter Three is devoted to consumption and processing of coffee in the industrialized countries. The bridge between production and consumption is formed by international trade, and Chapter Four describes the actors and channels via which this trade is conducted. Many elements of production, consumption and trade are helpful in the analysis of the International Coffee Agreement, as is seen in Chapter Five which explains how the Agreement is operated. There is also a review of international interventions in the coffee market. The evolution of the Agreement to its present form is marked by the problems which were encountered in these undertakings. Disputes between members of the Agreement are analyzed and the chapter concludes with an assessment. Finally, in Chapter Six the conclusions of this study are summarized.

2. PRODUCTION

2.1 Introduction

How do production and marketing in producing countries determine world coffee prices? How do world market prices of coffee influence production and marketing in these countries? These questions form the subject of this chapter. A survey of the botany and ecology of the two main types of coffee, and the areas of the world where they are cultivated, is followed by a brief analysis of production systems and production costs. Next the volume and structure of world production are discussed, and the marketing systems in producing countries are described, with special attention to the three predominant organization forms. Hereafter the relation between world market prices and producer prices is analyzed. Finally there is a discussion of short and long term production characteristics of coffee.

2.2 Botany and ecology

Coffee is a tree crop. The first harvest is about three to four years after planting and it takes two to three years more before the tree reaches its normal yield. Yields normally start to decline about fifteen years after planting, but under good management, the drop in production is not rapid, and the tree can have an economic life of up to fifty years.

The quality of the coffee can vary greatly. This is not only because of the type of coffee but is also caused by natural conditions and methods of handling and processing. The two main types of coffee are Arabica and Robusta, and production areas are determined by the different climatic requirements of the two species.

Arabica is responsible for 78% of world production. It is an upland species, requiring an average annual temperature of between 18-25°C,

with minimum temperatures around 13°C and maximum temperatures not exceeding 30°C. On the equator Arabica is found between 1700 and 2500 m, but in Brazil, at a latitude of 24°, it can be grown at an altitude of only 100-200 m. Arabica is very susceptible to frosts, which can damage not only the current crop, but also future crops if the tree itself is affected. Arabica needs a rainfall of 1500-2500 mm well distributed through the year with a drier period of two to three months (De Graaff, 1986; p. 29). In low rainfall areas, irrigation is required or arrangements need to be made to conserve soil moisture. Too much rainfall is more easily tolerated. The tree is rather susceptible to diseases (leaf rust) which necessitates spraying with herbicides. Often shade trees are planted to conserve a certain stable microclimate, but at higher altitudes with intensive cultivation and optimum inputs, higher yields are obtained without shade.

Arabica conditions are particularly well met in Central America, in countries along the Andes, in some parts of Brazil, and some areas in East Africa and Madagascar. Only a few areas in Asia (for example India and Indonesia) possess the required conditions. What is remarkable is the low suitability of large (especially southern) areas in Brazil, which results in periodic crop failures.

Robusta is the second major type of coffee, with 22% of world production. The tree shows a wider adaptability than Arabica, but thrives best under warm equatorial climates with an average temperature fo 24-26°C. It grows best at lower altitudes (300-800 m), and requires a high rate of humidity all the year round. Optimum rainfall of 1700 mm, varying between 1000 and 2500 mm/year should be well spread over 9-10 months. The Robusta coffee tree is hardier than Arabica, but it suffers from root rot, which is difficult to control. A major pest is the coffee berry borer, and can affect the berries even after drying. Shade trees are planted to avoid extreme ecological conditions such as too much or too little sun and humidity (De Graaff, 1986; p.29).

Suitable zones for Robusta are found over large areas of West Africa, the lower regions of Central and South America and the Caribbean as well as large parts of South East Asia.

2.3 Production systems and cost of production

Systems of coffee production are very diverse, ranging from large estates to smallholder units. In Brazil, coffee is mainly produced by large specialized coffee estates, 47% of its production coming from farms larger than 100 ha (De Graaff, 1986; p. 112). In Africa, coffee is mainly produced by diversified smallholders, with an average farm size of 2 ha. In the other Latin American countries medium sized holdings between 5 and 30 ha predominate. A survey of the average yield and farm size of coffee producers in the world is presented in Table 2.1.

In many countries however, there exists a dual production structure of large estates with high yields, high input cost production next to smallholdings with low cost production. In Africa there is a tendency for smallholder production to increase in importance, and this is reflected in a declining output share of estate production. In Zaïre, Kenya and Tanzania, for example, plantations used to be more important (Dinham and Hines, 1983; p. 54), but new production units are predominantly set up by small farmers.

For production factors and inputs, material inputs have become increasingly important, especially for intensively cultivated Arabica. However, the most prominent production factors in coffee production are still land and labour.

The two factors are combined in varying ways according to their relative scarcity. Whereas smallholder production is typically labour intensive, estate production in Brazil is labour extensive and seasonal labour is hired during harvest periods. Material inputs (fertilizer, pesticides) are rarely used by African smallholders.

Mechanization has taken place in estates in Brazil, where tractor inputs are used for land preparation and mechanical harvesting takes place by means of tree shaking. Labour requirements for harvesting usually constitute half of the total labour input (De Graaff, 1986; p. 77).

Cultivation practices are largely determined by rainfall. In areas of low rainfall either mulching (by smallholders) or supplementary irrigation is required. In areas with high rainfall, weed control is a major activity, requiring considerable labour inputs or herbicides.

Table 2.1. Average yield and farm size of coffee producers in the world (1979-1980).

	Yield (kg/ha)	Size of plantation (ha)	Approx. area under small holdings (%)
World	540		
S. America	600	6	n.a.[1]
Brazil	600	11	n.a.
Colombia	700	4	n.a.
Ecuador	350	4	n.a.
Peru	600	3	90
C. America	750	3	n.a.
Costa Rica	1100	3	n.a.
El Salvador	1100	6	60
Guatemala	700	15	20
Haïti	300	1	99
Mexico	600	4	70
Africa	350	2	90
Angola	200	30	10
Cameroon	400	3	90
Ethiopia	300	0.2	95
Ivory Coast	350	2	95
Kenya	700	0.5	70
Madagascar	400	1	90
Rwanda	700	0.1	99
Uganda	500	0.5	95
Zaire	350	5	30
Asia and Oceania	700	3	70
India	700	3	n.a.
Indonesia	600	0.5	80
Philippines	1100	4	60
Papua New Guinea	1000	5	50

[1] n.a. - not applicable: no clear cut difference between large and small farm sectors. Source: De Graaff, 1986; p. 33.

These inputs can be avoided by interplanting with annual crops or by growing the coffee shrubs under shade trees (bananas).

Most coffee farmers are usually diversified, as labour requirements for coffee show distinct peaks. Smallholder production but also production on medium and large estates in Latin America are complemented by staple food production and, for larger farms, extensive crops or livestock production.

Table 2.2. Yield, average production cost and prices to growers, for selected countries, in 1982.

Country	Yield[1]	Average cost per kg[1] (US $)	Average price paid to grower per kg[2] (US $)
Brazil	600	1.20	1.38
Colombia	800	1.70	1.74
Costa Rica	1200	1.10	1.24
Kenya			
estates	1100	1.95	2.89
smallholders	600	1.30	2.89
Rwanda	700	1.20	2.62
Cameroon			
Arabica	200	1.70	1.02
Robusta	400	0.90	1.02
Ivory Coast	300	0.90	0.88
Indonesia	500	0.80	1.10

[1] De Graaff, 1986.

[2] ICO QSB 36, 1986.

It is difficult to assess average production costs for coffee. These can be divided into the four main categories of labour, land, material inputs and other costs, including depreciation on equipment and an annuity on establishment costs. On average, labour accounts for at least half of the

production costs. Establishment costs of a coffee plantation cannot be neglected, and also consist largely of labour investments. For the first three to five years, no yields are obtained from the trees, whereas labour inputs are required for cultivation. As labour costs are hard to measure, data on production costs must be handled with care. In Table 2.2 some average cost figures, estimated by De Graaff, are presented. These figures are compared with the average price paid to the grower.

From the figures it may not be concluded that coffee production is always a very profitable activity. De Graaff (1986; p. 81) concluded that, in general, net returns are low and in years of average and low prices, net returns in several countries are insufficient for proper maintenance and reinvestment.

2.4 Volume and structure of world production

In recent years total world coffee production has not greatly increased, as is indicated in Table 2.3.

Table 2.3. Total world production of coffee, crop years 1978/79 to 1985/86.

Crop year	Total world production (000 bags)
1978/79	81.438
1979/80	76.578
1980/81	99.192
1981/82	82.650
1982/83	94.664
1983/84	82.839
1984/85	96.757
1985/86	84.551

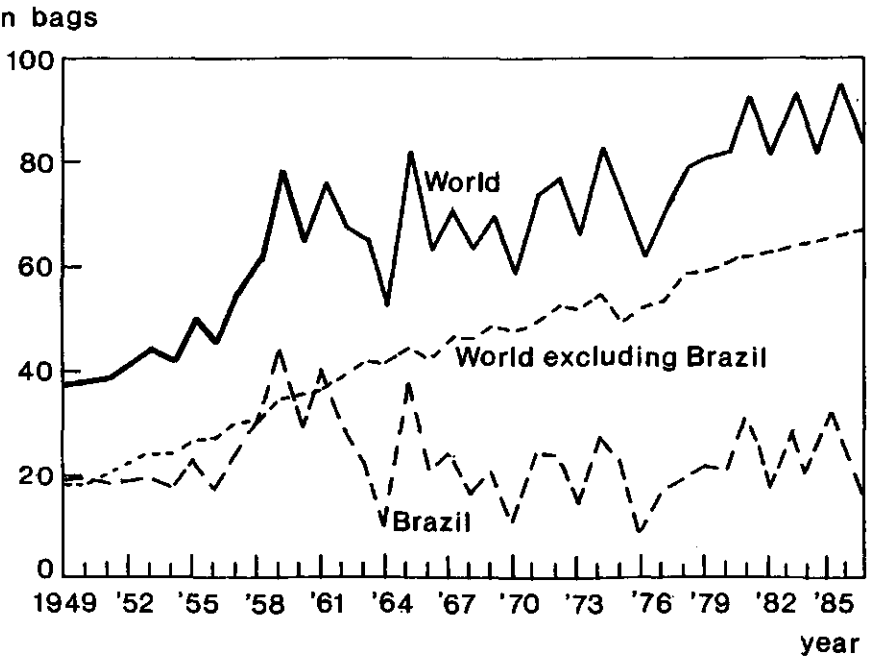
Source: ICO QSB 35, 1986.

More remarkable is the instability of total world production. On close examination however, production fluctuations in Brazil seem to have been almost solely responsible, as world production volume, excluding Brazil, has been rather stable.

The incidence of frosts and droughts in Brazil has thus strongly affected world output levels. Table 2.4 gives a survey of registered frosts in coffee-producing regions. The very grave frost of 1975 was such that the production in consecutive years was also affected as the trees themselves were damaged, and not only as with minor frosts, the berries, flowers or leaves. The period from May to September (the Brazilian winter) is most prone to frosts.

The frosts in major Brazilian producing areas have caused parallel fluctuation in world production. The correlation coefficient between annual production fluctuations in Brazil and the world amounted to 0.93 from 1960 until 1980 (Akiyama, 1982; p.7). This correlation is clearly demonstrated in Figure 2.1.

Figure 2.1. World and Brazil's coffee production



Source: Akiyama, 1982.

This figure illustrates an other feature of world coffee production. Brazil used to hold a very large share of world production, and this share has been steadily eroding. Other countries have increased their share in the market that has grown considerably since the Second World War.

Table 2.4. Registered frosts in coffee regions of Brazil, 1931 to 1985.

Date	Intensity	Interval in years: Moderate	Grave	Very grave
29 Jun 1931	moderate	20 1/	19 2/	13 3/
14 Jul 1933	moderate	2	-	-
12 Jun 1942	grave	-	30	-
15 Sep 1943	moderate	10	-	-
5 Jul 1953	grave	-	11	-
2 Aug 1955	grave	-	2	-
21 Jul 1957	grave	-	2	-
7 Jul 1962	moderate	19	-	-
22 Jun 1963	moderate	1	-	-
28 Jun 1964	moderate	1	-	-
21 Aug 1965	moderate	1	-	-
6 Aug 1966	grave	-	9	-
8 Jun 1967	moderate	1	-	-
11 Jul 1969	moderate	3	-	-
9 Jul 1972	moderate	3	-	-
18 Jul 1975	very grave	-	-	44
15 Aug 1978	moderate	6	-	-
31 May 1979	moderate	-	-	-
20 Jul 1981	moderate	3	-	-
1985	(number of years since last frost)	(4)	(19)	(10)

1/ June 23rd, 1911
2/ September 3rd, 1912
3/ June 25, 1918

Source: Instituto Agronomico Campina, Brazil.

However, Latin America is still the dominant production area with two-thirds of world production in 1984/ 85. Brazil ranks first with 33%, and is followed by Colombia with 11% of world production. Other large coffee

Table 2.5. Coffee production of selected countries, crop years 1978/79 to 1985/86 (million bags of 60 kg).

	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86
Brazil	21.3	17.4	34.4	18.7	28.0	21.4	32.6	16.7
Colombia	12.7	12.2	13.1	14.5	12.3	13.0	11.0	12.3
Indonesia	4.8	5.0	5.8	4.8	5.9	6.2	6.0	5.7
Ivory Coast	4.9	4.1	6.2	4.2	5.0	1.7	4.9	5.0
Mexico	4.4	3.7	3.9	4.1	4.6	4.8	4.3	4.6
Ethiopia	3.2	3.1	3.3	3.2	3.7	3.9	2.3	3.1
Guatemala	2.8	2.5	2.7	2.6	2.5	2.4	2.8	2.8
Cameroon	1.6	1.7	2.0	2.0	2.0	1.0	1.6	2.5
El Salvador	3.4	3.0	3.2	2.8	3.2	3.2	2.2	2.4
India	1.8	2.6	2.0	2.5	2.2	1.5	4.0	2.3
Kenya	1.2	1.7	1.7	1.5	1.5	2.0	1.6	2.2

Source: ICO QSB 35, 1986.

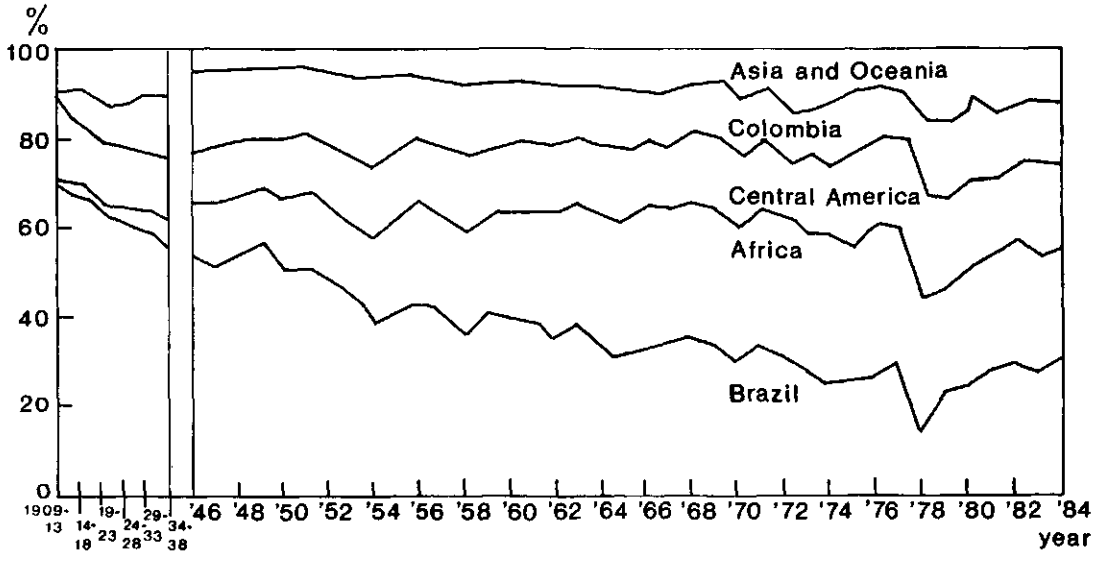
producers are Indonesia, the Ivory Coast, Mexico, Ethiopia, Guatamala, Cameroon, El Salvador, India and Kenya. Together these eleven countries account for almost 80% of total world coffee production. Recent production data for these countries are given in Table 2.5.

From this table it must be concluded that Brazil had a very low production figure in 1985/86. Its share of world production fell even below 20%. If this figure is compared with historical data, the fall of the Brazilian share of the market is dramatic. It is interesting to take a closer look at this development.

At the beginning of this century, in 1906, Brazil had a production share of 84.5%, and an export market share of 70%. Because of this high market share, and the low prices on the world market, Brazil started unilateral action to raise prices. These actions took the form of export restrictions and national stockpiling. The policy was called 'valorizacion', to value high. Brazil pursued this policy until 1940, to be followed by international interventions either coordinated by a group of producers or by a group of producers and consumers.

Brazil's policy has certainly contributed to the gradual decline of its market share (see Figure 2.2.). The unilateral retaining of coffee from the world market, in order to sustain world market prices, stimulated competitors such as Colombia and the Central American countries, which lie close to the most important consumer the US, to take advantage of it and increase production. At the same time European powers were encouraging supplies from their African colonies, thus securing their supply of coffee and lessening their dependence on Latin American coffee.

Figure 2.2. Export market shares on the world coffee market, 1909-1984.



Source: Geer, 1972; ICO QSB 36, 1986.

In the late 1950's and early 60's the fall of the Brazilian share of the market speeded up. World production then increased at an unprecedented rate of 20 percent per annum. Although Brazil initially also attained higher production levels, in the long run it could not sustain them. In 1962 the conclusion of the first International Coffee Agreement was to freeze export market shares by export quota. But even under this protection Brazil could not hold its traditional position. In the Appendix a more detailed account is presented of production developments this century.

2.5 Marketing in producing countries: systems and producer prices

Most of the coffee-producing countries export virtually all the coffee they grow. Brazil, India, Indonesia and Mexico are among the few countries where domestic consumption is substantial. As with production systems there is a large diversity among producing countries in their marketing systems. This is not only caused by differences in production systems (smallholders/estates), but also by differences in the way of processing (washed or unwashed). Moreover, several institutional factors also contribute.

For the purpose of explanation, marketing systems can be said to consist of the marketing channel on the one hand, and the so-called marketing authority on the other. For the latter, governments influence the marketing processes. Government influence, in whatever form, is necessarily large because of the imposition of export quotas within the framework of the ICA. In some countries a large share of government revenues is formed by taxes on coffee exports. This also explains high government involvement.

Originally the marketing channel had a simple structure. In most countries production was undertaken by large farmers and businessmen, who either took care of the export themselves or sold their product to international traders. Gradually, however, most marketing channels have become more complex. The usual marketing channel now consists of growers, processors, brokers and other intermediairies, domestic roast-

ers, wholesalers, retailers and exporters. Members of each group may perform more than one marketing function. Some growers still handle coffee from harvest through to export, and some exporters handle both the processing and exporting functions.

Marketing channels differ between the various countries according to the commercial type of coffee, the size and type of production units and the methods of processing. Unwashed Arabica and Robusta only need sun drying (or mechanical drying) which generally takes place on the farms. The removal of the husks by hand or machine is undertaken either by farmers, cooperatives, private millers as in Brazil, or is done in the village as in Indonesia. In the Ivory Coast centralized processing plants do all the processing and marketing of Robusta coffee. The washed Arabica from Central America, Colombia, Kenya and Tanzania has to be processed by fermentation and requires washing facilities. This is undertaken by farmers if the scale of production justifies own installations (Colombia) or by cooperatives if only small quantities are produced per farmer, as by the smallholders in Kenya. These cooperatives may also engage in further marketing and export and may provide members with loans and storage facilities. The scale of farming is often determinant for the participation of the farmer in further processing and marketing, as is the existence of governmental and private facilities.

In conclusion, it should be noticed that marketing channels, however diverse, are usually long. This holds particularly for smallholder production, where the many institutions involved in the marketing operations contribute to considerable trade margins (De Graaff, 1986; p. 55). These margins are also influenced by governmental policies, operating through marketing authorities.

Marketing authorities can be divided in three categories (Unctad, 1982; p. 40):

1. the 'marketing board'-type, prevalent in English-speaking coffee-producing countries (e.g. Kenya, Nigeria, India);
2. the 'caisse de stabilisation'-type found in many Francophone coffee-producing countries (e.g. Côte d' Ivoire, Cameroon, Madagascar);
3. the quasi governmental coffee producer's associations and 'institutes' common in Latin America (e.g. Brazil, Colombia, Mexico).

The 'marketing boards' usually have a legal monopoly on the purchase of the entire coffee crop. All coffee is sold to the board, which is then responsible for grading and storing, until the coffee is resold on the export market. The board usually makes an initial payment to producers based on the average price actually received. What margin is retained is a matter of national policy. In Kenya, the policy is to maximize returns to growers, while in Tanzania the margin between purchase and selling price is an important source of government revenue.

The 'caisse de stabilisation'-type of agency usually does not take physical posession of the coffee. It first establishes a price which private coffee buyers must pay to coffee growers, and then absorbs the difference between that price and the export price the exporting buyers receive. It fixes thus transport and marketing margins for purchasing agents and exporters. Guaranteed grower prices are usually substantially below the world market price. In some cases the agency regulates a number of other crops besides coffee, and can operate in such a way that net revenues from its activity with established crops (such as coffee) encourage expanded production of other crops.

The third type of marketing authority is the 'coffee institute'-type. This coffee marketing authority generally establishes a guaranteed minimum price at which growers can sell their coffeebeans to one of the warehouses spread through the country. Pricing arrangements between growers and private exporters however are usually left to the free market if a more advantageous price is quoted here. The IBC (Brazil) and FNC (Colombia) are further engaged in various activities around the production of coffee. Besides export and control of private export by means of the setting of minimum export prices, they undertake research, the storage of excess production which they buy at the guaranteed minimum price and the supply at the national market. They provide technical assistance and credit to farmers and coordinate the national coffee policy in close cooperation with the government. On average, farmers in Colombia and Brazil received 47% and 42% of the world market price in 1984, which is not low compared with what farmers in many African countries receive. However, there are also countries that pay higher producer prices.

Table 2.6. Prices paid to growers in selected countries (1978-1984)* (US$ cts/lb)

Country	1978	1979	1980	1981	1982	1983	1984
Brazil	75	72	48	53	60	42	53
Colombia	84	80	83	78	78	75	70
Indonesia	84	80	68	38	45	51	39
Ivory Coast	51	56	64	50	41	37	37
Mexico	96	97	109	95	68	56	72
Guatemala	93	91	97	82	87	93	114
Cameroon	52	42	47	53	46	41	40
El Salvador	92	109	73	59	68	63	71
Kenya	154	160	147	115	121	120	112

* Years ending September. (1 lb = 0.453 kg).
Source: ICO QSB, various issues.

Table 2.6 is a survey of prices paid to growers. It is clear that large differences exist in price levels at the farm level. The interpretation of these price differences, however, is rather difficult. It is certainly not only a matter of commercial margins, public taxes and pricing policies of the marketing authorities. Also qualitiy differences are reflected in the data and comparison is further complicated by changes in the exchange rate.

Another view of producer prices is presented in Table 2.7, which relates prices paid to growers to world market prices.

The fact that Kenya maximizes returns to producers is clearly reflected in its high figures. On the other side of the spectrum are the Ivory Coast and Cameroon, where the 'caisse de stabilisation'-type of agencies fix comparatively high margins.

Table 2.7. Prices paid to growers as a percentage of world market price (Arabica or Robusta price as appropriate) for selected countries (1978-1984)*.

Country	1978	1979	1980	1981	1982	1983	1984
Brazil	46	42	44	42	43	32	37
Colombia	52	46	54	61	56	57	48
Indonesia	57	48	46	36	40	41	28
Ivory Coast	34	34	44	48	37	29	26
Mexico	59	56	71	74	49	42	50
Guatemala	57	53	63	64	63	70	79
Cameroon	36	37	46	52	41	33	29
El Salvador	57	63	47	46	49	48	49
Kenya	95	92	95	90	86	91	78

* Years ending September.
Source: ICO QSB, various issues.

2.6 Production characteristics

Production of coffee in producing countries is determined by both the tree stock level and the rate of production, i.e. yields per hectare. Input use (fertilizer and labour) to a certain extent influences yields, and forms a variable factor, which in the short term can be varied by farmers in response to prices. Weeding and crop care can be intensified. However, the tree stock in the short term is fixed, and, after planting, it takes 6-8 years for a coffee tree to produce in full.

Variations in world coffee production from year to year are, as described above, mainly due to weather influences (Brazilian frosts). Other factors are plantings that come into production, abandonment of plantations, tree damage and the two-year bearing cycle. This biennial cycle (Parikh, 1979; p. 219) has been attributed to the strain suffered by the tree from a heavy crop, with the result that the next year's crop is

light. Over a large geographical area though the biennial cycle can be evened out.

When looking at the reactions of producers to world market prices it should be remembered that these price signals are transformed by the marketing authorities. Price elasticities have been measured and are described below.

Because of its production characteristics, the price elasticity of coffee production is, in the short term, very low. The long term elasticities, however, seem to be fairly high. For the major producers Brazil, Colombia and Indonesia, high long term elasticities of supply have been calculated by Akiyama. In his data the supply response to the extremely high prices prevailing in the years 1977-1979 has been incorporated. In the generally lower elasticities calculated by Singh, the full impact of the risen prices could not be taken in account. The different estimates are given in Table 2.8.

Singh has an interesting explanation for the differences in supply response in various regions. He discerns two major factors; the importance of coffee within total agriculture, and the type of coffee holdings.

In a country where agriculture is largely devoted to coffee cultivation, both short and long term elasticity of supply tend to be low. With low prices, cultivation is not likely to be neglected since the farming sector and the country as a whole depend heavily on the product, there being little alternative sources of income. This applies specially to Colombia (51% of export earnings from coffee in 1985), El Salvador (73%), Guatemala (41%), Honduras (24%), Costa Rica (34%) and Nicaragua (41%). In the long term, according to Singh (1977; p. 32), since a large portion of agricultural land is already occupied by coffee, the possibilities for expansion are limited. Akiyama though concludes for Colombia a higher price elasticity of supply than Singh.

Exactly the opposite holds for countries where coffee is an agricultural product of only minor importance. In times of low prices governments tend to neglect the coffee sector and farmers switch to other products. When prices rise, farmers devote more attention to the crop and expand production. This applies to Indonesia, where coffee formed 2.9% of all

Table 2.8. Price elasticities of supply.

Country	Short term 1*	Short term 2***	Long term 1**	Long term 2****	Long term 3
Brazil	0.093	0.20	1.10	0.44	0.66
Colombia	0.0673	0.03	0.96	0.18	0.40
North and Central America and Caribbean		0.03		0.14	0.77
El Salvador	0.207		0.56		
Guatemala	0.110		0.50		
Africa		0.12		0.44	1.87
Ivory Coast	0.55		0.73		
Asia		0.10		0.43	3.01
Indonesia	0.285		1.05		
Rest of the world	0.0771		0.38		
World Total	0.12		0.739		

1. Akiyama, T., 1982; p. 15.
2. Singh, 1977; p. 27.
3. Ibid, full adaptation.

* Short run elasticities refer to production response to prices in either or the previous year, except for Brazil where the lag is two years.

** Long run elasticities refer to the effect of a 1% change on production after ten to thirteen years.

*** One year lag.

**** Seven years lag.

exports in value in 1985, and where the government interferes only slightly in marketing and trade (De Graaff, 1986; p. 253).

The type of holding is the second factor Singh distinguishes in explaining differing price elasticities of supply. The estate sector generally shows a higher short term elasticity of supply than the smallholders sec-

tor. In times of low prices the smallholder may pay little attention to the cultivation, but always at least picks part of the crop. An estate holder does have alternative uses for his funds and will invest in other activities. The smallholder though has few alternative opportunities for his labour, even when prices fall and remain low.

For high prices, Singh (1977; p. 32) finds no reason to assume significant differences between smallholders and estates on the basis of the type of holding. More important is the availability of land for expansion, for then estates are able to expand at a faster rate than smallholdings because large investments are needed to develop new land for agricultural production. Brazil has a relatively high price elasticity, reflecting the predominance of large estate production and high government interference. Colombia and Central American countries are heavily dependent on coffee, and small to medium sized production units predominate, indicating the relation Singh expected. Indonesia is an expanding producer, with predominantly smallholders and a low dependence on coffee, with a high price elasticity.

Finally, looking at the world price elasticities of coffee supply, it is clear that the long term price elasticity is rather significant. This causes a serious problem for the world market. In combination with weather-born price fluctuations, these elasticities may set in motion long term production cycles. The rate in which these cycles affect world market prices depends however on demand reactions. This issue is further treated in the next chapters.

3. CONSUMPTION

3.1 Introduction

Coffee consumption is concentrated in the industrialized countries. It is also in these countries that processing takes place, whereby the green beans are turned into roasted or instant coffee. This chapter looks at the relation between consumption and world market price. How does demand in consuming countries affect world coffee prices? And how does world market price influence processing and consumption?

First, attention is paid to the volume and structure of consumption. The technique of processing is then summarized, in order to explain the large scale organization of the sector. The fact that economic as well as political factors bind processing to consumption centres forms the next subject. The chapter concludes with a discussion of consumption characteristics.

3.2 Volume and structure of consumption

Consumption of coffee in producing countries is restricted to Central and South American countries and a few countries in Africa. Total consumption in these countries averaged eighteen to twenty million bags in the 1980's, amounting to 20% of total production. The rest is consumed in the so-called consuming countries.

These are clearly the industrialized countries. In 1984/85 the EC (48.2%), US (30.4%) and Japan (6.4%) accounted jointly for 85% of world imports. EC imports have been growing steadily from 23.6 million bags in 1974/75 to a current 30.9 million bags, whereas US imports during the same period declined from 20.4 million to 19.5 million. Japan forms one of the growth markets, showing an ample doubling of imports in this period (see Table 3.1).

Within the EC, the Federal Republic of Germany (9.2 million bags), France (5.7), Italy (4.8), the Netherlands (2.8) and the United Kingdom (2.6) account for the largest share of imports. Per capita consumption in the EC is highest in Denmark with 11 kg per caput, followed by the Netherlands (9.5 kg) and Germany (6.8 kg).

Table 3.1. Coffee imports by EC, US and Japan 1974/75-1984/85 (million bags of 60 kg).

Year	EC	US	Japan
74/75	23.6	20.4	1.9
75/76	26.0	21.8	2.7
76/77	24.1	18.4	2.8
77/78	23.1	17.2	1.5
78/79	28.7	21.9	3.3
79/80	27.3	20.1	3.2
80/81	28.7	18.0	3.2
81/82	29.3	18.6	3.5
82/83	30.8	18.5	3.8
83/84	29.7	19.6	4.3
84/85	30.9	19.5	4.1

Source: ICO WP-Board 625/86, 1986

In Table 3.2 these figures are compared with per capita consumption in producing countries. Per capita consumption in the US has shown a constant decline since 1962. This has generally been attributed to substitution by other beverages (soft drinks, juices and tea) and a growing anxiety for the assumed negative impact of coffee on health (ICO, Coffee-drinking Study, 1986). Absolute imports of the US in 1985 equalled those of 1970 (19 million bags) which, since the population increased, illustrates the fall in per capita consumption. This notable trend in consumption by the single most important consuming country is partially offset by growth in Japanese imports, where the habit of coffee-drinking is replacing that

of tea. This is also true, to a minor extent in the UK. The Centrally Planned Economies show an increase in imports of 3.2 million bags in 1975 to 4.5 in 1985 (European Coffee Federation, 1986; p. 1).

Table 3.2. Coffee consumption per capita in kg/person 1985.

Consuming countries		Producing countries	
Sweden	11.6	Costa Rica	6.5
Denmark	11.0	Brazil	5.5
Finland	10.1	Colombia	4.5
Holland	9.5	Guatemala	4
Germany	6.8	Ethiopia	3
France	5.5	Ivory Coast	2
Italy	4.9		
United States	4.7		
Spain	2.7		
United Kingdom	2.5		
Japan	2.2		

Source: ICO QSB 36, 1986

Coffee for consuming countries comes from a diversity of countries, depending on the preference of the local consumers for certain tastes and on the availability of certain coffees. Some generalization though can be made. Bierman (1986; p. 2) states that countries with a high per capita consumption generally have a high combined Arabica import share (e.g. Finland, 98%, Germany 90%, Sweden 99%) whereas countries with a relatively young tradition of coffee-drinking show a high Robusta share (e.g. the UK 41%) and consume mainly instant coffee (UK, Japan). France and Italy on the contrary also have high Robusta shares, but this can be related to the proximity and former colonization of West African countries where Robusta is produced. French consumption switched to Robusta when production began to increase after the First World War. US consumption has a high proportion of instant coffee (20%), and typically light brews of unwashed Arabicas and Robusta coffee are prepared.

3.3 Processing

At the processing stage of the coffee marketing chain in the consumption centra, the green beans are transformed into roasted and/or instant (soluble) coffee. Decaffeination when desired is usually the first stage in the chain of processing before roasting.

Roasting and grinding are usually preceeded by the blending of coffees from various parts of the world to obtain a taste to which the final consumer is accustomed. Blending, roasting and grinding practices differ among markets as a result of differences in consumer preferences.

Often a large number of different coffees are blended, and dependent on availability and cost price, manufacturing firms' melange experts mix consumer blends. The taste of these blends can vary within certain boundaries, without changing consumer perception. Firms try to keep the perceived final taste as constant as possible, as this forms one of the elements of consumer brand loyalty. The taste of a coffee bean blend is determined by 'blending types' and 'fillers'. A mild blend can consist of a changing percentage of Brazil's of the soft tasting Santos 4 type besides the blending type of Milds. Robusta and more bitter tasting Brazil's (Hards) cannot be blended in a high quality blend as they would destroy the mild flavour of the coffee blend. Blends aiming at a more bitter and stronger taste can be mixed from pure Brazils and increasing the relative bitterness, from Robustas. Within the three main groups - Milds, unwashed Arabicas (or Brazils) and Robusta - large quality differences exist.

Instant coffee manufacturing involves the extraction and dehydration of liquor from ground roast coffee. Although freeze drying can be applied at this stage, spray drying still accounts for the bulk of instant coffee produced (Gordon, 1979; p. 159). Usually lower grade coffees are used for instant coffees.

Over the last two decades there has been a concentration of ownership tendency notable in the processing industry. In the sector of roasted coffee, which represents about 80% of all consumption in the largest consuming countries (Unctad, 1982; p. 60) a small number of enterprises account for a large share of the market (see Table 3.3.). Acquisitions in

Table 3.3. Concentration ratio of roasted coffee industry in major consuming countries.

Country a/	four-firm sales concentration ratio (%) 1960	1978
United States	46 b/	69 c/
Federal Republic of Germany	49	67
France	25	60
Italy	11	49
Netherlands	66	86
Sweden	35	81
Belgium-Luxembourg	80 d/	90
Denmark	18	55
United Kingdom	-	70 e/

a/ Countries ordered by value of total coffee imports, 1976-1977.
b/ 1958.
c/ Preliminary.
d/ Three firms.
e/ Two firms.

Table 3.4. Concentration ratio of the soluble cofffee industry in major consuming countries.

Country a/	Four-firm concentration ratio (%) 1968/1969	1977/1978
United States	85 b/	91
Federal Republic of Germany	82	94
France	97	92
Italy	95 c/	86 c/
Japan	90 c/	...
Netherlands	66 d/ e/	80
United Kingdom	94 d/	90
Sweden	96	...
Canada	74 c/	...
Spain	92 c/ e/	92 c/
Denmark	100	...
Switzerland	80 d/	...
Norway	95 d/	92 c/
Austria	75 d/	...
Greece	90 c/	...

a/ Countries ordered by value of total coffee imports in 1976-1977.
b/ 1967.
c/ Two firms.
d/ Three firms.
e/ 1970-1971
Source: Unctad 1983, p. 106.

the seventies led to a growing concentration in the coffee sector of almost all developed countries. The four firm sales concentration ratio in 1978 varied from 49% of all sales in Italy to 90% in Belgium/Luxembourg. In the instant coffee sector this ratio is even higher. In both sectors, but especially in the instant sector Nestlé and General Foods (75% of world sales) have most sales in the most important markets (Unctad, 1982; p. 58). In the US (80% combined market share), France (90%), Japan (95%) and Germany (53%) this domination by both firms is striking (see also Table 3.4.). Several firms have expanded their activities towards markets in developing countries, where especially instant coffee is produced for the local market. Various transnationals had a large number of foreign affiliates. Nestlé is especially active in producing countries, and is said to limit its purchases to producers in countries where it has foreign affiliates (Dinham and Hines, 1983; p. 65) thereby exerting considerable influence over the coffee policies in those countries.

3.4 Barriers to entry

Where large processing companies from consuming countries try to penetrate markets of producing countries, one may wonder why processing is so tied to consumption centres. It is estimated that overall gross margins of trading, processing and distributing represent approximately a quarter of the retail price of coffee. It is further estimated that 50% of this price is due to manufacturing and distribution value added (Unctad, 1982). Why do not the producing countries have a larger part of the pie? What are the barriers to entry?

For a number of reasons, the potential for exporting countries obtaining a higher share of the value added is limited. The processing of green beans into roasted or instant coffee is constrained by several factors. Single exporting countries cannot produce the exact blend of coffees preferred by Western, especially European consumers. The blend composition function gives the roasting industry a strong competitive advantage over coffee exporters, impeding them from setting up their own industry. Furthermore, roasted coffee rapidly loses flavour if not vacuum packed. Technological knowhow, especially in the soluble industry, is patented,

and large scale production offers advantages of scale, is capital intensive and requires only a small labour force. Also, the coffee industry is characterized by heavy advertizing, hindering entry of new brands.

Table 3.5. Tariff rates for green, roasted and instant coffee of major importing countries in 1985.

	green	(decaffeinated)	roasted	(decaffeinated)	extracts, essences and concentrates
US	0	0	0	0	0
EC	5% (0% for ACP)	13% (ACP 0%)	15% (ACP 0%)	18% (ACP 0%)	18% (ACP 0%)
Japan	0%		20%		0% (LDC)-30%
Canada	0%		0.7%		1.4%
Austria	0-13%		0(LDC)-15%		0(LDC)
Finland	0(LDC)-3.9%		16%		8.8%
Norway	0%		2.3%		0-0.2%
Switzerland	8.3-10.4%		8.1-11.6%		14.4%
New Zealand	0		0-25%		0-35%
Australia	0-2%		1.1%		0-7.5%

Source: Compiled from EB 2546/85, ICO London, 1985.

Another factor is that importing countries generally apply tariffs to imports of processed coffee from exporting countries, whereas green coffee is not taxed at the borders. The US, however, places no tariffs on coffee. The EC also forms a slight exception to the rule. ACP countries receive preferential treatment from the EC and have zero tax, whereas processed coffee from non-ACP countries is charged with an import duty of 18% (see Table 3.5.).

Imports from ACP countries account for 42% of imports of green coffee, and the tariff clearly gives ACP countries an advantage over Latin American countries. Japan charges imports of processed coffee heavily

with ad valorem taxes of 20-35%. Government revenues from coffee imports in 1979 were estimated at 232 million US dollars of which the EC and Japan accounted for most of this (Unctad, 1982; p. 88).

Also non-tariff barriers are applied as is shown by the famous case of the Brazilian/US dispute on instant coffee in 1968. Within a very short period Brazil obtained a market share of 15% on the US soluble market, due to its ability to use low quality cheap coffee. A lobby of US manufacturers in the Congress forced the Brazilian government to export a similar amount of taxfree coffee to the US soluble firms in order to restore free competition (see Payer, 1975; p. 165). Brazilian soluble coffee export soon lost ground again in the US.

Another element which is important in coffee marketing and the coffee trade is the existence of internal taxes and subsidies (not related to international trade). A number of European countries, such as the Federal Republic of Germany, Italy and the Netherlands, have high excise taxes on coffee products. These taxes date from the time when tropical products were considered luxuries. The amount generated by these taxes is quite significant. For the Federal Republic of Germany it has recently been estimated at close to 400 million US dollars (Unctad, 1982; p. 47).

3.5 Consumption characteristics

Consumption of coffee in industrialized countries is traditionally influenced by two factors; the retail price of coffee and general income per capita developments. Lately, especially in the US, a growing awareness of the assumed negative impact on health has also reportedly led to the substitution of coffee by other beverages such as tea, juices and soft drinks. This trend, isolated from price or income effects, can also, to a minor extent, be observed in West Germany.

Estimates of price and income elasticities of demand for the major consuming regions have been prepared by Singh (1977) and Akiyama (1982) (see Table 3.6). Singh (1977; p. 38) demonstrated that US-income elasticity declined from 0.243 in 1950 to an estimate of 0.001 in 1985. For other importers a similar but less steep decline was estimated, from 1.046

in 1950 to 0.536 in 1985. This indicates that in recent years the response of coffee consumption to additional income has decreased. The more recent study by Akiyama (1982; p. 13) showed similar results. US-income elasticity was actually negative, whereas figures for EC, Southern Europe and Scandinavia are 0.697, 0.537 and 0.33 respectively. Central Europe, Japan and Centrally Planned Economies showed more growth potential when income increased. On a world scale, however, the absolute size of imports in these countries was still low.

Table 3.6. Price and income elasticities of coffee demand.

	Akiyama		Singh	
	income	price	income	price
US	-	-0.372	0.006	-0.216
Other	-		0.643	-0.262
EC	0.597	-0.0677		
Scandinavia	0.330	-0.1237		
South Europe	0.537	-0.0971		
Central Europe	1.140	-0.0190		
Japan	1.990	-0.3963		
Centrally Planned Economies	1.073	-0.1680		
World	0.448	-0.1860		

Source: Akiyama 1982; Singh 1977.

Akiyama estimated world-income elasticity of demand at 0.448, implying an increase of 4.48% of import demand when per capita income grew by 10%. For short term price elasticities of demand, Akiyama showed high absolute values for the US and Japan and low values for the EC, Scandinavia, Southern and Central Europe and, surprisingly, the Centrally Planned Economics (-0.168). A more recent study by Duncan (1986; p. 23) assumed a value of -0.4, in the light of recent price competition on the non-member market for coffee (see 4.3) and the worsened reserve and

foreign exchange situation of these economies. For the world as a whole, Akiyama estimated the price elasticity of import demand at -0.186. In terms of price formation, this is very low. The low elasticity of demand is an important factor behind coffee price instability on the world market. Because production fluctuations are not easily absorbed by consumption adjustments, prices may fall low or rise high. Only at extremely high price levels, such as in the period 1976/78 and more recently in 1986, does strong consumer resistance develop.

4. TRADE

4.1 International trade

On the world market a confrontation takes place between exporting and importing parties, with or without the mediation of traders. The prices of the various grades of coffee are thus formed in the meeting of supply and demand, the outcome being influenced by environment, market conditions and the strategy of the marketing participants.

It is the purpose of this chapter to present a survey of the international marketing of coffee. First the structure of the world coffee market is analyzed. At the same time, the marketing channels through which trade is conducted are described. Special attention is paid to spot and futures markets as well as the transport system. This is followed by a description of the market participants and finally, the international market characteristics, especially price formation are analyzed. Some insight is offered into the supply and demand strategies of market participants, as well as into determining conditions.

4.2 Structure of the world market

The international coffee market can be characterized as a bilateral differentiated oligopoly. In both exporting and importing countries supply and demand are relatively concentrated. As coffee is not homogeneous, various (sub)markets are discerned (Geer, 1971; p. 71). Table 4.1 shows the origin of imports by major consuming countries. Figure 4.1 gives an illustration of price developments for different grades of coffee.

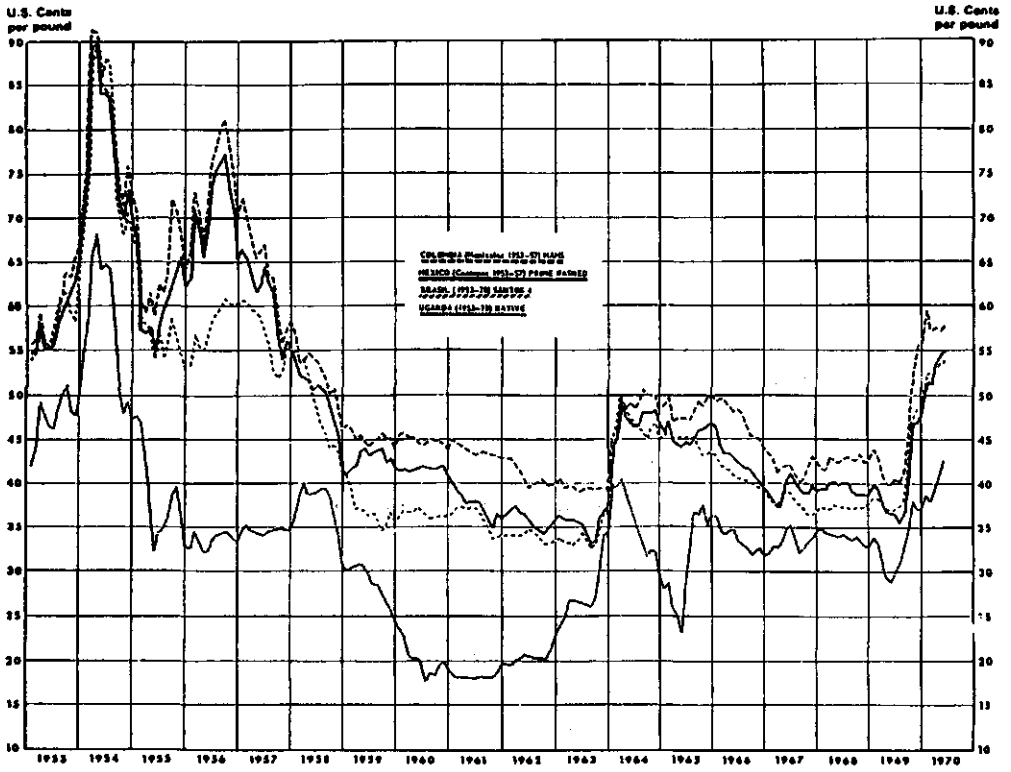
Only a few countries export the bulk of all exports. In 1984/85 Brazil and Colombia, with 30% and 16% respectively of world exports were the largest, followed by Ivory Coast (8%), Uganda (5%), Indonesia (5%) and El Salvador (4%). Supply was even more concentrated in the past, when

Table 4.1. Origin of imports by major consuming countries; 1985.

France:	Ivory Coast (26.6), Brazil (23.6), Zaïre (7.5), Colombia (6.7), Madagascar (6.3), Other (29.4).
West-Germany:	Colombia (20.1), Brazil (18.0), Kenya (4.2), El Salvador (6.9), Ethiopia (4.2), Other (31.6).
Japan:	Brazil (30.0), Indonesia (21.4), Colombia (13.3), Honduras (5.4), India (5.2), Other (248.)
US:	Brazil (23.3), Colombia (13.6), Mexico (8.9), El Salvador (7.2), Indonesia (6.0), Other 41.3).

Source: Pieterse, 1987.

Figure 4.1. Spot coffee prices for the New York market: 1953-1970.



Source: Pan American Coffee Bureau, Annual Coffee Statistics, 1969.

Brazil possessed a larger market share.

Within the three main types (unwashed Arabicas, Mild Arabicas and Robustas) Brazil has virtually a monopoly for the unwashed Arabicas. Colombia is the main exporter of Milds, with El Salvador, Guatemala and Costa Rica as other major exporters. Ivory Coast, Indonesia and Uganda are most important exporters of Robusta. In the most important exporting countries the parastatal organizations have a large influence on export supply, as was shown in chapter 2.

On the side of demand in the coffee manufacturing industry, for both washed and soluble coffee, a certain substitution within coffee grades is possible, without perceivably altering the taste for the final consumer. As such, these three partial markets are interrelated and distortion of supply-demand balances for one type will have an effect on other types.

In the washed coffee industry, concentration is rather high in most consuming countries. In the instant coffee sector, General Foods and Nestlé dominate, and this gives rise to oligopsonistic buyers concentration, as especially in instant coffee the lower quality Robusta and unwashed Arabica are used. In the roasted coffee industry buyers concentation is not oligopolistic, although there are several large companies involved.

4.3 International marketing channels

On the world market, coffee is mainly traded in the form of green coffee. Two types of market distinguished for this coffee are the cash market and the futures market. Furthermore direct supply contracts between exporting organizations and processing companies form an important part of the international marketing system of coffee.

The cash market consists of spot markets and shipment markets. The spot market entails the trading of coffee that has actually arrived from producing countries and is being stored in warehouses. The shipment market involves the purchase or sale of actual coffee for shipment in a producing country. An importer can buy in three ways; cost and freight,

cost, insurance and freight, and free on board, delivery steamer at loading port. During the voyage this coffee can change hands many times. The main spot and shipment markets are all located in the importing centres of New York, London, Bremen, Le Havre and Marseilles.

The futures market provides the possibility for importers, exporters and traders to hedge the risk of future, adverse price movements. Standardized contracts for a certain quantity and quality (The New York 'C'-contract) of coffee to be bought or sold at a fixed future date provide traders, seeking to avoid risk, with an important opportunity of hedging this risk. As risk-hedging parties, who cover either risk on a future sale or future purchase, are not evenly matched, additional liquidity in the market is furnished by speculators. These assume uncovered risk, with as goal, the making of a profit by predicting the direction in which the market will move. The futures market also offers an economically viable means for pre-harvest financing to exporters and to the marketing boards of producing countries. Most transactions on the futures market do not lead to delivery or acceptance of the physical coffee, as traders relieve themselves of the obligations by entering into offsetting transactions. As such, the futures market is used basically to avoid the risk of price fluctuations and/or to assume the risk of price fluctuations (speculation).

Use of futures markets to hedge the price of future sales of coffee by exporting countries is generally viewed rare (Thomson; Thompson and Bond; Kuhn, 1985). A number of reasons can be found to explain this. The margin deposit required for exporters willing to hedge amounts to 10-15% of the total value. As this involves scarce foreign exchange (US dollars/Pounds Sterling), and also the risk of further margin deposits at adverse price movements, some exporters cannot finance this transaction. Furthermore, cross-hedging is often necessary to hedge their own currency movements against the US dollar or the Pound Sterling. Also, if the quality, quantity or time of delivery do not correspond to the standard contract traded in New York or London the exporter incurs the so-called basic risk (Thompson and Bond, 1985; p. 980).

Contracts of supply (or 'special deals') entail a mutual binding agreement between major producing countries and large roasting firms in consuming countries. This practice, begun in 1967 (Singh, 1977; p. 39), has

increased rapidly and now virtually all coffee from the Brazilian and Colombian state marketing authorities is sold under contract with roasters. Prices, however, are usually connected to those on the markets mentioned above. Brazilian exporters, for example, offer roasting firms a refund equal to the difference between the New York price for unwashed Arabicas (Santos 4) and a weighted average of indicator prices for other Milds and Robustas. Apart from this, a fidelity bonus is paid to the roasters when they use a minimum amount of Brazils in their blends. Special deals are entered into for various numbers of years. Colombian exporters apply a similar strategy.

A special form of supply contracts are compensable transactions, or barter trade. Here the payment of foreign exchange is avoided. The occurrence of barter trade was exacerbated by the financial crisis of the early eighties. Barter trade transactions, involving Brazilian, Colombian, Costa Rican and Tanzanian coffee are mentioned by Avramovic (1986; p. 973).

Transport of coffee is mainly by ship. Shipping rates for coffee, as for many other commodity exports from developing countries, are established by the various shipping cartels, or conferences which dominate the transport market. In the past, shipment tariffs amounted to 2-3% of the landed value of coffee in importing countries (Unctad, 1982; p. 49). Most ships transporting coffee are owned by interests in developed countries, though Brazilian and Colombian coffee authorities have established their own shipping lines. For most smaller exporters, the quantities of coffee do not justify the investment necessary to establish a domestically owned line.

4.4 Participants on the international coffee market

International trade in coffee is conducted by suppliers, i.e. governmental agencies and/or private exporters, traders and processing companies. Export sales in most coffee producing countries are handled by private export firms (Unctad, 1982; p. 44). Governmental agencies can compete with private exporters (e.g. El Salvador and Mexico) or can use them to

act as their brokers (e.g. Ivory Coast). Increasingly though, coffee marketing authorities are themselves taking a direct role in export marketing. This is indicated by the increasing importance of supply contracts between coffee authorities and processing companies. Colombia's FNC for example sells directly to buyers in Europe and Japan whereas most exports are handled through about forty export firms. In Brazil the parastatal IBC negotiates sales to state trading companies in centrally planned economies and sells coffee from the storage facilities it owns in Trieste, Hamburg and Hong Kong. On other markets it competes with private Brazilian companies such as Intercontinental de Café S.A., the world's largest private coffee trading firm, and BRACAFÉ. Braspetro and Cobec are government-owned trading companies that also deal in a number of other products. The actions of private exporters in Brazil are influenced to a very large extent by IBC policy on export marketing. In countries with a monopoly situation for national coffee purchases, this organization in many cases acts as a single seller.

For trading, it is estimated (Unctad, 1982; p. 54) that 50% of all trade is handled by predominantly large international trading houses, the rest being undertaken by transnational companies. Concentration in international trade has been attributed partly to the high prices prevailing in the mid-seventies, and the low volume of trading, which led to a large number of mergers and takeovers. Large traditional coffee trading companies are ACLI International (USA), Jack Aron (USA), Socomex (USA) and Volkart (Switzerland).

Processing companies also play an important role. Concentration in this sector has led to powerful corporations such as General Foods, Sara Lee Corporation, Jacobs, Procter and Gamble, Standard Brands and the Atallagroup. These six corporations had a joint market share in the developed countries roasted coffee market of 32.8% in 1978, whereas in the developed countries' instant coffee market, General Foods and Nestlé together controlled 75% of all sales (Unctad, 1982; p. 61-63). Chalmin (1980; p. 537) concluded that world coffee trade is trader dominated, as most of the trade is handled by international trading companies. This conclusion seems justified historically, but the growing importance of producing countries' marketing authorities has undoubtedly reduced their role in recent years.

4.5 Market characteristics

Basically, the international coffee market is the confrontation between production and consumption characteristics. In this confrontation coffee prices are formed. It has been argued in previous chapters that neither consumption nor production are really responsive to prices in the short term. Furthermore, as has been shown, on a yearly basis production is volatile because of weather influences. On the other hand response to price changes in the long term is rather strong. When combined, these observations mean that coffee prices are inherently unstable. The moment at which and the rate in which this instability becomes manifest, however, depends on the conduct of market participants. Market participants can fuel or dampen the inherent instability. Here, stockholding and speculation are of utmost importance,as are organized producers' market interventions. Generally speaking, stocks can be formed and held either in producing countries or in consuming countries. Furthermore, the stocks can be of a short term nature and of a long term nature. The latter is possible because, under specified conditions, the quality of the coffee can be maintained for several years. At various occasions in the past,

Figure 4.2. World and Brazil's net opening stocks, 1965-1985.

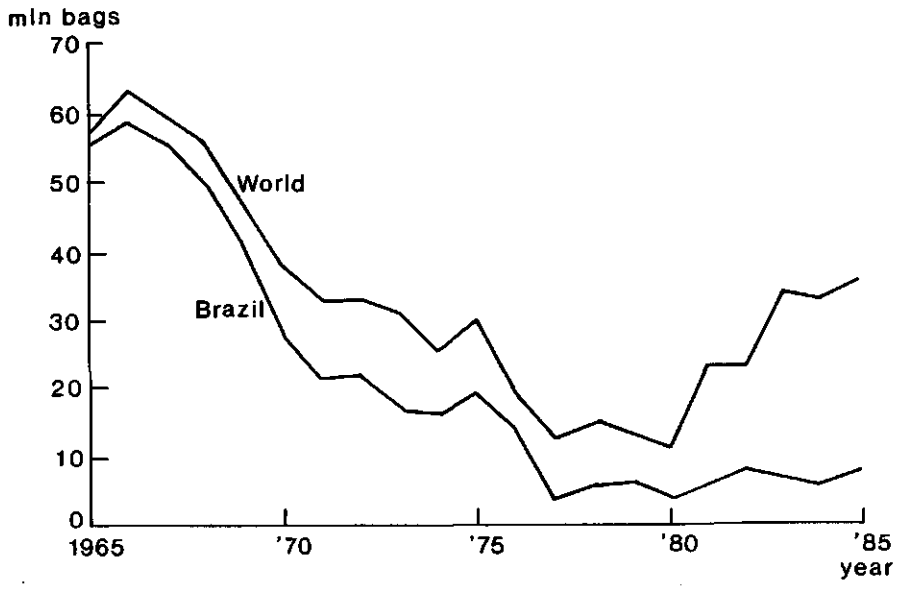
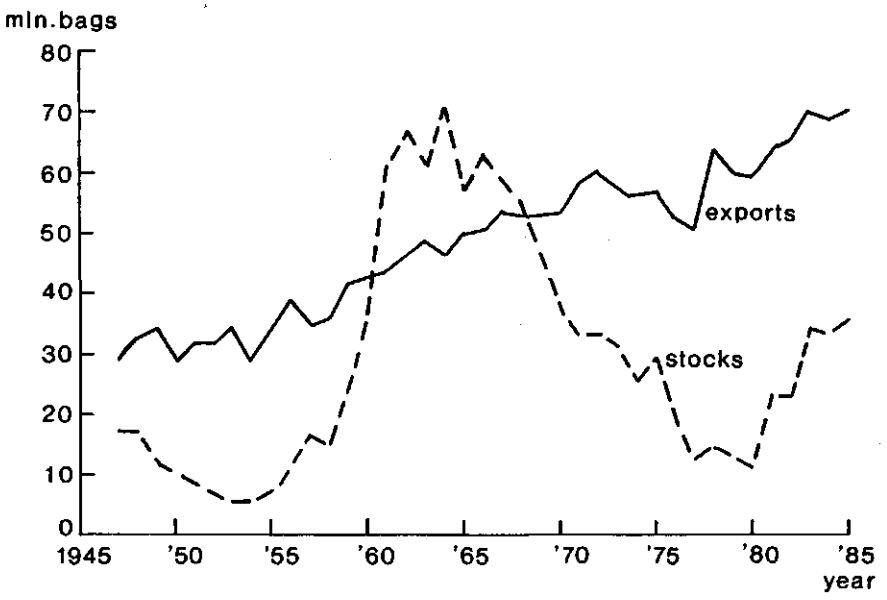


Figure 4.3. World export and stocks.



Brazil has raised market prices by withholding production from the international market. Smaller countries have often followed Brazil as a price leader (Junguito and Pizano, 1981; p. 9). Since 1980 its stocks have formed a much smaller part of total world producer stock, but throughout the century it has been the main producer stockholder, holding 80-90% of world stocks (see Figure 4.2). As such Brazil was able to exert pressure to join export restriction schemes on other producers by threatening to flood the market.

Figure 4.3 shows the development of world stocks and exports. It can be seen that a long term cyclic movement existed in world stocks, between the period 1953-1976. It is important to note that stocks have been negatively but strictly correlated with prices (see Singh, 1977 and Akiyama, 1982). The cycle started with high prices and low stocks in the early fifties. These were followed by high stocks and low prices in the

early sixties, after which low stocks and extremely high prices closed the cycle in the mid-seventies.

Given the steadily increasing consumption, the main cause of cycles in stocks and prices must be found in the production characteristics. Weather can induce production fluctuations whereas successive price changes may induce a high supply response in the long term.

Stockholding for a monopolistic price policy at first may have been very attractive for Brazil, but in the long run, forming and holding stocks have several drawbacks. If prices are raised effectively these provide incentives for competitive producers. Furthermore, the costs of stockholding are high. Finally, if they are large, they have proven to be price depressing. The stock level has been shown to be of a conditional nature as to the price effect of crop failures. Both in 1953 and 1975/ 76 when frosts seriously reduced harvests, stocks were at extremely low levels, compared to annual exports. The market reacted in both situations with

Table 4.2. Stocks in consuming countries, 1970-'81.

End of year	Consumer stocks in million bags
70/71	7.5
71/72	9.3
72/73	8.0
73/74	10.6
74/75	-
75/76	7.8
76/77	7.1
77/78	7.2
78/79	5.4
79/80	7.1
80/81	7.8

Source: Akiyama 1982 p. 9.

large upward price movements, aggravated by increased speculative interest. Frosts or drought in years with a relatively higher stock level had in the short term a less pronounced effect on market prices.

In the consuming countries, stockholding is performed by processing firms. Their strategy consists of spreading supplies from various sources and varying stock levels according to costs of storage and market expectations. The prime concern of the processing industry is to secure the supply of the raw material. In times of uncertainty of future harvests, a natural reaction to scarcity is formed by an increase in demand also aggravating price rises. Table 4.2 shows the development of stocks in consuming countries.

Apart from exporters withholding production and importers changing stock levels, there is a third group of market participants that influences price formations, the non-trade interest, which operates in the futures market. The influence of this interest on price formation is believed to be excessively large in some periods. There is however no consensus about what constitutes excessive speculation.

According to the Bank of England, the supervisory authority on the futures market, speculation is excessive when non-trade interests account for more than 30% of the contracts outstanding in the futures market. The Bank is said to intervene by restricting, usually informally but on rare occasions formally, the number of new contracts that can be entered to (Commonwealth Secretariat 1980; p. 74). The Chigago Mercantile Exchange however has a different attitude and considers a minimum of 50% non-trade interest (investors, speculators) necessary for the provision of sufficient liquidity (Kuhn, 1985; p. 997).

During normal market conditions i.e. in the absence of alarming news concerning supply of coffee, speculators do provide additional liquidity to equate sellers and buyers positions following a hedging strategy. In such market conditions, speculation is an indispensable part of the trading system and even enhances price stability (Commonwealth Secretariat, 1980). However, the growth of non-trade involvement in futures markets has not been welcomed by critics who argued that its flood of capital destabilizes and causes commodity prices to become increasingly separated from actual

supply and demand conditions. Speculative activity requires a degree of price instability to be viable. Alarming news can attract speculative investment capital seeking a yield on capital, and in recent years this trend has increased. For example, turnover on futures markets increased greatly during the seventies. After the free float of the dollar started in 1973, turnover even exceeded world production, as was also the case after the frost in Brazil in 1976. This trend concerns especially capital from large institutional investors whose capital is extremely mobile, moving from market to market and depending on expected price movements. 'Bandwagon effects' then easily develop. These effects are further supported by small private investors who have reportedly entered the market. The high speculative activity on the coffee market has been labelled the 'doctors and dentist' reaction (Financial Times, 20.5.1986). These reactions usually create a continuing price movement, either upwards or downwards, and surely form a destabilizing factor on the world market.

5. THE INTERNATIONAL COFFEE AGREEMENT

5.1 Introduction

In the preceeding chapter it was concluded that price instability is a basic feature of the international coffee market. For many countries coffee is a very important product for export revenues, and coffee price fluctuations therefore have a considerable impact on their economy. For economic and political reasons the major consuming countries decided in 1962 to support a coffee price stabilization scheme, based on the framework agreed on in 1948 in the Charter of Havana. This became the first International Coffee Agreement (ICA). By means of export quotas imposed on producing countries, world market prices were to be stabilized to increase the stability of export revenues of these economies. In the history of interventions in the coffee market Brazil had already been applying a policy of monopolistic export pricing since 1906 by retaining produce from the market. In 1941, export quotas, now on a multilateral Latin American basis, were imposed on exports to the US. Also in the decade preceeding the ICA of 1962, export quotas had been the instrument of price regulation.

The International Coffee Agreement of 1962 was renewed in 1968, 1976 and 1983. Although an evolution in regulatory mechanism can be distinguished, the basic features remained unchanged.

This chapter begins with a discussion on the current features of ICA 1983. Export quotas and their determination, indicator prices, and organizational structure of the International Coffee Organization (ICO) are described. At the same time, an insight is given into the evolution of the economic clauses of the preceeding Coffee Agreements, and a further analysis is made of previous internationally coordinated interventions in the coffee market. For some of the problems arising from these interventions, administrative or legislative solutions were found while others proved inherent to the system of export quotas. Then follows a descrip-

tion and analysis of the problems which ICA 1983 is currently facing. These problems are defined as such, since they have caused disputes among participating producing and consuming members. The chapter concludes with an assessment.

5.2 The International Coffee Agreement of 1983

Objectives

The prime objective of ICA 1983 does not differ from that of earlier Coffee Agreements. It aims at achieving a reasonable balance between world supply and demand on a basis which will assure adequate supplies of coffee at fair prices to the consumers, and markets for coffee at remunerative prices to producers. According to Article 1 of ICA 1983, this will be conducive to long term equilibrium between production and consumption. Furthermore, a number of secondary objectives have been added.

1. To avoid excessive fluctuations in the levels of world supplies, stocks and prices which are harmful to both producers and consumers.
2. To contribute to the development of productive resources and to the promotion and maintenance of employment and income in Member countries, thereby helping to bring about fair wages, higher living standards and better working conditions.
3. To increase the purchasing power of coffee exporting countries by keeping prices in accordance with the prime objective and by increasing consumption.
4. To promote and increase the consumption of coffee by every possible means.
5. In general, in recognition of the relation between the coffee trade and the economic stability of markets for industrial products, to further international cooperation in connection with world coffee problems.

(Arts. 2-6 of ICA 1983). Unless otherwise stated, further articles referred to in this section refer to ICA 1983.

It is clear from these objectives that the prime aim of the Agreement is to stabilize world market prices, and thus coffee export revenues for exporting countries and coffee import payments for importing countries. Purchasing power for exporting countries is only to be increased by increased consumption in importing countries (and not by increase in prices), thereby creating a larger market for industrial products for export from coffee importing countries. The interests of both exporting and importing countries are thus served by a stable world coffee market. These mutual interests form the basis of the Agreement.

Export quotas

The method of price stabilization is the imposition of restrictions on exports by exporting countries. Since almost all exporting countries (50) participate in the Agreement, 99% of world coffee exports in 1985 was covered by its provisions. The 25 importing member countries have agreed to restrict imports from non-member countries to the level of the period 1962/64. In 1985 this formed only 0.5% of total imports (ICO QSB, 36). In the same year, imports by non-member countries amounted to 12% of total world imports. Every year during the annual Council meeting, where all exporting and importing members gather, a decision is made upon the size of the global annual quota of coffee to be exported. The following criteria are taken into account (Art. 34):

1. The estimated annual consumption of importing members.
2. The estimated changes in the level of inventories in member countries and free ports.
3. Announced shortfalls in exports.

This global annual quota is then formally allocated among exporting members (Art. 35) using a fixed distribution key, which was agreed upon in 1976 and which was also included in the 1983 Agreement. Individual annual quotas are apportioned to a fixed part, based on the historical (basic) quota of each member, and to a variable part, based upon each member's share in the verified stocks available for export in the member's warehouses. The basic export quota forms 70% of the total quota. The variable part forms 30% of the total quota, on condition that no member receives more than 40% of it. Not all members are subject to this formal

determination of the individual quota size, as the Agreement discerns two types of exporting members. The 20 countries exporting less than 400.000 bags are exempt from a basic quota and together have an export quota corresponding to 4.2% of the global annual quota. Exceptions are Burundi and Rwanda, which have a fixed export quota (Art. 31). Angola also has a similar position within the Agreement.

In practice though, the formal determination of quotas on the basis of previous export quotas and stocks available for exports has never been applied. Instead, the distribution of quotas among exporting members has the character of an ad-hoc decision procedure (Dauster, 1986; p. 4).

The dynamics of the global quota are determined by the movements in the composite indicator price. When certain reference price boundaries are surpassed, quotas are automatically adjusted to take account of market conditions and to restore equilibrium. The composition and exact functioning of the indicator price are discussed further in the next section.

In order to secure an orderly flow of coffee to the world market, exporting members have to export 25% of their annual quota every quarter of the coffee year, which runs from the first of October until the thirtieth of September (Art. 36). Members exporting less than 100.000 bags a year are exempted.

When an exporting member anticipates a shortfall from its export entitlements, he has to declare this in order to permit proportional redistribution in the same coffee year among other exporters who are able and prepared to export the amount of the shortfall (Art. 40).

Compliance with the quota provisions is controlled by means of certificates of origin. Each country receives export stamps to a quantity corresponding to its allotted annual quota. Each shipment of coffee has to be accompanied by a valid certificate of origin with an affixed stamp. Importing countries must prohibit imports of coffee not accompanied by such a certificate. Import and export among importing members has to be combined with a certificate of re-export. The purpose of this is to prevent non-member countries from re-exporting coffee which they originally imported from member countries (Art. 43). This coffee is known as Tourist coffee. In the Agreement, importing countries thus act as a

Table 5.1 Composite Indicator Price (US dollarcents per pound equivalent) as at July 2nd, 1986.

			prices
1. Other Milds			
El Salvador CS	n.q.*	ex dock New York	
Guatemala PW	157.00	prices	
Mexico PW	152.50		
	+ 309.50/2 =	154.75 x 0.75**	
El Salvador HG	169.76	ex dock Bremen/Hamburg	
Guatemala HB	171.01		
Nicaragua SHG	168.90		
	+ 509.67/3 =	169.89 x 0.25** =	1. 158.54
2. Robusta			
Angola Ambriz 2BB	n.q.	ex dock New York	
Côte d'Ivoire G II	117.50		
Uganda Standard	118.00		
	+ 235.50/2 =	117.75 x 0.6**	
Côte d'Ivoire SG II	119.14	ex dock Le Havre	
Cameroon SG I	119.98		
Central African S	118.75		
Madagascar SG II	116.28		
	474.15/4	118.54 x 0.4** =	2. 118.07

1. 158.54
2. 118.07
+ 276.61/2
138.31 Composite indicator price (1979)

* n.q. = not quoted
** = relative weight
Source: Weekly report on prices, Thursday July 3rd, 1986. ICO London

control post for the compliance with the quota provisions of exporting members.

The indicator price

The restrictions on exports by means of quotas for individual countries aim at maintaining the coffee price within the agreed range of 1.20 dollar and 1.40 dollar per pound. As has already been made clear, coffee is not a homogeneous product, but has a wide range of qualities and types. On the world market, yearly average export prices for different qualities varied in 1985 from 363 dollarcents per pound for Jamaican coffee (a premium priced connoisseurs coffee) to 97 dollarcents per pound for little preferred Robusta coffee from Gabon.

The International Coffee Organization discerns four main types.

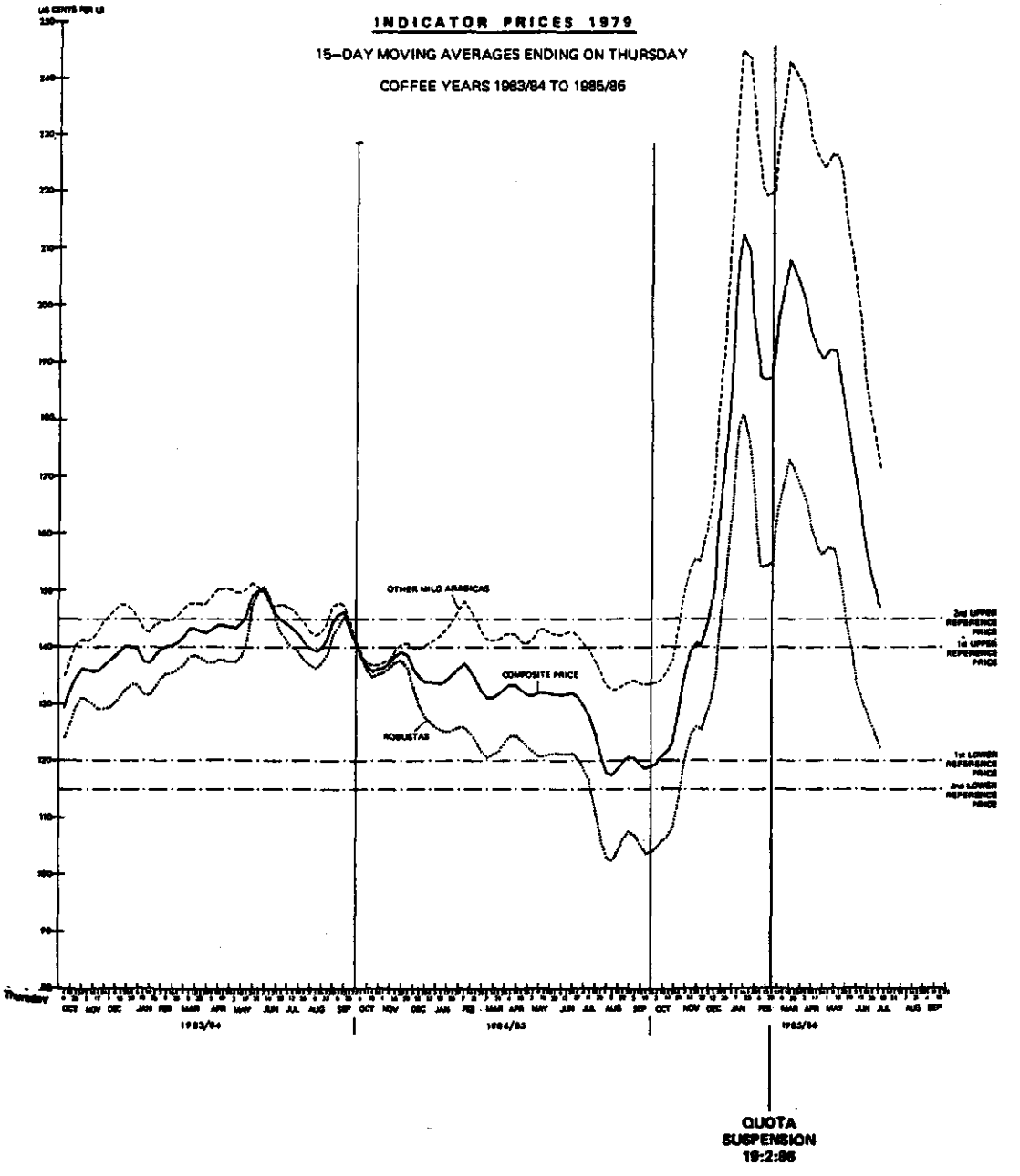
1. Colombian Milds (washed Arabica).
2. Other Milds (washed Arabica).
3. Brazilian and other Arabicas (unwashed Arabica).
4. Robustas.

These are listed here in a (under normal market conditions) declining price sequence.

All countries are classified into one of these categories, although some countries export both Arabica and Robusta.

In order to obtain an indicator price which is representative for the world coffee market, a composite indicator price has been designed, including only specific coffee qualities from the Other Milds and the Robusta category (see Table 5.1). Brazilian and other Arabicas and Colombian Milds are not included, as in the view of importing members, quotations for Brazilian and Colombian coffees, are administered by the coffee authorities in both countries (Junguito and Pizano, 1981; p. 8). The large influence their quotations would have on the composite indicator price would enable their coffee authorities to manipulate the performance of the Agreement. The 1962/68 Agreements did contain Brazilian and Colombian Milds in the price indicators. The current indicator is composed of the coffee types mentioned and quotations are obtained in both the New York Commodity exchange and the European spot markets of Bremen and Le Havre.

Figure 5.1. The composite indicator price and indicator prices for Other Mild Arabicas and Robusta, 1983-1986.



The composite indicator price (CIP) is published daily by the ICO. Its 15-day moving average determines the quota system. When it moves out of the stabilization range of 1.20-1.40 US dollars/per pound, quotas are automatically enlarged or decreased by fixed percentages relative to the agreed reference prices. When the 15-day moving average CIP exceeds the 1.40 dollar per pound, an extra 1 million bags are added to the global annual quota and distributed proportionally among exporting members. An identical quantity is supplemented at 1.45 dollar, whereas at 1.50 dollar an extra 3 million bags are distributed. When these quota enlargements do not result in a decline in price, and the moving average remains for 45 days consecutively above the 1.50 dollar level, quotas are suspended. Exporting members then are obliged to export as much as they can in order to bring prices down, dependent on their logistic capacity and availability of stocks (Art. 33).

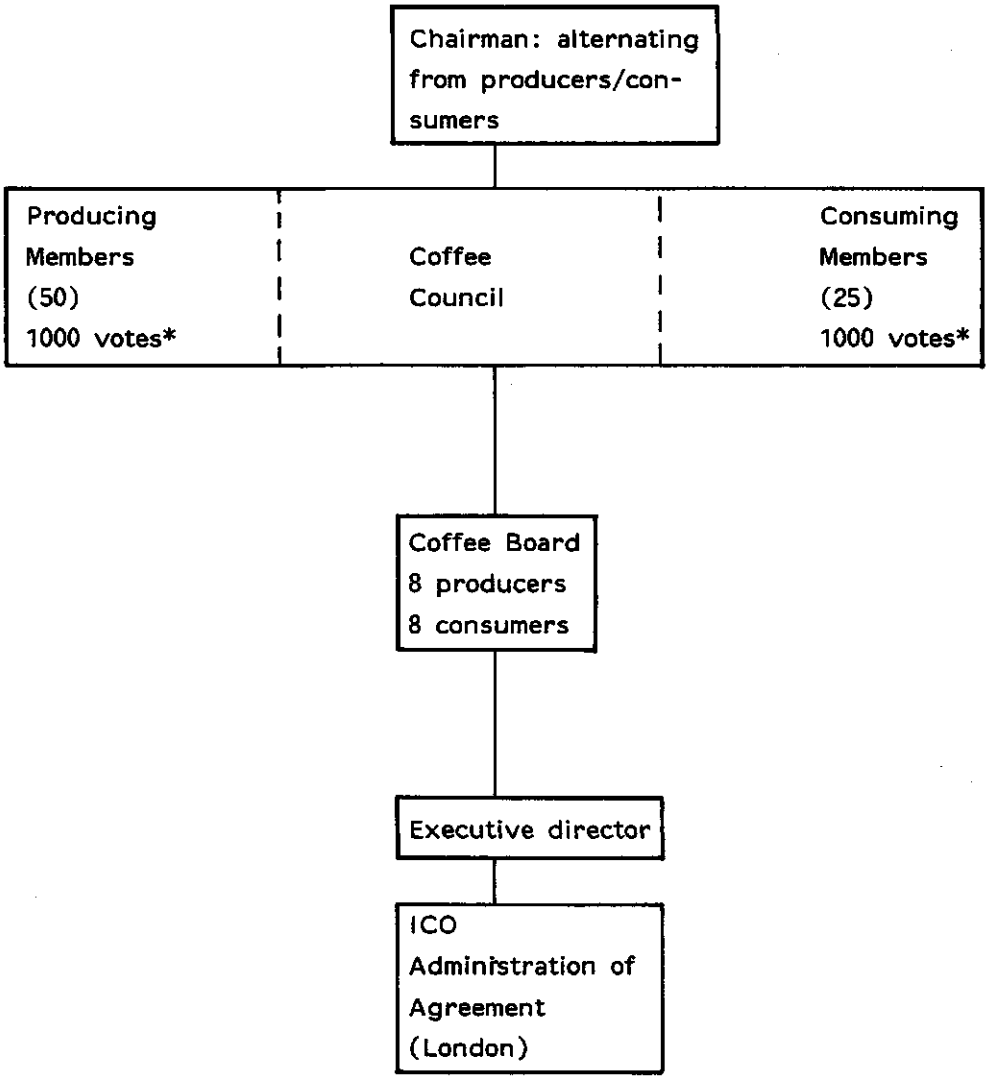
When the indicator price remains 15 consecutive days under the level of 1.34, quotas are then reintroduced.

In the case of a price fall, quotas are decreased by 1 million bags at the price level of both 1.20 and 1.15 dollar. At a lower price level, the Council is convened to discuss measures. The quota adaptations are automatic, unless the Council decides otherwise. Figure 5.1 shows the development of the CIP in recent years.

Organizational structure

The International Coffee Organization (ICO) in London, established under the 1962 Agreement, administers the provisions of the Agreement and supervises the operation of the Agreement (Art. 8). Furthermore, it functions as the meeting point for sessions of the Coffee Authorities, the Coffee Council and the Coffee Board, which form the regulatory and executive bodies of the Agreement (Figure 5.2). The highest authority of the organization is the International Coffee Council, which consists of all the members of the Organization. Each member has one representative on the Council, entitled to cast the votes allotted to the member. The Council has the power to carry out the provisions of the Agreement. Rules and regulations are established when a two-third distributed

Figure 5.2. Organization scheme of the ICO.



* The distribution of the votes is given in Table 5.2.

majority is reached. All other decisions require a simple distributed majority. Votes have been distributed equally among producers and consumers. Both groups have 1000 votes which are allotted to member countries according to the size of export quotas and the import volume. No member may hold more than 400 votes. Each exporting member has four basic votes, whereas each importing member has five basic votes. The remaining votes are divided among exporting members in proportion to the average volume of their respective exports of coffee to importing members in the preceeding four calendar years (see Table 5.2).

The number of votes is decisive for the member's contribution to the budget of the Organization. Both exporting and importing countries finance the Organization's operations. Art. 15 states that if only one country vetoes a proposal in the Council, then the proposal is still considered to have been adopted. Because of the composition of the votes in the Coffee Council as at June 27th 1986, not one country is able to veto a decision. Under the 1968 Agreement, the US had 400 votes. Its relatively declining imports have since then eroded the number of votes to the current 268.

The Coffee Council is convened at least twice a year, but sessions are also held at the request of the Executive Board or in cases of emergency.

The Executive Board is responsible to, and works under, the general direction of the Council. It consists of eight exporting and eight importing member representatives, who are elected every year among importing and exporting members' candidates respectively. The representatives obtain the number of votes cast for them when they were elected, but this must not exceed 499 votes (Art. 17). The minimum number of votes amounts to 75. The work of the Board consists of tasks which have been delegated to it by the Council.

The Executive Director of the ICO is responsible for the performance of any duties devolved upon him in the Administration of the Agreement. He is appointed by the Council. Since 1968 this office has been held by the Brazilian A.F. Beltrão, the former president of the Brazilian Coffee Institute (IBC). The Organization acts as a centre for the collection, exchange and publication of statistical information on world production,

Table 5.2. Distribution of votes in the Coffee Council

Total	Exporting[1] 1.000	Importing[2] 1.000
Angola	9	-
Australia	-	15
Austria	-	20
Belgium/Luxembourg	-	32
Bolivia	6	-
Brazil	252	-
Burundi	11	-
Canada	-	32
Colombia	142	-
Costa Rica	23	-
Cuba	6	-
Cyprus	-	6
Denmark	-	20
Dominican Republic[2]	-	-
Ecuador	21	-
El Salvador	40	-
Equatorial Guinea[2]	-	-
Ethiopia	25	-
Fiji	-	5
Finland	-	20
France	-	87
Germany F.R. of	-	134
Ghana	4	-
Greece	-	11
Guatemala	34	-
Guinea[2]	-	-
Haïti[2]	-	-
Honduras	18	-
India	16	-
Indonesia	45	-
Ireland	-	6
Italy	-	62
Jamaica	4	-
Japan	-	58
Kenya	25	-
Liberia	6	-
Malawi	4	-
Mexico	35	-
Netherlands	-	43
New Zealand	-	7
Nicaragua	14	-
Nigeria[2]	-	-
Norway	-	15

(continued on next page)

Table 5.2. Distribution of votes in the Coffee Council (continued)

Total	Exporting[1] 1.000	Importing[2] 1.000
OAMCAF	104	-
OAMCAF	(4)	-
Benin	(0)	-
Cameroon	(23)	-
Central African Republic	(4)	-
Congo	(0)	-
Cote d'Ivoire	(56)	-
Gabon	(0)	-
Madagascar	(12)	-
Togo	(5)	-
Panama	4	-
Papua New Guinea	14	-
Paraguay	6	-
Peru[2]	-	-
Philippines	11	-
Portugal	-	9
Rwanda	11	-
Sierra Leone	8	-
Singapore	-	16
Spain	-	31
Sri Lanka	4	-
Sweden	-	29
Switzerland	-	20
Tanzania	16	-
Thailand	6	-
Trinidad and Tobago[2]	-	-
Uganda	42	-
United Kingdom	-	42
USA	-	268
Venezuela	4	-
Yugoslavia	-	12
Zaire	22	-
Zambia	4	-
Zimbabwe	4	-

[1] Four basic votes allotted to each exporting member and five basic votes to each importing member under the provisions of paragraph (2) of Article 13 of the Agreement.
[2] Voting rights suspended.
Source: ICO, EB 437/86.

prices, exports and imports, distribution and consumption of coffee. The Council may require individual members to furnish information on coffee production, production trends, exports and imports, distribution, consumption, stocks, prices and taxation.

Furthermore, the Organization has assigned a Swiss expertise agent, SGS of Geneva, to undertake annually the verification of stocks in producing countries. Only recently have representatives from producing countries accompanied these missions to secure a proper inventarisation of the amount and quality of coffee stored in warehouses. In trade circles, previous verifications had given rise to doubts. This information, together with data on domestic consumption and the official exports to member and non-member countries, serves as a base to calculate production in each member country.

In order to comply with the objective "promote and increase of the consumption of coffee consumption by every possible means" (Art. 5), the Promotion Fund has been established. This Fund is administered and financed by exporting countries. It undertakes promotion campaigns in consuming countries in cooperation with the appropriate parties in the importing countries concerned. Furthermore, it engages in coffee-drinking studies in consuming countries.

A Special Fund has been created to finance additional measures to implement provisions of the Agreement relevant to its operation, in particular the verification of stocks in producing countries. It is financed by levies on exports to importing members.

5.3. History of international market interventions

From the beginning of this century various attempts have been made to influence and regulate the prices on the international coffee market. Brazil was the first to restrict its exports to the world market in order to sustain prices. This was initially organized by the State of Sao Paolo. In 1921 the Federal Government intervened and accumulated large stocks (Gordon-Ashworth, 1984; p. 208).

Controls in the international coffee market up to 1940 were thus a single-handed Brazilian action. From 1931 to 1944 Brazil destroyed 78 million bags of stored coffee (Furtado, 1976; p. 185). This amount was equivalent to three and a half years of Brazilian production in 1938/39

(Rowe, 1963; p. 21). Brazil's policy was to prove too costly to bear alone. Between 1931 and 1937 it made repeated efforts to induce other Latin American exporters to agree to an international export restriction scheme, but no-one cooperated (Gordon, 1984; p. 209). The essence of an export restriction scheme, the limitation of exports, did not suit production developments in Colombia and the Central American countries. Between 1920 and 1930 the area under coffee and exports of coffee in Colombia had tripled, partly because of the Brazilian 'valorizacion'-scheme (De Graaff, 1986; p. 134). Also African Robusta production was increasing rapidly.

In 1937, the last of the conferences to discuss multilateral control of supply broke down. Brazil decided to cut its losses and to regain its former market share. Between 1937 and 1939 its exports rose from 12.1 million bags to 17.1 million bags, or 63% of world exports (Gordon, 1984; p. 210).

Inter-American Coffee Agreement

The outbreak of the Second World War in Europe shut off the European market, second only in importance to the US which had 40% of world imports. Prices dropped to even lower levels than prevailing during the depression of the thirties (Payer, 1975; p. 159). Furthermore, the lack of ships for transport to the US caused an increase in world coffee stocks and a further destruction of excess supply in Brazil. The outbreak of the war though did bring a willingness on the part of the producers of Mild coffees, increasingly cut off from their European markets, to engage in a dialogue on an international coffee marketing policy. Consequently, at the initiative of the US and in a move limited to the American continents, the Inter-American Coffee Agreement (IACA) was negotiated in 1940 (Gordon 1984; p. 210). To sustain market prices it entailed the limitation of exports to the United States and Canada. Payer explains the United States's interest in this agreement to arising out of the flirtation of various Latin American countries with the Axis powers (Payer, 1975; p. 159). The US government decided that commodity price support was an essential part of an economic package to keep these countries in the American camp. At that time, Brazil, Colombia, Guatemala, El Salvador and Costa Rica were

dependent on coffee exports for over 50% of their total export revenues.

Fourteen Latin American countries signed the IACA, distributing import quotas among these countries. The price fixed in 1941 was double that which had prevailed in the 1930's, at 13.4 dollarcent per pound, after initially increasing demand from American roasters had even put upward pressure on prices (Krasner, 1973; p. 502-503). This price level though was too low to cover production costs as during the war the general price level had been rising and production accordingly falling steeply. Towards the end of the war, quotas were set so liberally that their effect was drastically diminished (Akiyama, 1982; p. 33). Coffee trees were uprooted and the land used for food crops and other more profitable commodities (Payer, 1975; p. 159). In 1946, when the War was over, Brazilian coffee production was only 60% of the level reached at the beginning of the thirties.

During the War, African production trebled (Gordon, 1984; p. 210). Immediately after the surrender of the German troops, the European market became accessible for coffee imports. Because of the severe balance of payment problems European countries were facing, coffee imports from dollar based Latin American countries were made subject to a tax of 9.6% ad valorem. Imports from the African colonies were exempted from import duties and their market share increased rapidly. The scarcity of coffee on the world market sent prices up. From an annual average of twenty cents per pound in 1946, they rose to 50.4 in 1950 (Gordon, p. 210). Hickmann earmarks this period of high prices as the basis for chronic oversupply in the late fifties and early sixties (Hickmann, 1980; p. 53). In the early fifties prices continued to rise as Brazil's stocks were at low levels and demand in Europe and the US rose with an increase in per capita income.

A severe frost in Brazil in 1953 and the outbreak of the Korean war in 1953 contributed to an intensification of price increases. Lawrence and Cooper state that insecurity at the international political or monetary level often leads to a flight in tangible commodities (Lawrence and Cooper, 1975; p. 685). According to Gray a number of Brazilian traders began to buy up futures contracts on the NYCE to further drive up prices (Gray, 1960; p. 310; Geer 1971, p. 155) During the fifties African exports of

Robusta coffee benefitted from the growth in the instant coffee industry. The low cost Robusta coffee proved a serious competitor to the also low priced but still more expensive Brazilian Arabicas. Robusta was also preferred for its higher yield of instant coffee per kilogram coffee beans. Instant coffee had become increasingly popular in Europe where it was introduced after the war by Nestlé (De Graaff, p.61). The African export market share rose from 14,4% in 1947 to 23.2% in 1956 (Pan American Coffee Bureau, 1965).

Latin American Coffee Agreement

By 1954 coffee country authorities were already aware that a chronic global oversupply situation was on its way, though prices were still high. In that year at a meeting of the Organization of American States (OAS) the proposal was launched to come to an International Coffee Agreement with the participation of producers and consumers. Commodity Agreements had already been installed for Tea (1948), Wheat (1949), Sugar and Tin (1954) according to the principles laid down in the charter of Havana in 1947 (see Chapter 1). The result of this OAS meeting was that a special Coffee Committee with representatives from the US, Brazil, Colombia and Nicaragua engaged in a detailed economic research of the world coffee economy. In 1956 a definitive proposal for a fully fledged agreement was put forward to the OAS, but then the US (responsible for 60% of world imports) declared it would not participate, as an export restriction scheme would hamper the performance of the free market (Fisher, 1972; p. 89). In 1957, when prices were sliding downwards, seven Latin American countries decided to sign an agreement limiting exports through quota allotments for the coffee year of 1957/58. This agreement is known as the Mexico City Agreement. It was not very succesful in preventing further decline in prices, which continued to slide. In 1958 the Mexico City Agreement was reviewed and renamed the Latin American Coffee Agreement (LACA), under which the fifteen largest South American coffee producers were regrouped. France and Portugal, as representatives for their African colonies, promised support for the LACA. The US government, in the words of president Eisenhower, regarded this form of market regulation as a 'sin against free enterprise' (cited in Fisher, 1972;

p. 50). The Secretary of State, John Forster Dulles, declared in the same year that the US realized the potential consequences of strong fluctuations in the export revenues of Latin American countries and that a form of international cooperation was needed (Fisher, p. 27). This realization though was not enough for participation. Payer, Krassner and Fisher agree on the important role played by the National Coffee Association, in which the American coffee industry was organized, in the preparation of US participation in the ICA of 1962 which was to follow, but differ in the analysis of the motives of the NCA (Payer, p. 160; Krasner, p. 507-510; Fisher, p. 22). It became clear that the NCA wanted to secure future supplies of coffee as an element of the American way of life and business, and that coffee producing economies should thus be supported (US Senate 1963; p. 91, cited in Payer, 1975; p. 160). Krasner underlines the NCA's strategy to prevent too sharp a break in prices as to defend their own interests (Krasner, 1973; p. 510).

According to Krasner the NCA lobby took the lead in selling the idea of an ICA to its members, as well as to Congress. Furthermore, the coffee industry was very important, and US coffee imports valued at over 10% of total imports. The State Department had become alarmed by reports by US intelligence, which frequently warned of the potential dangers of the spread of Castroism in Latin America (Fisher, p. 28).

When the LACA was extended in 1959, the US still did not join the Agreement. France and Portugal, representing their colonies, now formally entered it, as did Cameroon and Togo. The LACA did not function very well, as formal control of compliance with the quota provisions was not arranged for, and fraud frequently occurred (Fisher, p. 57).

African participation in the LACA of 1959/60, as represented by their mother countries (France and Portugal), became a fact when Robusta prices continued to fall, whereas, at the same time, exports of Arabica were fetching a more stable, though slightly declining price. Furthermore, Brazil's threat to put its stocks on the market may have been an impetus to African participation in an export restriction scheme. Rowe remarks that though this was a serious possibility, 'the Africans failed to realize that, in its own interest Brazil neither would, nor really could, do anything drastic and at the most might snipe them in particular markets.

They probably feared the US displeasure and the possibility of import restrictions in the interests of the Pan-American political solidarity. But they were mainly influenced by their desire to ensure prices at a level which would put money in the pockets of their farmers and produce relatively satisfactory foreign exchange earnings, just at the moment when so many of the countries involved had become, or were on the verge of becoming independent. The cost of joining the agreement in 1959 seemed small, and most African producers joined in October 1959' (Rowe, 1963; p. 182).

In 1960 the Inter-African Coffee Organization (IACO) was created in order to defend common African interests in the negotiations on international cooperation. As a subgroup, it comprised the OAMCAF (Organisation Africaine et Malagassy du Café) which represented the francophone former French colonies. This organization later joined the ICA 1962 as a group. IACO's objectives were the common study of the problems facing African coffees, particularly by their production, processing and marketing, to ensure the smooth disposal of the production and the optimum level of prices. Its second objective was the study of the consumption of African coffees, and of the publicity needed to increase demand. To this end the Organization collaborated with national and international organizations (Marchées Tropicaux et Mediterannées, March 1980).

The Central American, Mexican and Caribbean countries had in 1945 already organized themselves into the FEDECAME, comprising 14 member states. This central organization though was rather weak, and was frequently bypassed in international negotiations by its members (Fisher, 1975; p. 55). Brazil and Colombia were not organized into a central organization, but were individually represented by their parastatal organizations, the IBC and the FNC.

The 1960/61 Agreement was an extension of the 1959/60 LACA, and still functioned without the participation of consuming countries. Its problems consisted especially in the control on the compliance with quota provisions. The need for control by consuming countries became very clear.

The first International Coffee Agreement: ICA 1962

The impetus for US participation in a fully fledged Commodity Agree-

ment was provided by the Cuban Missile crisis in 1961. Many scholars believe that the loss of US control over Cuba induced Kennedy to agree to US participation in 1961. 'The United States is ready to cooperate in serious case by case examination of commodity market problems. Frequent violent changes in commodity prices seriously injure the economies of many Latin American countries, draining their resources and stultifying their growth' (cited in Fisher, p. 63; Speech before Congress). Since 1898 the US had economically controlled Cuba, the world's largest sugar exporter at that time, by means of its sugar imports. When Fidel Castro took over and nationalized US property on Cuba, the US turned down Cuban requests for loans, and prohibited its sugar imports. In 1960 Castro agreed to exchange sugar for oil and machines from the Soviet Union. With the failure of the Bay of Pigs invasions by US trained Cuban refugees, Cuba was lost to US control. A commodity thus proved an important means of controlling and stabilizing an economy and it was this realization, as well as the previously described NCA interests, which caused US to join the Coffee Study Group. This group, comprising members from producing and consuming countries, prepared a draft which was to serve as the basis for the negotiations over the first long term ICA. Under the auspicies of the UN, the UN coffee conference was convened in New York on July 9th of 1962. The first International Coffee Agreement was signed in September 1963.

Whereas Brazil and Colombia, with 49.6% of world exports, argued for historically-determined quotas, the African countries demanded selective adaptation of quotas determined by specific indicator price ranges per type of coffee. Their market share had grown to 27.9% and they reckoned with a growing demand from the expanding soluble coffee industry. Other Mild producers also pleaded for quotas based on demand. Brazil and Colombia however, wanted to protect their market shares and wanted to effectively limit the rise of exports from both low cost Robusta countries and the Central American producers. They wanted pro rata quota allotment (Kahn, 1978; p. 182). The participation of the major consuming countries did persuade the African countries to join, though their demands were not met. In 1962 no special provision was made for the selective adaptation of prices. The ICA objective was stated as being to

prevent prices from falling below the level prevailing in 1962. No provisions were made for the adaption of a threshold (Gordon, 1984; p. 214).

Another point of issue was the preferential treatment ACP countries received on import taxes in the EC. In the ICA 1962 only a general statement referring to the removal of obstacles to consumption was adopted.

The final quota distribution among the 36 contracting parties in ICA 1962 was based on three elements.

1. The average exportable production of the previous four years.
2. The application of a reduction, the larger a countries' market share.
3. An adaptation for countries with special problems.

The twenty-two importing countries were to limit their imports from non-member producers to the level of the 1960-1962 average. The statistics on which this quota distribution was based were provided by the USDA, but in ICA 1962 provisions were made for its own system of statistical information. Exports subject to quotas had to have a certificate of origin, which was to be sent to the administrative office, the ICO in London.

A major loophole in the agreement was that member exporters were allowed to ship coffee in amounts exceeding their quota to a number of countries which were not large importers of coffee and which had a low per capita consumption. The intention of the Agreement was to increase consumption of coffee in these areas, and at prices which were lower than those prevailing in the ICA regulated market (Payer, 1975; p. 162). Thirty-three countries, among them the Soviet bloc and Japan, belonged to these new markets. Because of the price differentials coffee exported to these markets was often immediately re-exported to Western Europe or the US. This kind of operation earned the name Tourist coffee. Fisher mentions Liberia, Marocco and Aruba as apparently large exporters of coffee, although in Marocco and Aruba coffee is not grown (Fisher, 1972; p. 86). These countries were used as trans-shipment points and formed a loophole in the regulation of the market.

Because of frequent forgery, in 1965/66 the certificates of origin were replaced by official ICO stamps and posted to each participant in ratio to its quota. Custom officials in importing member countries were instructed

not to accept imports without the official stamp. In exchange for this firmer control on exports, which Brazil and Colombia demanded, the African and Central American countries were favoured by a more flexible quota distribution, which they had asked for in 1962. Based on 15-day price indications for the four main categories, the export quotas could be adjusted per category if the price range was exceeded.

In October 1966, four ranges were agreed upon (Table 5.3).

Table 5.3. Price range per category under the 1962 Agreement.

Colombian Milds	43.50	-	47.50	$-cts. per lb.
Unwashed Arabica	37.50	-	41.50	$-cts. per lb.
Robustas	30.50	-	34.50	$-cts. per lb.
Other Milds	40.50	-	44.50	$-cts. per lb.

Source: Driehuis, 1976; p. 92.

Prices were to be obtained from quotations for specified types on the New York market. When these prices were undercut or exceeded on 15 consecutive market days, the export quotas were to be adjusted. From 1966, an annual verification of stocks by an independent expertise agency, SGS of Geneva was introduced in order to obtain an assessment of the real situation of supply. Since 1963 prices had been rising, because of the policy of export restriction and a frost in Brazil in 1963. Maintenance of these prices had been at the expense of considerable stock accumulation, mainly undertaken by Brazil. Prices though had been sliding downwards consecutively. In 1966, Colombia, joined by a number of important producing countries, attempted to counter this trend by organized interventions on the New York market. When Brazil joined this group late in 1967 (comprising Colombia, Ivory Coast, Ethiopia, Uganda, Guatemala, El Salvador and Mexico), the Geneva Agreement was signed, which further restricted exports to prevent a further price fall (Hickmann, p. 58). This unilateral producer action led to the disintegration of ICA 1962, although it did stop a further price fall. In Brazil a huge era-

dication programme was undertaken, destroying 40% of the entire tree population between 1962-1967. This considerably reduced output, and stocks were run down from 1966 until 1975 (see Figure 4.3). ICA 1962 had managed to meet its objective of maintaining prices above the level of that prevailing in 1962 and had secured relatively stable prices, but this had been at the cost of an enormous stock withdrawal by Brazil. The export certificate system had proved inadequate in policing export volumes because of frequent infringements and the inadequate powers of the Council to enforce it (Gordon, 1984; p. 214).

ICA 1968

The negotiations for the renewal of ICA 1962 began in 1967, but were interrupted by the soluble coffee conflict between Brazil and the US (see Chapter 3). This postponed the final signing until 1970. The ICA 1968 closely resembled ICA 1962 and was signed by 41 producing and 21 importing countries. At the same time the Diversification Fund was also established. This was designed to limit coffee production, so to bringing supply back into reasonable balance with demand. Contributions to the Fund were obligatory for exporters with quotas of over 100,000 bags, and were in proportion to exports above that level.

The 1968 production policy provisions were quite specific and carried with them a certain degree of accountability (Kahn, 1978; p. 186). Non-fulfilment of the obligation to define production goals in line with domestic consumption, stock requirements and permitted exports brought about economic disadvantages. Members who did not comply with regulations would not enjoy annual quota increases, could have their voting rights suspended, and could even be forced to withdraw from the organization (Art. 48, ICA 1968). Diversification worked well in many countries and production was brought more or less into line with consumption (Beltrão 1986; p. 4). It was especially the US that had pressed for the inclusion of the Diversification Fund, to lessen the dependence on coffee of exporting countries. ICA 1968 stated that prices were not to fall below the 1962 level as a general rule and contained price ranges for the four main coffee types (Art. 27). This selective adaptation of quotas meant that those for the principal types of coffee were not to be reduced by more

than five percent if the indicator price fell through the agreed low reference price (Art. 37, ICA 1968). ICA 1968 charged the Council to stimulate demand in countries with low per capita consumption, where to exports were not subject to quotas. The Council was to undertake promotion plans for exports to these countries and to control what members exported there. An export quantity goal was set (Art. 40, ICA 1968). Tighter controls were necessary to limit the problem of Tourist coffee. Bags had to te be marked with the words 'New Markets', and exporting members were made responsible for the final destination of their exports. Re-export took place, the amount was deducted from the annual quota.

The ICA 1968 ran into serious difficulties in 1972. The previous year the agreement of Bretton Woods had broken down and the dollar, the unit of denomination for coffee prices, began to depreciate against the other major currencies. In order to maintain the real purchasing power of the coffee dollar, exporting countries demanded an $ 0.04/lb upward revision of the price range. Though the European countries offered 0.02 dollar/lb the US refused to consider any adjustment (Payer, 1975; p. 165).

Furthermore, the US was resentful, because in the late sixties and early seventies Brazil and a number of major producers had not exported their allotted quota in full. They had thus not complied with the Agreement's provisions. This undershipment of quotas was a thorn in the side of the US, which was not willing to support a producers' cartel. Also, the disagreement between the 'traditional' Latin American producers and the newer African exporters over the allocation of export quotas in the context of a period in which prices were rising, led to the suspension of the economic provisions of the ICA in December 1972 (Gilbert, 1986; p. 27). The organization was only kept alive as a source of statistics and as a meeting place, but controls were abandoned, verification of stocks discontinued, promotion scrapped and production policy was set aside (Beltrão, 1986; p. 4). Coffee prices on the international markets, however, rose up parallel to price movements of other commodities.

A series of meetings by producer nations took place in an effort to continue market support on their own. It was agreed by the Geneva Agreement that all 21 producing nations would withhold 10% of their harvest from the market in 1973 (Payer, 1975; p. 167). The Geneva

Group undershipped its quotas and used consumer countries' statistical information and controls convened under ICO to undertake a producers' strategy (Junguito and Pizano, 1981; p. 6). These twenty-one countries covered 90% of world exports (Gordon, 1984; p. 215). In 1974 prices fell back again, and compliance with the producers' agreement provision was low. Brazil, Colombia and Ivory Coast took the lead in organizing a producers' cartel. The post-Opec climate provided a confident atmosphere for the possibility of a combined producers' action aiming at price increases. The difference with Opec though was a much smaller cohesion, as production of coffee is less concentrated geographically than oil. But both organizations disposed of a dominant producer, which could enforce consensus. In November 1974 a producer cartel was formed in Caracas to coordinate export sales. Nineteen countries representing 85% of world exports combined to form the Café Sauves Centrales S.A. Company. This company intervened in the futures market by maturing futures, thus enforcing delivery which in turn squeezed supply. Furthermore it carried out international stocking of coffee (Junguito and Pizano, 1981; p. 6).

ICA 1976

In 1975, the announcement of a very severe frost in the most important producing areas in Brazil sent prices up. Half of the existing tree population was destroyed by the frost. At the same time Colombian production suffered from heavy rains and floods, and political unrest in Angola affected Robusta exports.

In 1976, despite the fact that prices were rising, a new Agreement was negotiated. According to Gilbert consumers judged that through participation they could exert some influence on the producers (Gilbert, 1986; p. 27). However, no agreement was reached on support prices. The 1976 Agreement incorporated a number of features.

1. A clear division was made between member and non-member markets. The former was to be a quota market, the latter a non-quota market, designed to improve controls.
2. Individual quotas were divided in fixed and variable parts, the latter taking into account the size of the stocks held by each country.
3. The possibility of introducing an internationally controlled reserve

stock was discussed, but dismissed. The Unctad framework of the Integrated Programme for Commodities Prices Stabilization for the ten 'core' commodities was at issue, but a discussion on the introduction of a buffer stock policy in coffee led to the dismissal of this idea.

4. Verification of stocks and promotion were resumed.
5. The Diversification Fund was scrapped from the Agreement, and diversification became the explicit responsibility of producing countries. The supply-demand balance was such that a shortage of coffee existed in 1976 and consumers did not advocate a diversification policy (Kahn, 1978; p. 186).

Unlike former agreements, the 1976 Agreement required that quota restrictions were not to come into force until coffee prices fell to a stated level. The bottom price was, fixed by the Council, and was to be below the average prices of Other Mild and Robusta coffee in 1975 (Kahn, 1978; p. 183).

In the Agreement a clause was included which empowered the Council to establish a Composite Indicator Price, instead of using the market price of any particular variety (Art. 33, ICA 1976).

Failure to agree on the support price composition led to actions by Brazil and Colombia. With El Salvador, Ivory Coast and Mexico they coordinated export sales via the Compania Salvadorena which intervened heavily in the futures market. In 1977, trade in futures was suspended and the Commodity Futures Trade Commision filed a complaint against unauthorized trade practices in 1979 (Kuhn, 1985; p. 995). In August 1978, when prices reached a brief low at the New York market, the Bogota group was established (Brazil, Colombia, Costa Rica, El Salvador, Guatemala, Hondurs, Mexico, Venezuela). They set up a fund for the coordination and finance of stockholding and also partly for the manipulation of the London and New York markets. In 1979, trading on the futures market was limited, and the organization was left with large losses (Gilbert, 1986; p. 28). Junguito and Pizano state that 'these operations were financed by Euro dollar loans' (Junguito and Pizano, p. 10). The intrusion upon industrialized countries' exclusive markets of futures, led the US to restrict LDC's operations on its market. The rules were changed and the consortium was pressed to eliminate its actions as a precondition

for a new International Coffee Agreement.

In 1980, prices had come down, and in order to redress this trend, the Bogota group met in Mexico City in May 1980, and set up a new company, Pancafé Productores de Café S.A. which was to formally undertake the support activities of the Bogotá group and absorb previous losses of Pancafé. Despite the withholding of supplies, prices continued to slide throughout 1980, and in September consumers agreed to activate the economic price support provisions of ICA 1976, on condition that Pancafé would cease its activities.

The current composite indicator was established, and quotas were installed. The quota distribution in 1980 was based on a contingency formula, whereby each country would have its share calculated on the basis of the best historical production level in one of the two periods: 1968/72 or 1976/ 78 (Gordon, 1984; p. 216). This quota allocation procedure formed a compromise between African countries, with expanding production, and Brazil, whose output had fallen. Between 1975 and 1980 many exporting countries had substantially increased their plantings in response to the favourable prices prevailing in previous years. Adjustments to the agreed formula were made possible because Angola, thwarted by civil war, could no longer fulfil the quota to which it was entitled. The leeway this provided, and because Brazil was still rebuilding its stocks and thus declaring shortfalls, gave other countries the opportunity to obtain a larger quota share (Dauster, 1986; p. 2/3).

Discussion

From the foregoing discussion on controls in the international coffee market, a number of points stand out. It can be concluded that some form of intervention at most periods from 1940-1986 existed, either in the form of producer cartel or producer-consumer agreements. In the absence of the latter, producer alliances have on various occasions restricted exports, but their main problem was the lack of controls on the compliance with quotas. Especially before the establishment of ICA 1962 under which certificates of origin were introduced in 1965/66, no formal procedure for control existed. Later, in 1973 for instance, producers used statistical information on the origin of imported coffee in consuming countries to

enforce unilateral export restriction schemes.

The producers' actions always included the most important producers Brazil and Colombia, joined by other Latin American producers and, on some occasions, other important exporters from Africa. The dominance of Brazil, politically supported by Colombia, provided a consensus on quota distribution both within and outside the ICA framework (Gilbert, 1986; p. 46). This was important enough for previous producer alliances to continue export restriction in order to sustain prices. As Brazil was the dominant stockholder with about 80% of world stocks, the threat of putting this on the market led other producers to agree on overall export restrictions. Colombian cooperation helped to give a large coverage of the coffee market.

The most important instruments which producers' alliances used in sustaining or increasing prices, were export restriction schemes. Within the ICA framework this took the form in 1973 of undershipments, while before 1962 and between 1973 and 1980 quotas were allotted among the participants. It was always difficult for producer alliances to verify the retention efforts and sanction violations. Within the ICA framework it was the consumers' task to control and police the Agreements regulations.

These difficulties led producer alliances to design their strategies through price mechanisms (Junguito and Pizano, 1981; p. 6). The Producers' Group interventions in 1974 and 1975 as well as its actions in 1977-1979 were oriented towards reducing the market supply by maturing futures in the futures market, and by international stockpiling. Another way to influence price formation, possible because of exporting governments' direct intervention in coffee affairs, was through the surrender price scheme or minimum export prices. Countries using an established exchange control system compromised exporters to hand in a minimum amount of foreign exchange to the central bank per bag exported, thus forcing them to sell at minimum export prices.

Important conditions for establishing interventions were the market situations in current prices and stocks, as well as the production expected to come to the market. The influence of sudden frosts or droughts in Brazil on various occasions disrupted or accelerated market trends and to

a large extent influenced the negotiating position of producers and consumers.

5.4 Problems with the system of export quotas

General problems

An export quota system with historically determined quotas has four general problems (Gilbert, 1986; p. 15).

1. It tends to freeze the distribution of production, resulting eventually in inefficiency.
2. It fails to make allowance for planned growth in exports, so that countries with rapidly expanding production have little incentive for membership.
3. It provides an incentive for illegal or quasi legal evasion.
4. It may encourage countries to overexport in non-control periods so as to establish larger quota entitlements.

The rigidity of the quota system benefits the historically larger producers, as quota are determined on an ad hoc basis, whereas perhaps more efficient smaller producers and countries with expanding production are effectively constricted. As the global quota cake has to be divided among exporting members, an expansion of one member's individual quota will necessarily involve a quota reduction for one or more other exporting members, given only a gradual increase in importing members consumption.

The outcome of the quota negotiations is determined by factors like a country's political leverage, power and negotiation ability. The main goal of member countries is to maximize their export revenues, whereas the argument of efficiency is mainly used by critics of the static export quota distribution system, who stress that the market is prevented to do its work: the highest exports with the most efficient producers. However, the export quota system has not led to lack of incentive to become producing member of the Coffee Agreement, as the major consumers are all member.

The third general problem with historically determined export quotas

according to Gilbert is the incentive to illegal or quasi legal evasion. As the Agreement is an international market regulation, there are many loopholes and opportunity for fraud. Administration in exporting countries in general is not very accurate and allows evasion of the provisions of the Agreement. In the course of the history of the Agreements, a more refined system of controls has gradually been developed, and is still being adapted.

The fourth problem Gilbert discerns is the potential encouragement for countries to overexport in non-control periods to obtain larger quota entitlements. This can sow the seed for oversupply in future periods if governmental organizations allow domestic producer prices to increase production in reaction to world market prices.

The allocation of quotas

Alhough both the 1976 and the 1983 Agreements contained detailed provision for automatically determining the distribution of export quotas among exporting countries, this has, in practice, never been applied. As

Table. 5.4. Share in global basic quota for selected countries, 1982-85 (percentages).

	Coffee year		
	82/83	83/84	84/85
Brazil	30.3	30.5	30.5
Colombia	16.3	16.1	16.1
Cote d'Ivoire	7.3	7.2	7.7
Indonesia	4.6	4.5	4.6
Mexico	3.6	3.6	3.6
El Salvador	4.5	4.4	4.4
Guatemala	3.4	3.4	3.4
	70.0	69.7	70.3

Source: ICO QSB 36, 1986.

such, the quota allocation has remained subject to an annual ad hoc distribution.

The quota distribution among the larger producers has remained fairly stable for the last years (see Table 5.4), though recently considerable pressure from both expanding producers and consuming countries has been put on this status quo situation, from different motives.

Mainly because of the high prices prevailing in the late seventies, there was an increase in planting in a number of countries. The results of this are now beginning to enter the market (Dauster, 1986; p. 4). At the Council meeting of September 1986 seven producing members requested a larger market share, thus putting especially Brazil's market share under strong pressure. Brazil in 1986/87 was not able to fulfil its export quota, as drought had greatly reduced production and the expanding producers asked for an adjustment of Brazil's market share. In 1980, requests from countries with expanding production had been accommodated by the reduction of the quota Angola had agreed to, since the political situation from 1975 onwards had greatly reduced production and exports (Dauster, 1986; p. 4). This had given a number of producing members a larger quota, without altering the quotas of the other producers. In 1986 the step by the dissident producers was backed by consuming countries, which argued in favour of the implementation of Art. 35 of ICA 1983, concerning quota distribution on the basis of both historical basic quota and the current volume of verified stocks. Allen Wallis of the US Department of State remarked that "in order to stabilize prices effectively and efficiently the Agreement had to reallocate quotas according to an exporter's available supply; unfilled quotas should be reallocated to others quickly and efficiently. In fact, the rigidity of the allocations under the ICA means that some members have difficulty filling their quotas. For others, many of them countries of importance to the US the quota allocation is insufficient to market their coffee to member countries, so they have to find non-member outlets. This is the unfortunate outcome of any quota allocation system which reflects export performance of an earlier period. In addition, reallocations of quota are subject to political bargaining in the producer caucus instead of reflecting a country's competitive ability or the political interests of consuming countries" (Wallis, 1986; p. 23).

The market situation during the most recent quota disputes was formed by a gradually increasing oversupply, the causes of which have already been mentioned, and a drought in Brazil which, for a short period, sent the composite indicator price to such levels that quota had to be suspended. Reintroduction of the quotas was possible when in mid-1986 the price went below the price level of 134.5 dollarcents per pound. In the Council however, no agreement was reached on the quota distribution. For the first time in the history of ICA, consumers actively sought to influence the quota distribution system and to hamper consensus among producers. This consumer attitude reflected the general climate surrounding commodity agreements. In 1985 the Tin Agreement had collapsed, and interventions on international commodity markets were generally being viewed with less enthousiasm (see also Gilbert, 1986; p. 1/48).

The consumer attitude in attempts to reduce Brazil's market share, (which, with the proposed scheme is sure to take place as its stocks are at rather low levels) is fed by the fact that Brazil has an unstable production volume and is responsible for a large part of world production variation (see Chapter 2). The sudden downward swings in production have caused large upswings in prices (1976-1980; 1986) leading to large increases in the import values of coffee for consuming countries. A smaller Brazilian quota would help the stability of supply. On the other hand, the Brazilian debt service is based on export revenues of which coffee exports form around 10%. A large share of this debt is owed to US banks. As such, the mainly Brazilian-US controversy is also related to similar aspects in the political arena. The European Coffee Federation has requested the determination of export quotas on the basis of 'shopping lists'. The most preferred composition of demand of all consuming countries has been proposed to form the basis for a quota distribution. This would lead to a reduction in Brazilian exports, and an increase in the more popular Colombian and Other Mild coffees. The rationale behind the official consumer proposal concerning the automatic determination of quotas is, apart from helping stability of supply, the overall stimulation of supply. Furthermore, the sale of excess production at lower prices to non-member consumers such as the Eastern Bloc would be reduced, as this would decrease an exporting member's entitlement to its variable

quota share.

A primary concern of consuming countries is thus the guarantee of a secure supply at stable prices. To help obtain this objective, a quasi buffer stock or international reserve stock has been proposed (Wallis, 1986; p. 24; Kahn, p. 190). Also the ICA 1983 Art. 51 states that the Council has to undertake a study of the feasibility of supporting the objectives of the Agreement by an international stock arrangement. An international stock policy however, is very difficult to implement with a heterogeneous product like coffee. The composition of the stock would have to take into account issues such as variability of production and exports of certain types, demand pattern for certain types and the overall size of the stock. As Brazilian production and exports have been subject to the strongest variations, its produce should form a very large share of this reserve stock. The costs of maintaining a sufficiently large stock to be released on the market when indicated by price rises would be very high. Apart from interest costs and storage costs, the stored produce would need rejuvenation or replacement, as coffee can be stored for only a limited period (three to five years). The advantage of an international stock arrangement near the international markets would be the quick reaction to price rises. Logistical problems and economic compulsions in the past have caused only the slow release of available stocks in producing countries, thereby aggravating the generally strong reactions of futures markets to alarming news.

Brazil and Colombia, however, are heavily opposed to this proposal, as it reduces their opportunities to influence the market by unilateral actions and, in the long run, might endanger their current market shares. Along with the practical problems in composing the buffer stock, and the principal reluctance of some consumer members to increased intervention, these expected consequences have put the amendment to export quota to one side.

The non-quota market

One of the major consequences of the inherent rigidity of the quota distribution system is the gradual increase of exports to non-member

countries. Countries with expanding production and stocks are faced with export quotas which do not increase as rapidly as the amount available for exports, and thus they look for a leeway which is provided by non-member countries. In the 1962 and 1968 Agreements a provision was made for exports to non-member countries with low per capita consumption and considerable potential for expansion of demand (Art. 40 (1962); Art. 40 (1968)). The most important countries, which were listed in Annex B of both agreements were those of the Eastern Bloc, the Middle East and South Africa. Consumption in the non-member countries in the periods covered by both agreements was low and almost all exports were covered by the economic provisions of the agreements (In 1961, 6.1% of all imports were to non-member countries (Geer, 1971; p. 248)). The total annual global quota was adjusted to the exports to the 'new' markets (Hoffmeyer, 1976; p. 93).

No mention was made of discounts given to non-member countries, as Brazil, with the major part of world producer stocks, conducted its own oligopolistic price policy. In 1976/77 exports to non-member countries constituted 9% of all exports (Hermann, 1984; p. 142). The absence of

Table 5.5. Exports per destination, 1976-85.

	(1) exports to all destinations	(2) exports to members	(3) exports to non-members	3/1 x 100%
76/77	53,315	48,698	4,617	8,6
80/81	59,439	51,646	7,793	13,1
81/82	63,653	54,649	9,004	14,1
82/83	65,777	55,248	10,529	16,0
83/84	70,052	60,020	10,032	14,3
84/85	68,939	57,548	11,391	16,5

n.a. = not available

Source: ICO QSB 1986, Hermann, 1984.

Table 5.6. Exports by exporting members to non members. October-September 1979/80 to 1984/85 (000 bags)

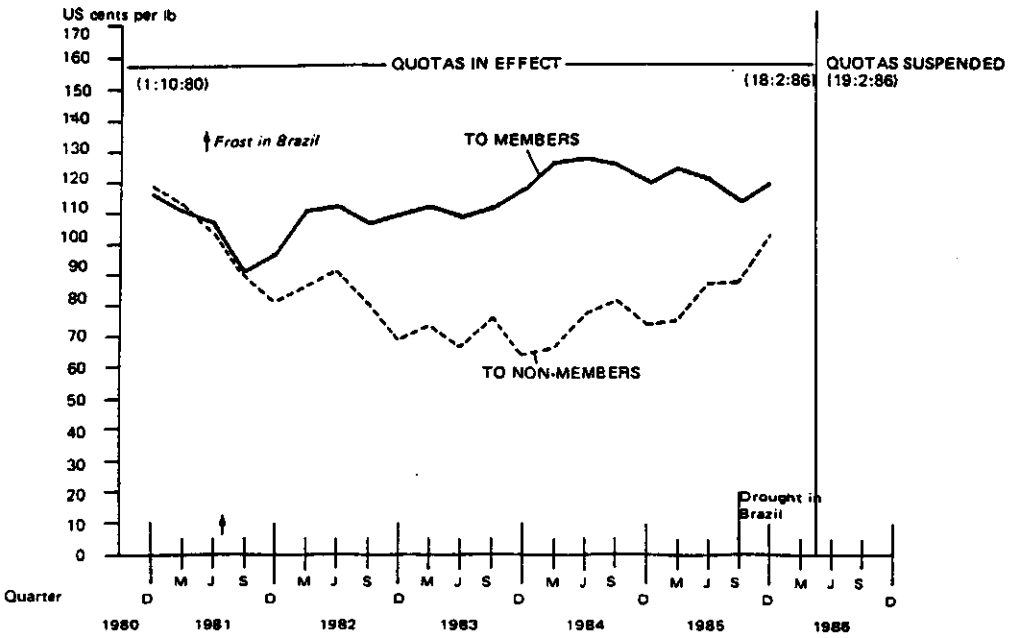
Exporting member	October-September 1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
	(1)	(2)	(3)	(4)	(5)	(6)
Total	6,128	7,793	9,004	10,529	10,017	11,400
Sub-total: members entitled to basic quota	5,850	7,534	8,652	10,214	9,841	10,956
Colombian milds	969	1,122	1,609	999	1,064	1,193
Colombia	862	737	943	709	836	919
Kenya	49	95	402	136	125	274
Tanzania	58	290	264	154	102	-
Other milds	1,027	1,797	2,306	4,736	3,297	4,897
Costa Rica	20	263	336	609	571	887
Domenican Republic	91	107	59	-	-	36
Ecuador	174	180	307	435	166	311
El Salvador	13	27	2	375	396	60
Guatemala	2	119	651	235	33	1,258
Honduras	2	78	6	481	210	439
India	623	689	602	534	422	593
Mexico	37	69	38	2,231	830	1,026
Nicaragua	28	137	111	484	116	38
Papua New Guinea	1	118	174	170	298	21
Peru	37	11	20	181	255	228
Brazilian & O. Arabicas	2,126	2,749	1,681	1,907	3,003	1,977
Brazil	1,809	2,476	1,572	1,735	2,821	1,818
Ethiopia	317	273	109	172	182	159
Robustas	1,758	1,867	3,056	2,572	2,478	2,889
Angola	600	451	317	279	161	187
Indonesia	117	366	1,450	1,567	2,107	2,571
OAMCAF	(822)	(979)	(1,186)	(718)	(207)	(101)
- Benin	0	0	0	0	0	0
- Cameroon	18	83	107	187	44	-
- Central African Republic	0	-	0	0	0	0
- Congo	0	0	0	0	0	0
- Cote d'Ivoire	843	627	786	408	163	90
- Gabon	0	0	0	0	0	0
- Madagascar	161	268	292	124	0	11
- Togo	0	0	0	0	0	0
Philippines	49	4	2	2	2	1
Uganda	163	38	73	0	0	0
Zaire	8	28	28	5	-	5
Sub-total: members exempt from basic quota	249	260	352	315	176	444
Arabicas	219	223	312	260	168	201
Bolivia	26	14	10	5	1	0
Burundi	13	5	35	0	0	0
Cuba	49	88	122	135	102	45
Haiti	0	0	0	0	0	-
Jamaica	-	-	2	-	-	-
Malawi	2	1	-	0	0	0
Panama	0	0	0	0	0	0
Paraguay	55	91	83	56	30	59
Rwanda	3	7	50	50	0	0
Venezuela	0	0	0	0	0	0
Zambia	0	0	0	0	0	0
Zimbabwe	72	17	9	13	35	87
Robustas	30	37	41	55	8	242
Equatorial Guinea					0	0
Ghana	0	0	0	0	0	0
Guinea	15	8	3	0	3	0
Liberia	2	19	31	-	0	0
Nigeria	0	0	0	0	0	0
Sierra Leone	2	0	0	0	0	0
Sri Lanka	2	1	0	0	0	0
Thailand	-	-	0	48	3	242
Trinidad & Tobago	10	9	6	6	2	1

Due to rounding the totals may not always reflect the sum in the relevant components.
- Less than 500 bags.
Quarterly Statistical Bulletin, number 35, July September, Information received up to January 30th, 1986.
Statistics on Coffee Organization, International Coffee Organization.

export restrictions in the period 1973-1980 meant that no difference existed in prices between the member and the non-member market, and exports were possible to every country paying the world market price. When, in 1980 quotas were reintroduced, this again led to a division between the member and non-member market.

In 1980/81, 13% of total exports by exporting members were directed towards non-member consumers, and this increased in 1984/85 to 16.5% of all exports (see Table 5.5). These exports were, to a large extent, directed towards the Eastern Bloc. Comecon imports for 1984/85 are estimated at 4.3 million bags, almost half of total non-member exports (ECF, 1985; p. 2).

Figure 5.3. Unit value of exports of coffee to members and non-members, quartly averages commencing October-December 1986.



Source: ICO, EB 2382/84 Rev. 12, 1986.

The major exporters to the non-quota market in 1984/85 were Indonesia (2,6 million bags), Brazil (2,3 million bags) and Colombia, Guatemala and

Mexico. Table 5.6 shows that a few countries were responsible for the exports to the non-quota market. It is interesting that there are no African non-members exports.

For a number of these exporters, exports to the non-quota market almost equalled their quota market exports in volume. The average price of exported coffee to the non-quota market relative to the quota market price since the instalment of the quota system showed a strong decline from the end of 1981 up to mid 1984, when prices were half of that prevailing on the quota market (Figure 5.3). To explain the formation of this considerably large second market production figures must first be studied closely. As a result of the high prices in the period 1976-1978 in a number of countries, coffee tree planting was stimulated, especially in those countries where governmental organizations had passed through the prices prevailing on the world market. These had tripled in real terms. Production had increased from 20 million bags in Brazil and 11,8 million bags in Columbia in 1978/79 to 32 million bags in Brazil in 1982/82 and 14 million bags in Colombia in 1980/81.

Indonesia, Costa Rica, Honduras and India had also increased their production considerably (see Table 2.7). Storage of production was especially poor in Costa Rica and Guatemala (FT, 16 sept. 1985), and African countries were also confronted by this problem. This provided a stimulus for exports to non-member countries. In 1982, many countries began facing severe balance of payment problems as commodity prices were low and a number of countries faced heavy foreign debts. In order to increase the inflow of foreign exchange, countries entered the non-quota market, offering large discounts for coffee of qualities similar to that on the quota markets.

A side effect of this market separation was the encouragement it provided for illicit trade. Some estimates place the volume of the Tourist Coffee at 3 million bags. Considerable profits could be made by re-exporting coffee from the non-member market to member markets.

The discounts given to non-members angered the consuming members who had to pay substantially higher prices. They argued that they were subsidizing consumption in non-member countries of which the Eastern

Bloc was the most important. The US strongly opposed the operation of a two-tier market. Wallis, the Under Secretary for Economic Affairs of the US Department of State, declared that benefits to the Eastern Bloc were estimated at about 110 million dollar annually (Wallis, 1986; p. 20).

According to Kaul, consumers had little legitimate complaint since their supply needs were supposedly being well met and Agreement obligations on supply were being fulfilled (Kaul, 1986; p. 7). However, growing competitiveness among the various producers for some share of the non-member market eventually caused the exporters to delay shipments to member countries in order to offer deals to interested non-member purchases. R. Praeger, US representative at the ICO was the one who linked non-members' sales to undershipments of exporters. The supply was thereby tightened and stocks, originally serving as a buffer against supply tightness, were depleted (Praeger, 1985).

This ensued artificial tightness of supply on the member market induced consuming members to push for new rules to govern sales by members to the non-member market. At the April 1985 Board meeting Resolution 336 (WP 5/85 ICO) was adopted whereby any future sales to the non-member market were required to be at prices no less than those paid by ICO members for coffees of comparable quality (Kaul, 1986; p. 7). Initially, this amendment decreased the price differential between the two markets, and the difference was to disappear when quotas were suspended on February 18th, 1986.

Shortfalls and undershipments

Art. 3 of ICA 1983 lays down that exporting members unable to fulfill their allocated annual quota have to declare a shortfall to the Council, six months before the end of the coffee year. To ensure that total global supply is not undercut by a member's inability to export, the amount of the shortfall has to be redistributed proportionally among the other exporters. Failure to declare a shortfall renders the country formally liable to a penalty in the form of a reduced quota share in the following year. Nevertheless on several occasions, exporting members have failed to declare shortfalls and this has given rise to serious disputes in the Council. In May 1986 global quota increases of 1 million bags were in-

duced by the inability of some African producers to export their quota in full (Roberts, 1985; p. 21). The 1986 drought in Brazil has led to a disastrous reduction of exportable production. The shortfall from its annual quota is such that even the suspension of quota restrictions has not been able to restore equilibrium. Several minor exporters have been able to fully export their quota only with the utmost difficulty. Ethiopia in 1984/85 encountered logistical problems because of political strite, and a number of West African countries faced harvest failures in 1982/83 due to climatic conditions. Both from the point of view of supply as from that of price, consumer members are very anxious to ensure that quotas are entirely filled. Producer members however are not very anxious to declare shortfalls since this may influence future quota negotiations. A country that admits officially to be unable to comply with its supply obligations is put in a difficult negotiating position. Consumer members have repeatedly clearly stressed the problem of undeclared shortfalls, but the practice of the last six years does not confirm their anxiety over supply.

Closely related to the shortfall debate between producers and consumers is the problem of undershipments. In ICA 1983 this has been defined as "the difference between the annual export entitlement of an exporting member in a given coffee year and the amount of coffee which that member has exported to quota markets in that coffee year unless this difference is a shortfall" (Art. 3). Furthermore, to maintain an orderly flow of coffee to the world markets, exporters are not permitted to export more than 25% of their allotted quota per quarter (Art. 36, ICA 1983). Consumers state that exporters frequently fail to comply with this obligation and do not distribute their quota evenly over the four quarters, thus causing an artificial tightness of supply for certain types of coffee in certain periods. Some importers have argued, as the US did at the 1985 ICA Council Meeting, that some exporting members deliberately undership in order to increase prices. It is also said that some producers undership in order to await the Brazilian winter effects (May-August) when the risk of frost occurs. Exporting countries, though, maintain that the pattern of shipments reflects the seasonal nature of production, and the slow response of exports to quota increases in a rising market is blamed by exporters on logistical problems. Both landlocked countries

especially like Uganda and Burundi and countries with harbours like Colombia have to deal with a limited port infrastructure when handling sudden increases in exports (Financial Times, January 11th, 1986).

As described under non-quota exports, consumers have linked the occurrence of undershipments to the rise in sales to non-member countries. They state that exporters have given preference to non-member sales in executing orders (in the light of the strong competition on this market) and thus undershipped their quarterly quotas to the market (Kaul, 1986; p. 7). In the past, the larger exporters have undershipped their quotas in order to sustain world market prices, and have done so within the ICA framework. This formed one of the disagreements between consumers and producers in the 1968 Agreement, when the US complained about exporters not exporting their quota in full. In 1973 the Producers Group (Geneva Group) also undershipped their quota allowances, using the still existing controls on importing countries to undertake the producers strategy (Junguito and Pizano, 1981; p. 6). Within the current ICA, annual undershipments are only small (see Table 5.7). Consumers'

Tabel 5.7. Global quota and actual export by all exporting members (million bags), 1980-85.

	Global quota	Actual exports	Difference quota exported (%)
1980/81	51.4	51.6	+ 0.5%
1981/82	55.4	54.6	- 1.5%
1982/83	55.2	55.2	0 %
1983/84	60.2	60.0	- 0.3%
1984/85	58.2	57.5	- 1.2%

Source: ICO, QSB 35.

complaint, that producers do not evenly distribute their quota over the quarter seems, on aggregate not to be justified. However, for specific types of coffee this may well be the case.

The problem of the instability of the dollar

The price objective of ICA since 1980/81 has been to maintain the 15-day moving average of the composite indicator price between 1.20 dollarcents and 1.40 dollarcents per pound, with quota adjustments at 1.15, 1.20, 1.40, 1.45 and 1.50 dollars. The denomination of the composite indicator price in dollars did put the agreement under pressure in 1971 when the Agreement of Bretton Woods broke down, and the dollar began (temporarily then, and for good in 1973) a free float against the other major currencies. As the purchasing power of each coffee dollar measured in other major currencies decreased, coffee-exporting countries asked for a revision of the price range. This was not agreed to and was one of the factors which led to the disintegration of ICA 1968 in 1973. Recently, the strong appreciation of the dollar between 1980 and 1985 caused a strong increase in the domestic currency price of coffee for non-dollar linked importers, among which were the major markets in Europe. Coffee prices in dollars however remained fairly stable during this period. For example between the fourth quarter of 1980 and that of 1984, the average world coffee price measured by the CIP in dollar terms increased 8.4% whereas the average coffee price in German marks during the same period increased by 73%. In French francs this increase amounted 131%, and in

Table 5.8. Price of coffee (CIP) in domestic currencies, for selected countries in the fourth quarter: 1980 and 1984.

Country	1980 IV	1984 IV	Change
Germany (DM)	1.911	3.053	+ 73 %
France (FFr)	4.422	9.363	+ 130 %
United Kingdom (£)	0.419	0.822	+ 112.7%
United States (US$)	1.2363	1.3404	+ 8.4%

Source: IMF, 1986.

Table 5.9. Production of Arabica and Robusta in countries producing both types (000 bags).

Crop year commencing	Uganda	India	Brazil	Tanzania	Indonesia	Ecuador
	1 Oct.	1 Oct.	1 Apr.	1 Jul	1 Apr.	1 Apr.
1982/83						
Total	3200	2166	16175	889	5333	1414
Arabica	220	1238	14565	681	533	813
Robusta	2980	928	1610	209	4800	601
% of Robusta to total	93.1	42.8	10.0	23.5	90.0	42.5
1983/84						
Total	3400	1750	30383	827	6000	1374
Arabica	240	1178	28283	636	600	748
Robusta	3160	572	2100	191	5400	626
% of Robusta to total	92.9	32.7	6.9	23.1	90.0	45.6
1984/85						
Total	3500	3166	21805	818	6000	1502
Arabica	245	1333	19715	637	600	837
Robusta	3255	1833	2090	181	5400	665
% of Robusta to total	93.0	57.0	9.6	22.1	90.0	44.3
1985/86						
Total	3300	2166	32616	890(e)	6000	1975
Arabica	250	1033	29956	707	600	1210
Robusta	3050	1133	2660	183	5400	765
% of Robusta to total	92.4	52.3	8.2	20.6	90.0	38.7

(e) Estimated

Source: ICO, WP board, 635/86

English pounds 112% (see Table 5.8). Coffee prices for consumers in non-dollar based importing countries thus strongly increased as a result of the dollar appreciation. The European countries therefore argued that the range should be lowered. The following depreciation of the dollar against the other major currencies from February 1985 onwards again

worsened the terms of trade of exporting countries, measured by non-dollar currencies:

This instability in the currency of denomination of coffee prices has led to considerable difficulties (Beltrao, 1986; p. 5). Within the International Cocoa Organization (ICCO) the instability of the dollar had led to the adoption of the SDR (Special Drawing Rights) as the unit of denomination (Financial Times, July 18th, 1986). Since 1979 the SDR has been composed of a trade-weighted value of the major five currencies (US dollar, German mark, Japanese yen, French franc and English pound sterling). Instead of dollars, the indicator price on which the bufferstock manager bases his buying and selling decisions is denominated in SDR, with the aims of making the Cocoa Agreement more immune to currency movements. Trade is still conducted in dollars. A major difference between the Cocoa Agreement and the ICA is the membership of the US, which is not presented in the ICCO. This has probably facilitated the adoption of the SDR. So long as it is a member of the ICA, the US will not allow a reduction in the role of the dollar as a key currency. A number of scholars acknowledge the suitability of the SDR for price stabilization purposes (Gilbert, 1986; p. 21; Lanjouw, 1985; p. 1197). At the Council meeting in February 1987, producers put forward the proposal to raise the official price range from 120-140 to 134-154 US cents. However, this idea was not welcomed by consumers (Agri Service, no. 234; March 7th, 1987). It can be concluded that the instability of the dollar has put a strain on the Agreement, but alteration of the unit of denomination is not likely.

Selectivity

Selectivity entails the selective adaptation of a quota for a certain category of coffee as a result of price movements, reflecting a change in consumers demand for that category. In previous Agreements (1962, 1968) provisions were made for limited increases in quotas when prices for a certain category indicated a rising demand. For example, had been granted to African exporters who were facing expanding demand for their Robusta coffee.

Gilbert maintains that as in the current Agreement no account is taken

on the allocation of quotas for the relative demands for different growths (Robusta, Mild Arabicas and unwashed Arabicas) and different grades within the growths, the result has been a tightness of supply for particular varieties of coffee at times when additional supplies have been available in the producing countries. These countries have however not been allowed to export these additional supplies to the member consumers, since their quota has been full. This according to Gilbert, constitutes a welfare loss, generated by the inherent inflexibility of the quota system (Gilbert, 1986, p. 30). In the 1986 Council meeting, consumers argued that before February 1986, when quotas were suspended, the quota distribution between producers was unrealistics as it did not accurately reflect demand and supply and thus encouraged price fluctuations (Agri Service, no. 233, 1987).

However, with the increase in the number of countries growing more than one variety of coffee (Table 5.9) supply is expected to react increasingly flexible to demand for certain growths. The expanding Robusta production in Brazil, begun in 1975 in the State of Parana, is a good example of this trend (Brazil Country Report, 1981; ICO London). In India and Ecuador about half of total production is Robusta, whereas these countries are officially classified as Other Mild producers.

Table 5.10. Initial and final global quota.
In million bags per coffee year, 1980-86.

Year	Initial quota	Final quota	Difference
1980/81	57.4	51.4	- 6.0
1981/82	56.0	55.1	- 0.9
1982/83	52.8	55.2	+ 2.4
1983/84	56.2	60.2	+ 4.0
1984/85	61.0	58.2	- 2.8
1985/86	58.0	(1)	

Source: ICO.
(1). Quotas were suspended, February 1986.

In the 1983 Agreement no provision is made for these developments as the classification of producing countries is based on historical production tradition. One of the adverse effects of a quota market such as the ICA is that producers have less incentive to maintain the quality of their output. Those countries which have allowed coffee quality to deteriorate in the past five years, when quota were determining the exported quantity and supply on the world market, could now face considerable competition for their market shares from countries which have been able to improve their coffee quality. Schluters indicates that this indeed is the case for African countries with the guaranteed producer price system, where little quality price differentiation is made (Schluters, 1984; p. 4). As such, the quality of coffee (and the availability) may influence future quota allocation disputes between producing members. Two dimensions can thus be distinguished for the future quota allocation; availability, for which consuming members and producing members with expanding production are arguing, and quality, which influences demand in the quota free period. It is not expected however that a system of selective adjustment of quota will again be introduced as happened with the 1962 and 1968 Agreements.

The size of the global quota

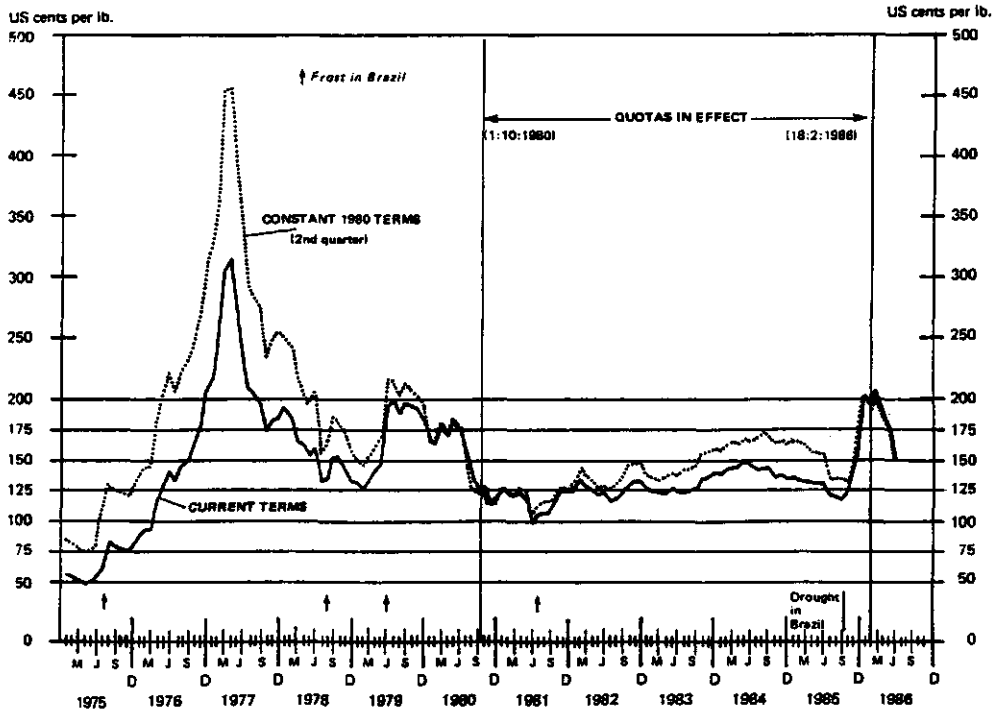
As the instrument of price regulation, the size of the global quota to be distributed among the producing members has, not surprisingly, emerged as a central issue in annual meetings. Leading producing countries ordinarily favour low initial allotments, arguing their case for favouring more pessimistic consumption projections with examples of overstocking in consuming members and the existence of large volumes of imports in transit (Junguito and Pizano, 1981; p. 5). Symmetrically consuming countries overstate import requirements and stress the need for a guaranteed supply. As in the producer arrangements which limited supply in the most recent period between 1973 and 1980, negotiations took place between the larger producers seeking to reduce world supplies and to spread stockkeeping more widely, and the smaller producers, whose target is to export the entire year's output.

In the ICA 1983 (Art. 34) some considerations have been laid down for determining the global annual quota for the coming coffee year. In practice, a number of influences work upon the global quota size in the course of the coffee year for which it has been fixed. CIP movements may induce quota increases or decreases and so maintain the CIP within the agreed boundaries. Furthermore, the Council may adjust the global quota in the course of the coffee year as circumstances require. Also, undershipments and undeclared shortfalls may produce a deviation in the initial and final global annual quota. The deviation is listed for recent years in Table 5.10.

5.5 Assessment

As a basis for the evaluation of the effectiveness of the International Coffee Agreement, the complete last period for which the quotas were in effect, is considered. The period 1980-1986 comprises both ICA 1976 and ICA 1983. Because the provisions of both agreements are rather similar, the performance of ICA can be assessed although it comprises two agreements. The main objective of ICA entailed the stabilization of the indicator price between 1.20 and 1.40 US dollars. Except for a short period in 1984 when the CIP exceeded 1.45 dollars, this goal was obtained (see Figure 5.4). However, this was accompanied by a number of disagreements between the participants to the Agreement. As a result of the expansion of production in a number of countries, a large non-quota market developed where lower prices prevailed than on the quota market. Although originally exports to the 'new markets' were encouraged by the Agreement, consumer members complained that their supply needs were badly met. Also the phenomenon of re-export from non-quota markets to the quota market was an effect of the large non-quota market. Requests from exporting members with expanding production for a larger quota share were not met, since the quota distribution was based on an ad hoc distribution procedure and subject to political bargaining. This put considerable pressure on the consensus in the Agreement partly caused by the reduction of the dominance of Brazil. Under past agreements, Brazil

Figure 5.4. Composite indicator price in current and constant terms, 1975-1986.



NOTE: (1) Prices refer to average of Other Milds and Robustas up to September 1976, Composite Indicator Prices 1976 up to September 1981 and Composite Indicator Price 1979 thereafter.
(2) Prices in constant terms refer to prices in current terms deflated by the U.N. index of unit values of exports of manufactured goods from developed market economies. (Base: April—June 1980 = 100).

Source: ICO.

with its large stocks enforced other producers to conform to its wishes. However, recently stocks were spread more evenly among producers Also, consumers wanted to influence the quota distribution more actively to ensure their supply, whereas in the past this was regarded an interproducer matter. Brazilian shortfalls seriously disupted the market stability, and consumers argued for a quota distribution system based on exportable production and available stocks. This pressure on Brazil's market share,

both from producers seeking expansion of their quotas and from consumers seeking to ensure a more stable future supply, led to a continued suspension of quotas, as Brazil refused to agree to a smaller quota. The instability of the dollar also led to disputes among the members of the Agreement. Especially for non-dollar importers and exporters such as the African and Asian countries, the changing value of the dollar led to considerable extra variation of export receipts and import payments. The SDR however, accepted as the unit of denomination in the International Cocoa Agreement was not an acceptable alternative for the US and Latin American exporters.

It can be concluded that the ICA achieved its goal of price stabilization, but controversies among members grew and this led to the decision not to re-introduce quotas in 1986, when this would have been possible. Also the change in the international political climate can be held responsible for the declined enthousiasm of consumer countries to take a flexible stand towards the Agreement. The current phase of the coffee production cycle which seems to be heading for a surplus production, may have contributed to this consumer attitude.

6. CONCLUSIONS

In the first chapter, the purpose of this report is described as presenting an analysis of the international coffee market and the regulation of this market by the International Coffee Agreement (ICA). The next four chapters, on production, consumption, trade and the agreement respectively, revolve around coffee prices, which are formed in the interaction of these forces. In this final chapter, the results and conclusions of the study are summarized. For convenience, the chapter division of the report is followed.

Production

Coffee is a tree crop. It takes about six years for the tree to give its normal yield. The economic life of the tree can reach fifty years. Coffee is not a homogeneous product, the two main types being Arabica and Robusta. Quality differences between and within the two types can be large, caused by ecological, climatic circumstances, and also by the way the coffee crop is processed.

The systems under which coffee is commercially grown show a large diversity, ranging from large estates to smallholder units. In many countries there exists a dual production structure. On average, labour costs form at least half of total production costs. There is also a large variety of marketing systems in producing countries. In general, these are made up of the marketing channel and a marketing authority, through which the government influences the marketing process. The authority can take the form of a marketing board, or that of a parastatal organization. For many countries, coffee is the single or most important generator of foreign exchange. Usually the influence of the government therefore is strong, and is connected with export policies and tax collection. Prices paid to growers differ widely among countries.

Since World War II, the trend in production has been upwards. Until the fifties, production was almost completely concentrated in Central and

South America. Now, more than 35% of world production is in Africa and South East Asia. From a long term perspective, the large drop of the Brazilian share of production is remarkable. The volume of world production shows high yearly fluctuations, mainly because of Brazilian crop failures caused by frosts or droughts.

The nature of growing coffee does not permit the volume of production to respond quickly to prices. In the long term, price elasticity of production in some countries is rather significant.

Consumption

Only 20% of world coffee production is consumed in producing countries. Consumption is concentrated in Europe, North America and Japan. Per capita consumption is highest in Northern Europe.

Processing of coffee (blending, roasting and grinding) takes place in the consuming countries and is performed by a small number of large companies. The practice of maintaining a constant taste, corresponding to the local preference, limits the substitutability of the different types of coffee. For the processing of instant coffee, usually lower grades of coffee are used. Coffee processing is bound to consumption centres for technological and economic reasons. Also political factors, in the form of trade barriers, are important.

Historically, the volume of coffee consumption has been positively correlated with rising incomes. Low to very low income elasticities of demand have recently been estimated for the EC and the US. In Japan, where per capita consumption is still rather low, income elasticity is estimated much higher. Price elasticities of demand seem to be very low, which means that, in general, the volume of coffee consumption is hardly affected by price changes.

Trade

The international coffee market is formed by cash markets and futures markets. These are all located in consuming countries. The markets in London and New York are the most prominent. Direct supply contracts between exporters and importers using prices on the open markets as a

reference are of growing importance.

Market participants consist of trade-interests (exporters, traders and processing firms) and non-trade interests (speculators). Whereas the different trade interests are highly concentrated, integration between the subsequent stages is almost non-existent.

Price formation, which is inherently unstable because neither the fluctuating production nor consumption respond much to price changes, is affected by the stocking policies of market participants. In the long term, coffee prices show a high correlation with world stock levels. A twenty-year cycle has been observed in both stocks and prices. In the short term, price formation is heavily influenced by speculative activities on the futures markets. This holds especially for periods of uncertainty inside and outside the coffee market.

The International Coffee Agreement

Producing and consuming countries decided upon the first ICA in 1962. This was renewed in 1968, 1976 and 1983. The 1983 Agreement, which is still in force, was signed by fifty producing countries representing 99% of world exports and twenty-five consuming countries with 85% of world imports. The official objective is to stabilize coffee prices. The instrument used is a system of export quotas, which - depending on price developments - limits producing members' exports to consuming members' markets. The role of consuming members is to police producing members' adherence to the quota provisions.

Intervention in the world market has a long history. In the first half of this century Brazil used to restrict its exports to the market unilaterally in order to sustain prices. Its absolute dominance in the export market made monopolistic price strategies possible. Later, because of a falling market share, Brazil had to seek the cooperation of other producers. By threatening to flood the market with accumulated stocks, Brazil was able on several occasions to enforce cooperation. Such producer alliances always met difficulties in verifying the retention efforts and sanctioning violations. The ICA can be considered as a special producer cartel, in that it is legitimized and sanctioned by consumers. Consuming countries participation is based on international political and economic motives.

The subsequent ICA's have encountered many problems. One major problem is the distribution of quotas. Formally these were to be distributed according to export performance and available stocks. However, Brazilian resistance prevented the application of the system, and an ad hoc system of quota distribution was applied. Quota distribution has not changed for a long time. This inflexibility also has implications for the consumers. Here the problem is the non-homogeneity of coffee, because changing consumer preferences have not been followed by adjustments of quotas, thus leading to tight supply situations for certain varieties. Other problems the ICA faces include the desired size of the global quota, the problems of production and export shortfalls and undershipments, and the heavy competition on the non-quota markets. Between 1980 and 1986 the non-quota market grew considerably. Prices on this market, which consisted of the Eastern Bloc countries and other non-members, were much lower than those prevailing on the quota market. The denomination of the reference price in the dollar, especially in periods of large exchange rate variations also causes problems. A change from the US dollar towards a denomination in the more stable SDR, as applied in the International Cocoa Organization, meets strong opposition from the American member countries.

The ICA was successful in maintaining price stability between 1980 and 1986. This success was not without cost. Even though the composite indicator price reached its reintroduction level early in 1986, members of the agreement could not agree on the implementation of the quotas. The quota allocation was again the major problem. Failure to reach consensus reflected the altered position of Brazil. Whereas in earlier agreements Brazil had the power to enforce cooperation, now several producing and consuming members did not accept its demands. This stand by consumer members may have been influenced by the expected oversupply of coffee in the coming years. The international political climate in international commodity agreements has also undergone a distinct change. At the moment it is difficult to say whether the ICA will survive. If not, producing countries will probably try to arrange a new producer alliance. This, however, will be more difficult to achieve than in the past because the traditional market leader, Brazil, has lost much power.

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APPENDIX

Historical survey of developments in global coffee production

In this appendix a description is given of the changes in global production that have taken place throughout this century, beginning with the dominance of Brazil in the world coffee market and its unilateral actions of the start of the century to sustain and raise world market prices. Until 1940 Brazil applied a policy of export restrictions and national stockpiling. From 1940 onwards this was followed by internationally coordinated interventions by producers, and, later, in cooperation with consumers.

The first major attempt at controlling the world coffee market by Brazil was undertaken in 1906. This took the form of a unilateral action to arrest the process which had brought down the price of coffee to very low levels. These price falls were attributed to the overplanting of coffee bushes in the last decade of the nineteenth century. The bumper crop of 1906 induced the presidents of the three major coffee producing states of Sao Paulo, Minas Gerais and Rio de Janeiro to authorize the State of Sao Paulo to bring up and store the excess coffee supplies. When the world market prices recovered, these stocks would gradually be released (Gordon, 1984; p. 208). This policy was called 'valorizacion', to value high, and was financed by a tax on each bag of coffee exported. The direct effect of these measures was an increase in world market prices as the demand for coffee was price inelastic, and as Brazil's market share of 70% gave absolute dominance. At the same time production was strongly encouraged by high prices and the Brazilian coffee frontier advanced into new areas. In 1917/18 the same policies were applied, and in 1921 the Federal government took over the organization. It negotiated loans with foreign bankers to finance the capital intensive regulation of an orderly flow to the market at stable (higher) prices (Gordon, 1984; p. 210).

The policy of 'valorizacion' was brought into serious difficulties, when both demand for and the price of coffee fell drastically in 1929 and 1930,

caused by the economic crisis in the industrialized world. Supply by that time had increased to unprecedented levels, and stocks had accumulated. Demand suddenly collapsed. In 1930 the National Coffee Council was established. It was financed by a further tax on each bag of coffee. It was charged with the destruction of excess stocks, the banning of new coffee planting and the establishment of production quotas (Fisher, 1972; p.58). Between 1931 and 1943 seventy-seven million bags were destroyed. Banning of new planting though was not very successful (Fisher, p. 62).

Until 1937 Brazil continued its policy of 'valorizacion', as a result of which its market share had declined to 57% (Pan American Coffee Bureau, 1965). Colombia, near to the important US market, had benefitted from the high prices resulting from Brazil's retention policy, and had augmented its world market share from only 3% in 1912 to 11% in 1937. African production had not yet appeared in significant volume on the market, but the UK, Portugal and France encouraged their colonies to cultivate coffee, in an effort to break Brazil's monopoly (Payer, 1975; p. 158). Ivory Coast, Cameroon, Angola, Kenya and Tanzania proved very suitable for the cultivation of both Robusta and Arabica coffees.

Brazil had suffered serious economic losses by its unilateral actions on the world markets, and between 1931 and 1937 it made repeated efforts to induce the other Latin American coffee exporters to agree to an international export restriction scheme (Hickmann, 1980; p. 27). As little resulted it decided to try to regain its former market share and augmented exports. In 1939 though, with the outbreak of the Second World War in Europe, this second important market became completely inaccessible, and prices fell heavily. Europe by that time accounted for 40% of world imports (Fisher, 1972; p. 50).

This crisis brought a willingness on the part of Latin American producers of mild coffee (Central America, Colombia) to engage in a dialogue on the coordination of international coffee marketing. On the initiative of the US the Inter American Coffee Agreement was set up with fourteen Latin American exporting countries. Export quotas to the US and the rest of the world were provided for (Rowe, 1963; p. 14). During the war the fixed price (13.4 cents per pound) was at first profitable, but later, as the general price level rose, this fixed price made cultivation less attract-

ive. Brazilian production declined continuously from 1933 onwards until the end of the war, whereas Colombian production gradually increased. El Salvador and Guatemala production remained unchanged. African production, however, trebled in the period 1933-1945. Indonesian production was virtually extinct as a result of the Japanese invasion (Rowe, 1963; p. 14).

After the war, Europe put up tariff barriers against coffee from dollar areas and favoured imports from non-dollar countries, because of its balance of payment problems. Robusta coffees from (former) European colonies in Africa received preferential treatment. The growth in the soluble coffee market, for which Robusta with its composition and low price is very suited, led to a high demand for African coffee after the war. Hickmann ascribes the upsurge of African production also to the availability of vast areas suitable for coffee cultivation, the availability of cheap labour and the high world market prices which prevailed on the world market in the early fifties (Hickmann, 1980; p. 35). Also, because there was no duty at European borders on coffee from ACP countries, African countries gained a competitive edge over Latin American exporters, who paid 9.6% ad valorem. In Cameroon, Ivory Coast, Kenya, Zaire and Angola production began first on large estates developed by Europeans, but cultivation also proved very suitable for smallholder production because of its simple production and processing (De Graaf; 1986; p. 73). African export policy was the direct sale. It did not aim at stocking coffee in order to raise prices, especially as storage space was in short supply (Dinham and Hines, 1983; p. 56). In the years following the war Brazil released its accumulated stocks that had not been burned and from 1947 to 1952 (except for 1950) exports were larger than production (Hickmann, 1980; p. 26).

The grave frost in Brazil of 1953 and the outbreak of the war in Korea in 1952 had forced prices up, but these also reflected the underlying situation of scarcity, a situation which had not existed for 25 years (Rowe, 1963; p. 14). Demand in Europe was rising rapidly, whereas production was characteristically slow to respond. Stocks were at a low level. This had already caused prices to jump from 0.18 dollar per pound in 1946 to 0,50 dollar per pound for Brazilian Santos coffee in 1950. They

remained at that level until 1953 when the price rose to nearly 1,00. Hickmann earmarks this as a crucial period explaining the upsurge in production in the late fifties and early sixties which led to the accumulation of stocks in producing countries (Hickmann, 1980; p. 35). The high world market prices were passed on to the producers in the most important producing countries, and caused an enormous expansion of the area under coffee cultivations (Geer, 1972; p. 125). This had occurred in Africa, in Central America and above all, Brazil's state of Parana. Akiyama estimated production increase in the period 1956-1959 at the very high rate of 20% per annum (Akiyama, 1982; p. 1).

The high prices prevailing between 1950 and 1954 had weakened US demand by 23%, which by then was 60% of world imports. The rising production and the slackening demand caused the beginning of a long plunge in world market prices which fell to a level of 0.34 dollar per pound in 1962. African exporters had expanded their market share at the expense of the traditional Latin American producers, who in this way also lost the ability to control the price by agreements among the Latin American countries (Brown, 1980; p. 27). Several attempts were made to prevent a further drop in prices, and these led to an agreement restricting exports in 1957. This was followed by producer agreements on a broader base. In 1962 the International Coffee Agreement was signed by main exporting and importing countries and led to an effective freeze of export market shares. For prices the aim of the 1962 agreement was to prevent these from dropping below their 1962 level. Stocks though were at that time at record high levels, exceeding annual exports. The bulk of these stocks were kept by Brazil who, by threatening to dump them on the market, induced other exporters to join the agreement. Production expansion had led to excess production. In order to alleviate this oversupply situation Brazil began a massive tree eradication programme, destroying 40% of the total tree stock between 1962 to 1968. The IBC provided farmers with funds to diversify the production and prohibited further coffee planting (Hickmann, 1980; p. 49). Moderate frosts between 1962 and 1967, with a grave frost in 1966 exacerbated the effect of the eradication programme. Also, the disease, coffee rust, caused a reduction in output. In 1967 Brazil had to abandon its policy of eradication as the tree stock had been

reduced too much and a replanting programme was formalized.

Between 1963 and 1968 prices remained above the 1962 level, but were since 1963 subject to continuous decline. Stocks though were declining gradually due to Brazilian policy of eradication.

A frost in 1969, though classified as moderate by the Brazilian Agronomical Institute of Campina (Table 2.4), reduced output in Brazil and brought prices back to the level of 0,50 dollar per pound.

Over-production, however, remained a problem and this was acknowledged during negotiations for extending the Coffee agreement in 1968. Formal production goals were set for countries and penalties were adopted for non compliance with production programmes (Brown, 1980; p. 32). The chronic oversupply situation of the sixties was replaced by a situation of more or less an equilibrium in the early seventies, brought about by a series of frosts, droughts and excessive rainfall in Brazil's producing areas in 1970/71 and 1971/72.

The rising prices of the early seventies shifted market control to producers. In 1973 the devaluation of the dollar and the accompanying insecurity in the monetary field induced a speculation-aggravated price rise. Other commodity prices also reacted and Cooper and Lawrence attribute this to the insecurity in the dollar value, the strong increase in the global monetary aggregates, and the physical scarcity of a number of commodities combined with increasing economic growth in the industrialized countries (Cooper and Lawrence, 1975; p. 682).

In 1974 prices fell and the breakdown of a producer alliance led to price competition among the largest exporters, further reducing prices. In 1975 the most severe frost of the century destroyed 50% of the Brazilian production capacity and had a pronounced impact on future harvests, as trees were affected. Also heavy rains in Colombia, the outbreak of civil war in Angola and the marketing problems of Uganda, put strains on prices, which sky-rocketed to unprecented levels. Demand nevertheless rose by 3%, because of the uncertainty of the availability of coffee in the medium term. The very low stock levels, which had been run down since 1962 also influenced demand. Singh remarks that if one single variable were to be used as a basis for explaining price developments in coffee,

world producer stocks would be the most useful (Singh, 1977; p. 42). Producer stocks showed a long term cycle that fairly accurately mirrored the price cycle with an all time low in the mid fifties, a very high level during the sixties and lower but sizeable levels in the early seventies. Akiyama also discerns this relationship (Akiyama, 1982; p. 8).

After the frost the Brazilian government implemented a policy of encouraging coffee growers to replant coffee trees in the less frost-prone areas in the north. This makes that in the future Brazilian production if succesful will fluctuate less. Following the frost, prices remained over 175 dollar per pound, having reached its all time high in eighteen months of 3,04 dollar in early 1977. Exports in 1976/77 and 1977/78 were considerably lower than the average for the previous five coffee years (1971/72-1975/76). The 1978/79 season meant a recovery of exports as Brazilian production picked up, and prices slid. Moderate frosts in 1978 and especially 1979 again brought prices to higher levels and prevented the imposition of export restrictions as had been agreed to in the 1976 Coffee Agreement.

In 1980 the composite indicator remained below the level of 1.34 dollar for 15 consecutive days and quotas were installed. Production in the 1979/80 reached the very high level of 99 million bags and since then a gradual building up of stocks has been taking place. In 1985 a level of 30 million bags available for export (or 6 months of consumption in the consuming member countries) was reached. Since quotas were in operation between 1980 and 1986, prices remained virtually constant between the price range of 1,20 to 1,40 dollar per pound. Production is currently expanding in a number of low cost producing countries such as India and Indonesia, whereas production in Angola has virtually disappeared, compared to the pre-1975 situation.