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Cocoa Study: Industry Structures and Competition

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Executive Summary

This report adds to research on the cocoa–chocolate chain. It specifically assesses the issue of vertical integration and horizontal concentration within the chain and discusses possible implications for competition law and policy in cocoa producing countries, presenting evidence from Cameroon and, to a more limited extent, other selected West and Central African countries, based on primary data collection and fact-finding missions.

The cocoa–chocolate chain is marked by a high degree of vertical integration and significant concentration at various stages along the supply chain.

At the global level, important structural changes have taken place in terms of the characteristics of the international cocoa trade and in cocoa processing. The chocolate manufacturing sector has also undergone notable changes, with an impact on the structure of the cocoa market as a whole. The processes involved featured both vertical integration and horizontal concentration, albeit in different respects.

Two notable developments have had a significant affect on the degree of vertical integration in the global cocoa and chocolate industry. First, the boundaries between trading and processing companies have become blurred, as the main trading companies on the international market now also engage in cocoa processing. Second, the largest cocoa processors have expanded their presence downstream into the industrial chocolate (*couverture*) segment. These developments reflect the trend towards branded consumer chocolate companies (such as Nestlé, Hershey and Cadbury) outsourcing their cocoa and chocolate ingredient needs to a few selected processing companies. The largest cocoa traders and processors on the international market (including Barry Callebaut, Cargill and Archer Daniels Midland) have thus developed interests ranging from trade in cocoa beans through production and trade of semi-finished cocoa products to the manufacture of industrial chocolate, achieving a significant degree of vertical integration in the market. These integrated companies are active in both producing countries and consumer countries. In the global cocoa–chocolate chain, they increasingly act as transmission channels that convey market information, standards and prices from consumer to producer countries.

The horizontal concentration process has involved mergers between large multinationals to form larger combined entities as well as takeovers by the large international concerns of smaller companies that mainly operated in a national context. It would appear that concentration at the cocoa processing stage has increased in response to the need to gain scale in order to increase cost efficiency. The market share expansion of the leading processing companies (semi-finished cocoa products and *couverture*) is also linked to a desire by the branded consumer goods companies to increasingly source their requirements for chocolate from relatively few established processors. The importance of global brand recognition and commercial marketing strategies are major factors underlying structural developments in the consumer segment. The market is now dominated by large multinational confectionery companies which market their brand in all major consumer countries.

There is a need for a detailed examination of these processes, which have also impacted on producing countries. Most notably, the consolidation of the processing segment in the chocolate industry in Europe, coupled with the vertical integration between trading and processing companies, is a fundamental factor behind the emergence of oligopsonistic structures in cocoa purchasing. In producing countries in Africa, local exporters sell on to an oligopsony of a few major foreign cocoa trading and processing companies, from which they often receive financing or to which they are formally related. Indeed, there has been a tendency for foreign trading and processing companies to integrate backward into producing countries, to some extent taking over the exporting functions. The “internalization” of activities at different segments of the cocoa value chain within networks of related companies (exporters and international buyers) renders collusive behaviours a priori possible.

Oligopsonistic structures have also emerged within producing countries in cocoa purchasing at or close to farmgate. At origin, producers do not have now bargaining power vis-à-vis a handful of major exporters that, directly or through agency relationships, purchase at or close to farm gate.

This structural configuration (i.e. a high degree of vertical integration and significant horizontal concentration at various successive stages within the chain) is the fundamental element underlying the relative bargaining positions of different stakeholders within the chain. Three aspects can be singled out.

First, there seems to be a structural imbalance, upstream in the cocoa chain, between cocoa producers (with a structure of production characterized by the predominance of small-scale producers) and buyers (highly concentrated, with the emergence of oligopsonistic or even – in remote locations – monopsonistic market structures). This asymmetry gives rise to the potential for the exercise of oligopsonistic or monopsonistic power in cocoa purchasing, both at the farmgate and at the international level. Available evidence shows a decline in nominal terms in the producer share of world cocoa prices across three of the four largest producing countries in Africa. However, the establishment of causal links between this negative evolution of the producers' share and structural changes that have occurred at origin (penetration of foreign capital and concentration) is merely speculative in this instance. More rigorous analysis of transmission mechanisms is needed to establish fundamental correlations. Yet, there is some evidence pointing to practices that may come under the reach of competition law.

Second, at the processing and manufacturing stages, there seems to be some form of balance between “successive oligopolies”. In particular, the power – on the supply side – of the largest cocoa trading and processing companies (Barry Callebaut is an example) appears to be balanced by the strength and purchasing behaviour of customers to some extent. In the *couverture* market, these include large multinational food manufacturers (Nestlé, for example) with professional procurement departments. The strength of such companies is an effective deterrent against any supplier attempting to abuse its market share. Moreover, these customers are generally well informed about the costs of raw materials inputs, overheads and additional costs involved in producing semi-finished cocoa products and *couverture*. Over time, they can identify (and check) the margin charged by the *couverture* supplier, increasing supplier accountability and enhancing relative market efficacy.

Finally, some evidence points to extra value being captured in consuming countries in activities downstream of cocoa processing and chocolate manufacture – brand marketing and distribution. On the one hand, this situation may be indicative of increasing profit margins, especially at the brand/retail level. To the extent that this situation reflects the growing market power of the big retail chains, it may raise competition law issues in the consuming countries. On the other hand, it may reflect the relative weight and growth of marketing and distribution costs in the value-adding process. These added costs – incurred in the consuming countries – typically refer to advertising and other forms of marketing communications, packaging, and distribution.

It should be emphasized that, across all these stages (from cocoa sourcing through cocoa trading and processing to the manufacture and supply of consumer chocolate), the relationship between concentration, competition and efficiency is a complex one. In particular, market concentration should not be automatically considered as equivalent to genuine “market power” – interpreted here as the ability of a firm, or a group of firms acting jointly, to raise (or decrease) and profitably maintain prices above (or below) the level that would prevail under competition for a significant period of time. If barriers to entry are low, competition is a process which is not exclusively related to the number of competitors. Furthermore, where market concentration decreases competition, it may nonetheless lead to greater efficiency by allowing economies of scale in production, organization or other activities, the benefits of which may be passed on to consumers. Some divisive issues may arise in this connection.

When efficiency gains are realized in cocoa sourcing and logistics through concentration and economies of scale, part of the benefits of the costs savings realized may be passed on to consumers in consuming countries. Yet, adverse effects may be felt in cocoa-producing countries, where concentration on the demand side may give rise to the potential for the exercise of oligopsonistic or monopsonistic power in cocoa purchasing. In special factual circumstances, this asymmetry may thwart the implementation of a “common” international competition strategy to address mergers in the cocoa sector.

At the policy level, a spectrum of policy options exists to address imbalances in bargaining power between stakeholders along the cocoa–chocolate chain and to improve the participation of producers in the high-value added part of the chain.

Competition law figures prominently in this context. Two areas of intervention deserve particular attention. Firstly, abuse of market power provisions under competition laws may be designed so as to cover abuse of buyer power – the ability of a firm, or a group of firms acting jointly, to decrease and profitably maintain prices below the level that would prevail under competition. Some countries have provisions in their national competition legislations for the prevention of abuse of buying power based on economic dependency. This legislation may well be considered by commodity producer countries in designing competition laws and in developing rules to deal with abusive bargaining practices not only in the cocoa sector but also in other agriculture or commodity sectors. Second, a strictly applied merger control mechanism may help prevent mergers or acquisitions that increase market concentration, reduce potential competition or result in excessive vertical concentration. The biggest challenge in implementing such a policy is that cocoa markets are characterized by the involvement of large international companies which, albeit based outside the territories of cocoa-producing countries, nevertheless impact negatively on those countries. Extraterritoriality becomes a major concern because these large multinational companies do not fall under the jurisdiction of cocoa-producing countries. One way to address extraterritoriality would be to act at a regional level in dealing with potential anti-competitive practices by or mergers of large multinationals in the cocoa market. Some commentators have gone one step further, putting forward a proposal for a development-oriented international competition authority to control anti-competitive conduct and growth by mergers of large multinationals.

Competition policy should be complemented by other economic policies addressed to improve the situation of local producers and firms in the sector.

Producers in developing countries may reclaim at least part of the extra value associated with the brand marketing. In special factual circumstances, this can be done by implementing a strategy based on geographical indication (GI) or trademark protection, in the context of strategic alliances between producer associations (built around appellation areas) and the large international processors/manufacturers. In practice, the effectiveness of this strategy is a matter of consumer perception, legal protection and effective price transmission back to producers of the extra value captured.

Access to finance, as well as market information and transparency, both have important structural implications in cocoa. The lack of efficient access to finance was identified as one of the factors underlying the concentration process at the export level within origin countries. In a negotiating context characterized by imperfect and asymmetric information, market knowledge may imply market power, and asymmetry in accessing market information may become a key factor behind inequitable income distribution. Structured finance tools, alongside measures aimed at redressing asymmetry of information, provide practical ways to empower producers by addressing market imperfections/failures. Overall, well-organized structures can help farmers gain power in the marketplace, and producer organizations should have a major part to play in this framework. The challenge here is to create a virtuous circle where interventions aimed at improving information, promoting group marketing structures and improving access to commodity finance feed back into each other. More ambitiously,

new models of organized supply chains should holistically acknowledge – and try to redress – all of the major constraints that work against the effective and sustainable integration of developing countries’ producers in commodity chains.

I. Methodology

A. Objective and design

This report adds to research on the cocoa–chocolate chain. It specifically assesses the issue of market concentration within the chain, and discusses possible implications for competition law and policy. The study, which builds on synergies between UNCTAD’s Commodities Branch and Competition and Consumer Policies Branch, is part of a broader initiative within the Commodities Branch aimed at enhancing market information and transparency in the commodity sector.

The paper is organized as follows.

The remainder of this Section (Section I) clarifies the methodology used in the study. Section II focuses on the processing and manufacturing sequence – from cocoa beans to consumer chocolate products. It seeks to clarify some technical details that have an important bearing on the value-chain analysis. Section III turns to consider major changes in industry structure (patterns of vertical integration – and deintegration - and the trend towards horizontal concentration at various stages within the chain). It first investigates structural developments at origin, with specific reference to Cameroon, then discusses current trends at the international level. Building on the analysis carried out in Sections II and III, Section IV considers the underlying causes of concentration and addresses the issue of price developments in the light of changes in market structures. Section V illustrates a spectrum of policy options for producing countries in order to address imbalances in bargaining power between stakeholders along the cocoa–chocolate chain and to improve the participation of producers in the high-value added part of the chain.

B. Methodology

1. Data collection

To gather the information needed to prepare this report, a data collection approach was taken involving both secondary data (i.e. pre-existing data) and primary data (i.e. original data collected for our specific research purposes).

Analysis of industry structures at the international level

The analysis of industry structures at the international level was primarily based on secondary data collection and analysis. The list of secondary source material included:

- Annual company reports and company filings;
- Competition cases;
- Government statistics, statistics by intergovernmental organizations, and statistics from industry associations;
- Business database services;
- Business newsletters, journal articles and books.

Structural changes in the industry – patterns of vertical integration and the trend towards increasing horizontal concentration – were tracked on the basis of a review of over 200 corporate deals (mergers, acquisitions and contractual alliances in the cocoa and chocolate industries).

Horizontal concentration levels were appraised on the basis of estimates by companies and market intelligence services. However, it was not possible to directly assess market shares and market concentration ratios on the basis of company reports: financial information about the

relevant industry segments was not available for two key players in intermediate activities;¹ furthermore, segmental information by product group was insufficiently disaggregated to be of use for assessing market shares in the downstream consumer market.²

Price developments were tracked via government statistical sources (the United Kingdom National Statistics StatBase and the French National Institute for Statistics and Economic Studies (INSEE) Portal); statistics by intergovernmental organizations (the European Communities, FAO, ICCO, IMF and UNCTAD); and industry sources (the CAOBISCO/ICA Statistical Bulletin).

Analysis of structural developments at origin – Cameroon case study

With regard to Cameroon, both secondary and primary data were used in the study. The latter were qualitative or quantitative in nature.

Primary data of a qualitative nature involved understanding the complexity of the relationship between international traders/processors and local exporters, as well as the dynamics of penetration up-country of multinational companies.

Primary quantitative data focused on marketing costs, overheads and additional costs involved in the commercialization of cocoa. This information was used to refine statistical analysis on the producer share of export prices. In some respects, this meant a shift in emphasis from a “statistical” approach (based on analysing published statistics) to what may be described as an “accounting” approach (based on direct sourcing from stakeholders of information on costs breakdown and margins), and from a “top-down” approach to a “bottom-up” approach in price analysis.

Part of the primary data was generated using the UNCTAD/NCCB (National Cocoa and Coffee Board) Infoshare facility – a co-shared database used to collect, process and disseminate strategic market information on commodities.

2. Period under examination

When discussing structural changes in the producing countries and their possible impact on prices the analysis concentrates on developments that have occurred since market liberalisation in the cocoa sector.

In all the countries under examination (selected West and Central African producing countries), liberalization is based on legal acts that can be dated quite precisely. Yet, the definition of the starting date of the analysis presents a number of conceptual and practical difficulties.

First, the period under examination varies from country to country depending on the timing and sequencing of the liberalization process. The first African country to liberalize its cocoa sector was Nigeria in 1986-1987. Liberalization took place in Cameroon in stages, during 1989-1991 and 1995. In Côte d’Ivoire, complete liberalization came in 1999. Ghana is still to fully liberalize.³

¹ As a privately owned company, Cargill restricts access to detailed financial information. Archer Daniels Midland (ADM) Company is a publicly listed company with more stringent disclosure obligations. However, the disclosed information is too aggregate to be of use. The Company’s operations are classified into three named reportable business segments (Oilseeds Processing, Corn Processing, and Agricultural Services); its remaining operations (Food and Feed Ingredient businesses, including cocoa processing operations, and Financial Activities) are aggregated and classified as “Other”.

² In the Consolidated Financial Statements of the Nestlé Group, for example, the most disaggregated relevant product segment is “Confectionery”, which aggregates chocolate, sugar confectionery and biscuits.

³ See Christopher L. Gilbert and Panos Varangis, *Globalization and International Commodity Trade with Specific Reference to the West African Cocoa Producers*, NBER Working Paper No. 9668 (April 2003); Christopher L Gilbert and Eric Tollens, *Does Market Liberalization Jeopardise Export Quality?*

Second, liberalization of marketing structures does not always coincide with liberalization of prices and the foreign exchange regime. Important cleavages in this respect are noted for Cameroon, Côte d'Ivoire, and Ghana.

Third, a distinction should be made between liberalization of domestic marketing structures and external marketing. In Ghana, for example, domestic crop purchasing has been progressively liberalized but export marketing still remains, to a considerable extent, under parastatal control.

Therefore, the exact definition of the starting point of our analysis is bound to be fairly arbitrary. Practical considerations on data availability and data quality bear importantly on our decision. In the case of Cameroon, developments in internal and external marketing structures are tracked since 1989 (liberalization of domestic marketing) and 1991 (export trade liberalisation). The later incidence of price liberalization and devaluation (in 1994) complicates evaluation of the impact of these changes on prices. More detailed information on the liberalization process in major producing countries in West and Central Africa is contained in Table 1 below.

Table 1: Cocoa market liberalization in selected West and Central African countries

Country	Notes
Nigeria	Rapid disengagement of the state (1986/1987) Nigeria liberalized rapidly in 1986, when the Government dismantled the commodity boards that had controlled the pricing, purchase and marketing of oil palm, cocoa and coffee, rubber, cotton, groundnuts, and grains. It also devalued its currency at about the same time.
Cameroon	Progressive disengagement of the State (three stages: 1989/90, 1991, and 1994/95) 1989/1990 and 1991: Liberalization of domestic marketing and export trade; farm prices for cocoa for the 1989/1990 campaign reduced by 40 percent. 1991: Set up of a barème-type system (the NCCB set a reference CIF price for the coming season; farmgate price was a residual after deduction of marketing costs); producer prices reduced by a further 12 percent. 1994/1995: The administered price and cost structure was fully dismantled in the 1994/1995 crop year. In January 1994, devaluation of the CFA franc from 50 CFA to 100 CFA per French Franc. Quality control up-country has been unregulated since 1989; quality control at export was transferred to the private sector in 1997.
Côte d'Ivoire	Progressive disengagement of the State (1994/1995 and 1999) From the 1995/96 crop season, exporters have purchased directly from farmers and their organizations (Caistab thereby lost its purchasing monopoly). Prices were still set at the start of the season but they served only as guidelines, upper and lower price limits being negotiable according to market conditions; direct export sales by Caistab were limited to 15 percent of total production, with the balance to be sold indirectly for the account of Caistab by approved exporters. Full liberalization in 1999.
Ghana	Progressive and selective disengagement of the State. Not yet fully liberalized. The internal marketing of cocoa was liberalized during the 1992/93 cocoa season (licensed private buyers compete on the internal market with the Produce Buying Company, a subsidiary of Cocobod, the Ghana Cocoa Board). Sales and distribution of cocoa inputs have been privatized. Export marketing remains under parastatal control (licensed private buyers sell their cocoa to the Cocoa Marketing Company (CMC), a wholly owned subsidiary of Cocobod and the only authorized exporter of cocoa beans); since October 2001, up to 30 percent of the purchasing volumes of eligible companies can be exported directly. Continued intervention in price setting by the Producer Price Review Committee (determination of cocoa producer prices and other rates and fees). Cocobod (Quality Control Division) continues with the monopoly system of grading and sealing of cocoa for export.

Source: Information on Ghana is from the Ghana Cocoa Board. Information on Cameroon and Côte d'Ivoire from Gilbert, 2002 (see footnote 3), UNCTAD, 2004 (see n. 25), FAO, 1999 (n. 28), and the Cameroonian National Cocoa and Coffee Board.

3. Transaction area and length of the supply chain

Transaction area

The paper focuses on the cocoa–chocolate chain as it relates to West and Central Africa - Europe. More precisely, the scope of our analysis is focused on the following transaction area: Cameroon (exports of cocoa beans) → the Netherlands (imports of cocoa beans, local grinding and exports of semi-finished cocoa products) → Western Europe (bulk chocolate and cocoa ingredients - industrial) → France and the United Kingdom (chocolate consumption).

Africa is the largest cocoa-producing region, accounting for some 72 per cent of world production of cocoa beans in the 2005/2006 crop year. Most of the cocoa from Africa is exported to the European chocolate industry (the largest worldwide), making African producers highly dependent on changes in demand from the chocolate industry in Europe.

The choice of Cameroon as the subject of relatively in-depth analysis was determined by the possibility to refine the analysis with primary data of both quantitative and qualitative nature. Cameroon accounted for an average six per cent of world exports of cocoa beans between 2003/04 and 2005/06.

Trade statistics played an important role in determining the relative importance of individual destination countries. Most of the cocoa from Cameroon (an average 75 per cent of its cocoa beans exports between 2003/04 and 2005/06) is exported to the Netherlands, the largest cocoa-processing country worldwide (14 per cent of world grinding in 2005/06). The importance of this country in terms of import volumes and grinding made it a key transactional node in our analysis.

The choice of the United Kingdom and France as the relevant markets for following retail price developments has been determined by two factors: (a) their market size (they account, with Germany, for some two-thirds of overall chocolate consumption in Europe – EU 15 and EFTA); (b) the ready availability of published statistics (retail price indices for chocolate products).

Box 1: Geography of the cocoa and chocolate industry

Africa is the largest cocoa-producing region, representing some 72 per cent of world production of cocoa beans in the 2005/2006 crop year. Four countries – Côte d'Ivoire, Ghana, Nigeria and Cameroon – accounted for virtually all cocoa production in the region, and about 68 per cent of global production (2005/06 crop year). Côte d'Ivoire alone represented more than one-third of global production. Worldwide, the eight largest cocoa-producing countries were Côte d'Ivoire, Ghana, Indonesia, Nigeria, Cameroon, Brazil, Ecuador, and Malaysia (by order of annual production size, 2005/06 crop year). These countries represent 90 per cent of world production (2005/06 crop year).

Cocoa processing (grinding) continues to be undertaken predominantly in cocoa-importing countries. Europe accounted for 42 per cent of world grinding in 2005/06. The Netherlands (14 per cent of world grinding in 2005/06) and the United States (12 per cent in the same year) were the principal cocoa-processing countries. However, the share of processing by cocoa-producing countries has increased over the past few years (from approximately 33.6 per cent in 2001/02 to roughly 37 per cent in 2005/06). Cote d'Ivoire and Malaysia alone accounted for almost half of origin grindings.

Production and consumption of chocolate products have traditionally been concentrated in developed markets such as Western Europe and North America. The United States of America and Germany are by far the largest chocolate-producing countries, accounting for some 47 per cent of overall consumer chocolate production in Europe (EU15 and EFTA), Northern America, Australia, Brazil and Japan – a reasonable proxy for world production (CAOBISCO data, 1999–2004 average). Western Europe and North America still accounted for an estimated two-thirds of overall chocolate consumption in 2005: Western Europe was the largest regional market (37 per cent of worldwide chocolate consumption), led by the United Kingdom, Germany and France; the United States was the largest individual consumer market (Euromonitor).

Source: Calculations by the UNCTAD secretariat based on data from ICCO *Annual Report* 2005/2006 (cocoa beans production and trade), Caobisco/ICA *Statistical Bulletin* 2006 and Euromonitor (chocolate production and consumption).

Note: Production and consumption (production + imports - exports) figures are in quantity. CAOBISCO figures for chocolate products include the following product categories: solid bars/tablets and other unfilled chocolate products; filled tablets and bars; "bonbons", pralines and other chocolate confectionery; sugar confectionery containing cocoa; white chocolate; spreads containing cocoa; chocolate powder (for the consumer) and other preparations for beverages. For chocolate products that are made of chocolate and other ingredients, volumes refer to the whole product.

Length of the supply chain

The analysis encompasses the full spectrum of supply chain stages, from cocoa harvesting to chocolate retailing. The following chapter clarifies the main intermediate stages under examination within the chain.

II. Processing chain

Consumer chocolate is the final product in a processing and manufacturing sequence that begins with cocoa beans. The most important features of the processes are described below. A diagrammatic representation of the different stages is provided in Figure 1. As highlighted in this section, technical details relating to the processing chain have important policy ramifications and should not be overlooked.

A. Chain overview

Cocoa beans are the seeds of a tree (*Theobroma cacao L*) that only thrives in the warm and humid equatorial belt (within 10°N and 10°S of the equator). The cocoa tree flowers in two cycles of six months the whole year round. In most African countries, the main harvest lasts from October to March and the interim harvest from May to August. Harvesting of the cocoa pods normally begins after three to five years of growth and maintenance (pruning, phytosanitary treatment, etc.).

At harvesting, the pods are removed from the trees and opened up; the beans are then separated from the pods, cleaned and fermented, the latter process (five to seven days) being essential for flavour to develop. Beans are subsequently dried in the sun and, after sorting, are conveyed in sacks to roasting and grinding plants (many of these are in consumer countries, but some are located in producing areas).

The first main processing stage is roasting. Traditionally, beans are roasted whole (bean roasting), but roasting of the de-shelled or crushed beans (nib roasting) is sometimes preferred. After roasting, other processes may be undertaken, for example alkalization, also known as “dutching” (which renders the cocoa powder darker and affects its flavour).

The next major stage is grinding. The nibs are milled to give a fine cocoa “liquor” (also called cocoa “paste”, or cocoa “mass”). Part of this liquor is used as an ingredient of chocolate, while part is further processed into cocoa butter and cocoa powder. Cocoa butter is extracted by pressing the cocoa liquor through a very fine sieve or by the use of a solvent. Virtually all butter resulting from conventional hydraulic pressing is used in the manufacture of chocolate. Otherwise it is shipped (in liquid or solid form) to the dairy, confectionery and baking industries. The pharmaceutical and cosmetics industries, which also use cocoa butter, typically satisfy their requirements from lower-grade products such as solvent extracted butter.⁴ The cocoa cake (i.e. the pressing residue, still containing 10 to 20 per cent fat) is either kibbled (ground coarsely) and sold on the generic cocoa market or further ground and sifted to produce cocoa powder. Cocoa powder varies in terms of fat content (depending on how much fat has been pressed out), a parameter which in turn determines its end use, ranging from drinking chocolate to use in bakery products and fillings.

Cocoa paste/liquor and butter are combined with other inputs (sugar, vanilla and powdered milk) into a smooth chocolate dough, which is then finely refined and put through a conching machine to produce *couverture*. The term *couverture* is here used to refer to industrial chocolate, the material from which finished chocolate products are made (and also the coating material used in the manufacture of confectionery, biscuits, ice cream and cakes).⁵ The *couverture* is used in-house by vertically integrated manufacturers to produce the consumer product, or sold to third parties (either small companies which do not themselves manufacture *couverture* – for example, small confectioners, bakers and patissiers – or large companies that buy in some of their *couverture* requirements). The *couverture* is generally delivered in liquid

⁴ International Trade Centre UNCTAD/WTO, *Cocoa: A Guide to Trade Practices* (Geneva: ITC, 2001), 93-99.

⁵ The term *couverture* is elsewhere used narrowly to refer to chocolate rich in cocoa fat content. See Directive 2000/36/EC of the European Parliament and of the Council of 23 June 2000 relating to cocoa and chocolate products intended for human consumption (Official Journal L 197, 03/08/2000 P. 0019 - 0025).

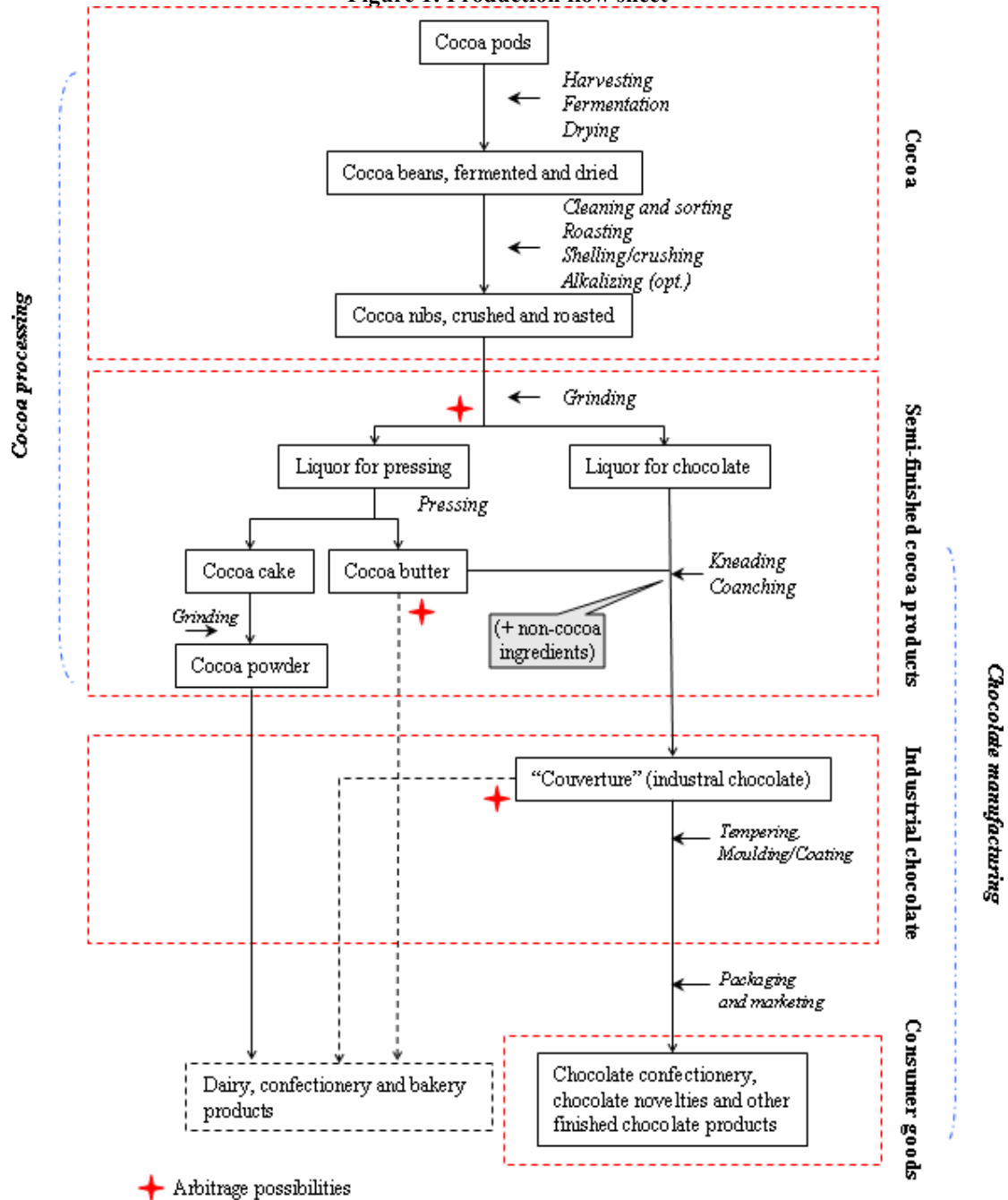
form (in large heated tankers) to major and regular users, while smaller and occasional users usually take it in solid form and in smaller units (blocks, drops or chips).⁶

When chocolate makers do not themselves manufacture the *couverture*, they rework it to make a wide variety of specialty chocolate products. In most recipes, couverture chocolate must be tempered prior to use. Tempering is the controlled cooling of previously melted chocolate. Generally, the chocolate is first heated to 45–50°C, then cooled to about 28°C and heated again to a little over 30°C. This process ensures the formation of small, stable fat crystals in the finished product. A variety of chocolate products are then made by moulding (solid, shell or hollow), coating, layering and cutting, and other shaping techniques.

Packaging, commercial marketing and retailing are the final steps in the value-chain process.

⁶ ITC, 2001, *supra* n. 4, 93-99.

Figure 1: Production flow sheet



Source: UNCTAD secretariat.

Note: Arbitrage refers to operations which exploit price differentials that make it possible to earn a profit.

The processing chain is significantly more complex than that of other commodities, such as coffee. This is due, in particular, to:

- The distinction between two traditional sectors (cocoa processing and chocolate manufacturing);
- The breakdown into various intermediate stages, each with traded output;
- The variety of finished consumer products (ranging from artisanal pralines to chocolate spreads);
- The variable combination of semi-finished cocoa products (cocoa liquor/paste and cocoa butter) and other raw material inputs (sugar, milk, vanilla, fat, hazelnuts, raisins, etc.) to produce chocolate.

B. Classification by stage of processing and by products

Generally, the industry differentiates between cocoa processing (upstream) and chocolate manufacturing (downstream).

Cocoa processing covers the sequence of activities needed to convert the raw material (cocoa beans) into semi-finished cocoa products (cocoa paste/liquor, cocoa butter and cocoa powder). It includes three major processing stages: (i) the roasting of cocoa beans; (ii) the grinding of cocoa beans to make cocoa liquor; (iii) the pressing of cocoa liquor to extract cocoa butter and produce cocoa powder.

Chocolate manufacturing refers to the blending and further processing of cocoa butter and cocoa paste/liquor – and other ingredients, as well – into chocolate. The trade distinguishes between two segments: the manufacture of *couverture*, or industrial chocolate (the material from which consumer chocolate is made); and the manufacture of consumer products containing chocolate.

Overall, it is possible to identify four major product categories based on different stages of processing, namely:

1. Cocoa beans (raw, or minimally processed);
2. Semi-finished cocoa products (cocoa paste/liquor, cocoa butter, cocoa powder);
3. *Couverture*, or industrial chocolate;
4. Finished chocolate products.

Table 2 shows the relevant product classification (six-digit, or sub-heading codes) under the Harmonized Commodity Description and Coding System (HS), used in this study.

Table 2: Product classification

Product	HS Code	Description
Cocoa beans	1801.00	Cocoa beans, whole or broken, raw or roasted
Cocoa paste/liquor	1803.10	Cocoa paste (excl. defatted)
Cocoa butter	1804.00	Cocoa butter, fat and oil
Cocoa powder	1805.00	Cocoa powder, not containing added sugar or other sweetening matter
Couverture (industrial chocolate)	1806.20	Other preparations in blocks, slabs or bars weighing more than 2 kg or in liquid, paste, powder, granular or other bulk form in containers or immediate packings, of a content exceeding 2 kg
Finished chocolate products	Various sub-headings - See Box 4	

Source: Based on the Harmonized Commodity Description and Coding System (HS) 1996.

This complexity in terms of stages of processing and products is reflected in the multilayered structure of the cocoa and chocolate industry, with discrete product markets at various stages within the chain. This holds important implications – for purposes of competition law and policy – when defining the relevant product market across the chain. The market for industrial chocolate, for example, is broadly perceived as distinct from the market for consumer chocolate products, which is itself broken down into various product segments.

The multilayered structure of the industry is also relevant when discussing issues of corporate social responsibility in the global cocoa and chocolate industry. Companies engaged in the industry vary widely in the range of activities they undertake, and this bears importantly on their degree of direct exposure to social and developmental issues in the cocoa-producing countries. In this field, public perception tends to concentrate on the role of the major chocolate brands. Indeed, strategic decisions by the branded consumer goods companies – as

regards product attributes and quality, for example – have an important bearing on cocoa production within origin countries. Yet, a pivotal role in cocoa sourcing and logistics is played by companies that operate upstream in the chain – cocoa traders and grinders. As widely discussed in the following chapter, these companies are active in both consuming and producing countries. In producing countries, they are active in cocoa sourcing and logistics, which increases their direct exposure to social, environmental and governance issues.

C. The variety of end-chocolate products

The market for finished chocolate products is characterized by its variety, which complicates the definition of the relevant product market in the downstream consumer sector for purposes of competition analysis.

For statistical purposes, the Association of Chocolate, Biscuit and Confectionery Industries of the European Union (CAOBISCO) distinguishes seven chocolate product categories: solid unfilled chocolate products; filled tablets/bars; “bonbons”, pralines and other chocolate confectionery; sugar confectionery containing chocolate; white chocolate; spreads containing cocoa; preparations for beverages containing cocoa. These product categories are further broken down into discrete product segments (Table 3).

Another distinction cuts across novelty and seasonal items – such as Easter bunnies and Christmas tree decorations – and chocolate articles for which demand is less influenced by holidays or other annual events (for example, chocolate bars and tables).

A further distinction is made between standard and “fine” chocolate products. At the heart of the definition of fine chocolate are the quality of cocoa and non-cocoa ingredients, the chocolatier’s technical expertise, as well as artistry in presentation of the final product. The quality of the cocoa inputs is in turn defined in terms of both cocoa genetics/origins (with Criollo beans having the richest flavour notes)⁷ and cocoa processing (particularly, the care given to the fermenting process). Cocoa percentages are also an important factor: the greater the cocoa content, the higher the quality of the chocolate.

Other niche products (“organic” and “fair trade” chocolate, for example) may also be deemed to occupy discrete product markets.

⁷ The world cocoa market traditionally distinguishes between two broad categories of cocoa: “fine or flavour” cocoa beans (five per cent of world cocoa production, mainly produced from Criollo or Trinitario cocoa tree varieties), and “bulk” or “ordinary” cocoa beans (the remainder, principally from Forastero trees).

Table 3: CAOBISCO chocolate products

Product description	Sub-categories/Description	PRODCOM	HS/CN
Unfilled chocolate	With added fruit, cereals, nuts	1584-2235	1806.3210
	Other (solid) bars/tablets of chocolate, milk or plain	1584-2239	1806.3290
	Other unfilled chocolate products	1584-2255	1806.9039
Filled tablets and bars	Other bars, blocks or slabs of chocolate	1584-2233	1806.3100
"Bonbons", pralines and other chocolate confectionery	Containing alcohol	1584-2243	1806.9011
	Other chocolates, whether or not filled	1584-2245	1806.9019
	Other filled chocolate confectionery	1584-2253	1806.9031
Sugar confectionery containing chocolate	Toffees, nougat and sugar-coated goods containing cocoa	1584-2260	1806.9050
White chocolate	Normally unfilled	1584-2330	1704.9030
Spreads (<i>pâtes à tartiner</i>) containing cocoa		1584-2270	1806.9060
Chocolate powder (for the consumer) & other preparations for beverages		1584-2280	1806.9070

Source: Caobisco/ICA *Statistical Bulletin* 2006. The categorization of products is based on chapters of the Combined Nomenclature (CN) of the HS and their equivalent Prodcod code. The CN is a system of classification of trade figures by the European Communities and composed by eight digits (the first six digits correspond to the HS code used for international trade). Prodcod is a further product classification used for studying industrial production (finer level of detail). Note : HS descriptions do not lay down compositional factors (including minimum cocoa content) for chocolate products. The definition of specific requirements for minimum cocoa contents in chocolate is primarily a matter of domestic law. Within the European Community, definitions and common rules in respect of the composition of cocoa and chocolate products are laid down in Directive 2000/36 (Official Journal L 197 of 03.08.2001, p. 19).

The wide variety of finished consumer products holds important implications for purposes of competition law and policy. In particular, questions arise as to whether different chocolate products (chocolate bars and pralines, for example, or standard and fine chocolate) should be seen as competing in the same market or as having separate markets. Ultimately, the answer to this question involves a case-by-case inquiry into interchangeability of use between products and cross-elasticity of demand. To date, a number of competition cases involving consumer chocolate manufacturers have been decided on the basis of a relatively narrow definition of the relevant product market (Box 2).

Box 2: Defining the relevant product market in competition cases involving chocolate

European Commission - Case No IV/M.362 (NESTLE/ITAGEL). The notification concerned an agreement signed on 6 August 1993 whereby Nestlé, S.A. (Nestlé) would acquire the majority of the share capital and voting rights of Finanziaria Italgel (holding of Italgel S.p.A. (Italgel) and Gruppo Dolciario Italiano S.p.A. (GDI)). The Commission eventually decided that the proposed concentration would not create or strengthen a dominant position in any affected markets. In assessing the relevant product market, the Commission considered that confectionery products could be split into chocolate and sugar confectionery products. Chocolate products could be further subdivided into different segments such as chocolate countlines, boxed chocolate, seasonal chocolate items and chocolate tablets. Nevertheless, the Commission noted that the precise delimitation of the relevant product market was not needed in the case because the operation did not raise serious doubts as to its compatibility with the common market.

Direction général de la concurrence, de la consommation et de la répression des fraudes (France) - Dossier Cémoi/SEAC. The notification concerned the proposed acquisition of the *Société européenne des assortiments de chocolat* (SEAC), a subsidiary of Cadbury France SA, by the group Cémoi. The parties considered that the affected market was confined to sales of seasonal chocolate confectionery (products such as chocolate Easter bunnies, Christmas tree decorations and other seasonal items). This product market was deemed to include both industrial and artisanal chocolate.

Direction général de la concurrence, de la consommation et de la répression des fraudes (France) - Dossier Nestlé SA/Rowntree Macintosh. The Competition authority identified four separate markets for consumer chocolate: the chocolate tablet market; the pralines market (le marché des rochers); the chocolate bar market; and the market for confectionery chocolate boxes. It did not differentiate between seasonal and non-seasonal products.

Source: Commission Decision of 15/09/1993 declaring a concentration to be compatible with the common market (Case No IV/M.362 - NESTLE/ITAGEL) according to Council Regulation (EEC) No 4064/89 (*Official Journal C 270*, 06/10/1993 p. 0005); "Lettre du ministre de l'économie, des finances et de l'industrie en date du 27 décembre 2002, aux conseils de la société Cémoi SA, relative à une concentration dans le secteur de la fabrication et de la commercialisation de chocolats" (*Bulletin officiel de la Concurrence, de la Consommation et de la Répression des fraudes* No 5, 04/05/ 2004).

D. Variable combination of inputs in the production of chocolate

Chocolate is the generic name for products obtained from cocoa materials (cocoa butter and paste), sugars and, for milk chocolate, milk. Other edible foodstuffs (such as hazelnuts, raisins, marzipan, etc.) may be added to form various chocolate products.

The definition of specific requirements for minimum cocoa contents in products that are commercialized as chocolate is primarily a matter of domestic law.⁸ Laws and regulations in his area pertain to the internal commercialization of products and may possibly be conceived as non-tariff barriers to trade. Within the European Community, definitions and common rules in respect of the composition, manufacture and labelling of cocoa and chocolate products are laid down in Directive 2000/36.⁹ Under the Directive, "Chocolate" (in ordinary usage also named dark chocolate or *chocolat fondant*) shall contain not less than 35 per cent total dry cocoa solids – that is the dried fraction of all cocoa substances.¹⁰ "Milk Chocolate" shall contain, on a dry matter basis, not less than 25 per cent cocoa solids, with derogation (20 per cent) provided for some Member States.¹¹ Minimum cocoa contents are laid down differently for other chocolate products. The Directive also sets minimum content requirements for milk or milk products. These are, for some product categories, as high as the minimum thresholds for cocoa materials (as for "Family Milk Chocolate", commercialized as "Milk Chocolate" in a number of Member States, which shall contain, on a dry matter basis, not less than 20 per cent cocoa solids and not less than 20 per cent milk solids). No content requirements are set for sugar, which remains one of the main ingredients in chocolate products.¹² The minimum contents are calculated on the chocolate part of the product after deduction of the other permitted edible foodstuffs. It is important to stress that, in products commercialized in the European Community as "Chocolate", "Milk Chocolate", "White Chocolate" and "Chocolate a la taza", the quantity of these additional ingredients may represent up to 40 per cent of the total weight of the finished product.¹³ In the case of filled chocolate and single-mouthful chocolate (such as a praline or a chocolate), the minimum contents are calculated after deducting the weight of the additional edible foodstuff, as well as the weight of the filling. Eventually, the chocolate portion of products bearing the name "Filled chocolate" or "Pralines" may be as low as 25 per cent of the total weight of the product.¹⁴

⁸ A soft regulation at the international level is provided in the Codex standard CODEX STAN 87-1981, Rev. 1 - 2003, which is voluntary.

⁹ Directive 2000/36/EC of the European Parliament and of the Council of 23 June 2000 relating to cocoa and chocolate products intended for human consumption (*Official Journal L 197* of 03.08.2001, p. 19).

¹⁰ Of which not less than 18 per cent shall be cocoa butter and not less than 14 per cent fat-free cocoa solids (Directive 2000/36/EC, Annex 1, Section A(3)(a)). These are minimum requirements. In practice, the content of cocoa solids in dark chocolate varies between 35 and 70 per cent or more.

¹¹ Directive 2000/36/EC, Annex 1, Section A(4)(a) and (5).

¹² Sugar content varies between 40 and 60 per cent across various product categories.

¹³ Directive 2000/36/EC, Annex 1, Sections B(1) and C.

¹⁴ *Ibid.*, Annex 1, Section A(7), (10).

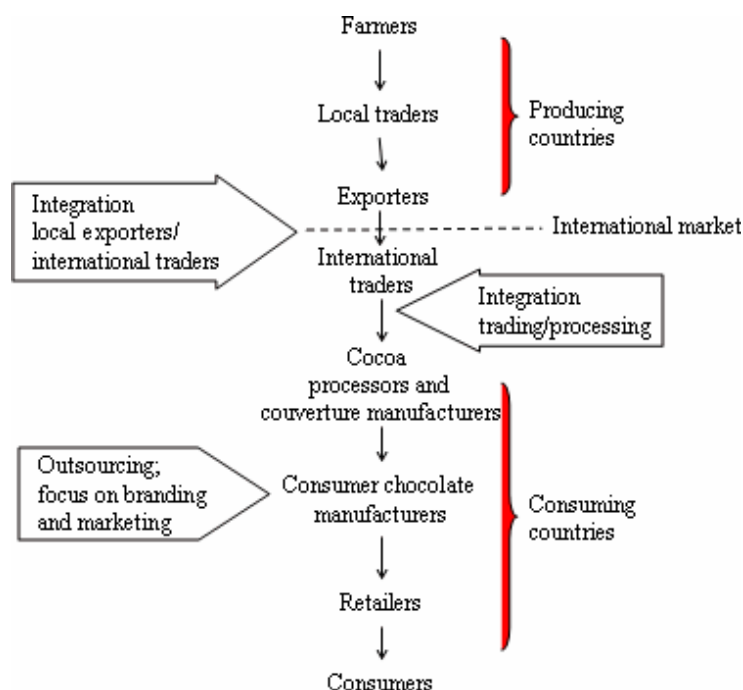
The weight of non-cocoa ingredients clearly emerges from this analysis. For analytical purposes, this variable combination of cocoa and non-cocoa inputs in the production of chocolate significantly complicates analysis of the links between the cocoa cost component and the retail price of chocolate. A thorough discussion, in particular, should not overlook price developments and structural changes in the dairy and sugar sector. This goes beyond the scope of this paper.¹⁵

¹⁵ The most thorough discussion of the incidence of the cost of cocoa ingredients in the retail price of chocolate is provided in ICCO, *Recent Evolution of the Share of the Cocoa Cost Component in the Retail Price of Chocolate in the United Kingdom* (Note by the ICCO Secretariat for the Seventh Meeting of the Advisory Group on the World Cocoa Economy, Accra, Ghana, 18–22 June 1990) – hereafter ICCO, 1990. Pioneering work on price transmission and value-sharing throughout the cocoa–chocolate commodity chain (Côte d’Ivoire–France) was done by Bruno Dorin, *From Ivorian Cocoa Bean to French Dark Chocolate Tablet. Price Transmission, Value Sharing and North/South Competition Policy* (Montpellier: Centre de Coopération Internationale en Recherche Agronomique pour le Développement, 2003).

III. Organization and structure of the marketing chain: Patterns of vertical integration and horizontal concentration

The cocoa supply chain (physical) is shown in diagrammatic form in Figure 2.

Figure 2: Supply chain for cocoa



Source: UNCTAD secretariat.

As shown in the figure, there have been notable developments in the structure of the chain, both within the cocoa-producing countries themselves and in consuming (cocoa-importing) countries. This Section first investigates structural changes at origin, with specific reference to Cameroon, then discusses restructuring processes that have occurred outside of the producing countries. The structural configuration of the chain is a fundamental element behind the bargaining power of stakeholders along the supply chain, and needs to be considered in some detail.

Market concentration – addressed throughout this chapter – should not be automatically equated with market power. As discussed in the following chapter, the relationship between concentration, competition and efficiency is a complex one, in the cocoa and chocolate industry as elsewhere. Concentration is here assessed within aggregate industry classifications and by reference to market shares.¹⁶

¹⁶ In Section II.A (Classification by stage of processing and by products), six-digit Harmonized System (HS) codes (sub-headings) were used as references for a vertical breakdown of the chain into discrete market segments. The HS is not a classification of economic activities but of products. However, it is possible to associate products (HS six-digit codes) with the economic activities that create products. This can be done by means of correspondences between product classifications and economic activity classifications (HS 1996 → CPC Ver.1.0 → ISIC Rev.3, where HS and CPC are product classifications, while ISIC is a classification system by economic activity). More simply, the product breakdown has been taken as a proxy for breakdown by economic activity.

A. Organization and structure of the industry in producing countries: The case of Cameroon

1. Overview of marketing structures

With regard to Cameroon – as for other cocoa-producing countries – a distinction shall be made between production and commercialization, or marketing.

Production is centred on farmers. At the end of the 1990s, almost 90 per cent of cocoa production worldwide came from smallholdings under 5 hectares.¹⁷ The global number of cocoa producers was estimated at approximately 14 million, about three-quarters (75 per cent) of whom are in Africa.¹⁸ In Cameroon, cocoa farms are estimated to cover 400,000 hectares (ha), with a production structure characterized by the predominance of small-scale producers (more than 1.60 million smallholders were involved in cocoa in the late 1990s); between 2000 and 2005, the yield per ha averaged about 370 kg/ha.¹⁹ In 2002, only around 10 per cent of cocoa (and coffee) farmers were estimated to be organized into producers' associations, primarily through Common Initiative Groups (GICs),²⁰ and this was similar to their share in cocoa trade.²¹ The main activities undertaken by farmers include maintenance of the farm, harvesting, fermentation, drying and bagging, and possibly transport of the cocoa beans to up-country delivery points. For the production stages, the cost of labour (in many cases, family labour) and the cost of material inputs (fertilizers, insecticides and fungicides) constitute by far the largest components of current costs.

As regards the commercialization, or marketing, of cocoa, the domestic marketing chain (up to and including delivery of the cocoa on board a ship) follows a path from farmers to international purchasers with two intermediary stages. The first stage involves local collection – at or close to farmgate – and delivery to the port of export (internal marketing). The second stage is shipment for export (external marketing). A simplified version of the marketing chain is illustrated below, with specific reference to Cameroon.

¹⁷ ICCO *Global Estimates*, 1999, <http://www.icco.org/faq3.aspx?id=dlf1467> (accessed 7 November 2007).

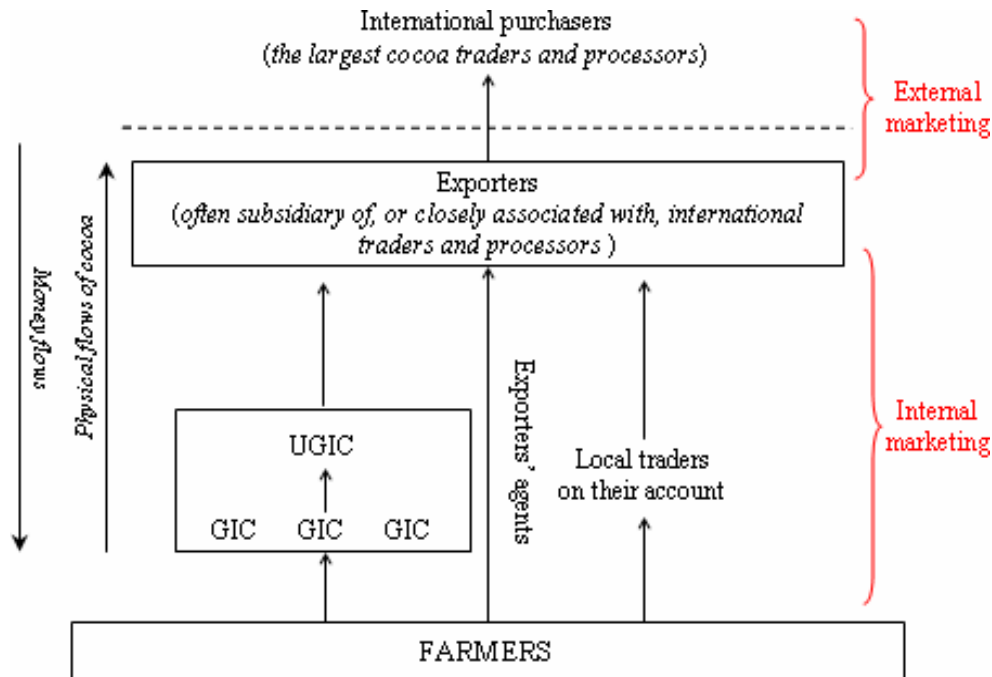
¹⁸ *Ibid.*, <http://www.icco.org/faq3.aspx?id=dlf1467> (accessed 7 November 2007)

¹⁹ Calculations on area harvested and yield per hectare based on FAOSTAT data.

²⁰ Common Initiative Groups (GICs) have emerged since 1992 in Cameroon as a form of producers' organization involving a lesser degree of formality than traditional cooperative entities. GICs are active at farmgate (village) level, bringing together in general between 40 and 60 producers. They have developed into multilayered structures, with four to ten GICs grouped into a "union of GICs" (UGIC), and four or five such unions have grouped themselves into a federation. See "*Loi n° 92-006 du 14 août 1992 relative aux sociétés coopératives et aux groupes d'initiative commune*" and "*Décret n° 92-455/PM du 23 novembre 1992 fixant les modalités d'application de la loi n° 92-006 du 14 août 1992 relative aux sociétés coopératives et aux groupes d'initiative commune*". Retrieved through FAOLEX (at <http://faolex.fao.org/faolex/>, accessed on 24 October 2007).

²¹ Common Fund for Commodities, *Possibilities for Price Risk Management by Cocoa Farmers in Cameroon, Côte d'Ivoire and Nigeria* (Paper submitted at the 2002 Annual Meeting of the ITFC, held in Abidjan, Ivory Coast, on 26-28 June 2002), at 4.

Figure 3: Domestic marketing structures - Cameroon



Source: UNCTAD secretariat.

Note: GIC: *Groupe d'initiative commune* (Common Initiative Group); UGIC: *Union des groupes d'initiative commune* (Unions of "Common Initiative Groups").

Internal marketing is handled by producers' organizations, local traders on their account, or agents of exporters and of the country processor. Exporters, independent buyers and their agents must have signed a statement of existence and must also hold a trader's card issued by the Cocoa and Coffee Inter-Professional Council (CICC).²² The main activities include collecting and handling the cocoa beans up-country and transport of the beans to port.

The domestic chain, as indicated below, very often presents a number of cleavages, depending on the marketing channels prevailing in a given area:

1. Growers take their produce to the warehouses of the farmer organizations to which they belong for further delivery to the exporters' warehouses.
2. An exporter sets up an internal purchasing organization (using its own employees) and purchases directly from farmers at or close to farmgate (purchase at origin). Direct trading also takes place where the largest exporters and processors employ agents to purchase cocoa directly from farmers or village markets for delivery to the buyers' warehouses.
3. Individuals acting for their own account – generally merchants often engaged in other businesses – collect small amounts of cocoa from several sub-collectors ("field-

²² With specific reference to the 2005/2006 cocoa harvest season, conditions for marketing cocoa beans were set forth in the following laws and regulations: Law No. 2004/025 of 30 December 2004, amending and supplementing Law No. 95/11 of 27 July 1995 on the organization of the cocoa and coffee trade; Law No. 2003/003 of 21 April 2003 relating to phytosanitary protection; Decree No. 2005/1212/PM of 27 April 2005 regulating the packaging and marketing of cocoa beans; Circular No. 00004 MINCOMMERCE/CAB (Organization of the 2005/2006 cocoa harvest season); and Order No. 00026/MINCOMMERCE of 12 August 2005, setting out general conditions for marketing cocoa beans.

collectors”, who are often themselves cocoa farmers), as well as directly from farmers, in order to compile a large shipment for consignment to the exporter.

As a matter of regulation, purchases at origin have to take place on organized markets, at the initiative of producers and their groupings in conjunction with buyers and the competent administrative authorities.²³ Night-time or door-to-door purchases are prohibited.²⁴ These prescriptions were aimed at strengthening the relative bargaining power of farmers vis-à-vis buyers.

In practice, farmers, including individual ones, often sell directly to local traders or to the exporter’s agents. These traders buy at or close to farmgate and convey the produce to the exporter’s buying points (field warehouses) installed in the cocoa-producing areas. From there, the cocoa is moved on to the exporter’s warehouse at the point of export (the port of Douala).

Low-quality (residual) beans unsuitable for export are sold at a discount to the agents of the local processing company.

External marketing is handled by exporters, or shippers. The exportation of cocoa beans is reserved for operators who have signed a declaration of commercial activity and hold a trader’s card issued by the CICC. Exporters buy from cooperatives, other intermediaries and even farmers and sell on to international buyers (often related companies). They are responsible for all those activities that are specific to export transactions (physical handling at port, customs clearance, export packing and phytosanitary treatment, and compliance with other requirements set by the exporting and importing countries or negotiated under the export sale contract). In most situations, the performance of these functions is contracted to a network of service providers. The carriage of cocoa and the associated formalities are arranged by a “forwarder”, who acts on behalf of an exporter and attends to all the necessary details of shipping, insuring and documenting of goods. A “stevedore” works at loading the shipment on a ship. Quality inspection is performed by accredited companies. The exporter plays a pivotal role in this service network.

Traditionally, the first customers for cocoa in export markets were importers who purchased the cocoa for their own account then sold on to industry (cocoa processors and chocolate manufacturers). Over time, the boundaries between merchants and industrial users have become blurred in the cocoa trade. The largest processors and manufactures are now the leading international purchasers of cocoa in export markets. Besides, as discussed below, these buyers have vertically integrated upstream, taking over exporting operations within origin countries to a certain extent.

The flow of money is the reverse of the physical flow of cocoa: exporters usually provide credits to intermediaries, who use cash to pay collectors and farmers.

²³ Order No. 00026/MINCOMMERCE of 12 August 2005, Art. 6.

²⁴ Ibid.

2. Patterns of vertical integration and horizontal concentration

As discussed in a series of UNCTAD documents,²⁵ liberalization of the cocoa sector in West and Central Africa has resulted in increased concentration in the export sector, with a tendency for foreign trading and processing companies to integrate backward into the origin, either directly or through agents.

During the first years of liberalization, a large number of local, highly fragmented traders (local purchasers and exporters) emerged, sometimes resulting in a transitory increase of producer prices. However, the sector consolidated rather quickly, as many of these traders were later eliminated by intense competition. In external marketing, a small number of big private exporters have come to dominate the export markets. In Cameroon, more than 60 per cent of exports declared from August 2006 to July 2007 were handled by the four largest exporters (in terms of shipment weight). The single largest exporter alone accounted for roughly 29 per cent of all shipments over the period. In cocoa sourcing, the exporters' reach extends all the way from export to the farm level.²⁶ At origin, producers do not have much bargaining power vis-à-vis these major traders who, directly or through agency relationships, purchase at or close to the farmgate.

This horizontal concentration process was accompanied by a tendency for foreign trading and processing companies to vertically integrate backward into the origin. As in other cocoa-producing countries, the largest local processing and exporting companies in Cameroon are now subsidiaries of, or closely associated with, multinational companies involved in the world cocoa trade. Most notably, the country's processor, Société Industrielle Camerounaise des Cacaos SA, or SIC Cacaos, is owned (99.95 per cent ownership as per 31 August 2006) by Swiss-based Barry Callebaut, a major cocoa processor and chocolate manufacturer. US-based Archer Daniels Midland (ADM) has acquired – jointly with Singapore-listed Olam – Usicam, one of the largest plants for cocoa drying, cleaning, warehousing and other related activities in Cameroon. ADM is, together with Cargill (also present in cocoa sourcing and logistics in Cameroon), a major cocoa trader and processor on the international market. The destination country of more than 77 per cent of the shipments declared for export between August 2006 and July 2007 was the Netherlands, which also reflects the local presence in Cameroon of those multinational companies (Cargill and ADM, in particular) that have their main processing facilities in the Netherlands.²⁷ Other multinational traders – including Olam and ED&Man – have also established a local presence in Cameroon.²⁸ Factual relationships of dependency and control add to these formal equity linkages. In particular, a number of local

²⁵ See, for example, Irfan ul Haque, *Commodities under Neoliberalism: The Case of Cocoa*, UNCTAD G-24 Discussion Paper Series No.25 (Geneva: United Nations, 2004) and Raphael Kaplinsky, *Competitions Policy and the Global Coffee and Cocoa Value Chains* (Paper prepared for United Nations Conference for Trade and Development, May 2004). Also, UNCTAD, Document TD/B/COM.1/27 of 16 July 1999 (*The World Commodity Economy: Recent Evolution, Financial Crises, and Changing Market Structures*, Report by the UNCTAD secretariat) and Document TD/B/COM.1/EM.10/2 of 14 May 1999 (*The Impact of Changing Supply-and-Demand Market Structures on Commodity Prices and Exports of Major Interest to Developing Countries*, Report by the UNCTAD secretariat).

²⁶ In some locations, they have set up their internal purchasing logistics and purchase directly from farmers at or close to the farmgate. Their acquisition infrastructure includes: (i) export warehouses, as well as conditioning and roasting facilities (in the proximity of the export port); (ii) a network of cocoa buying centres (normally based in the main cities of the producing areas); (iii) related transport, financial, and securities facilities. While the majority of this capital investment is owned by the foreign investors as the assets of locally incorporated wholly owned subsidiaries, certain elements are implemented as joint ventures with local partners or held under some concessionary regime.

²⁷ National Cocoa and Coffee Board (Cameroon), *Bilan de la Campagne Cacaoyere 2006 - 2007*, August 2007.

²⁸ According to a study by FAO, the local (independent) exporters' share of the export market would have declined from 75 per cent in 1995/96 down to 25 per cent in 1996/97. See Andrew W. Shepherd and Stefano Farolfi, *Export Crop Liberalization in Africa* (Rome: FAO, 1999), at 21.

exporters who are formally unrelated still depend on foreign companies as a source of funding. In practice, these exporters act as shippers who resell their product free on board (FOB) to the international buyers, from which they receive financing.²⁹ The internationalization of activities at different segments of the cocoa value chain within the multinational companies renders tacit or formal collusive behaviour a priori possible.

It appears that two factors drove the process of corporate concentration and integration in the cocoa export trade in Africa.³⁰ The first factor is access to finance, which placed local exporters at an operational disadvantage with regard to foreign companies. With the liberalization of the sector, private commercial banks in the producing countries have become reluctant to finance local operators in the cocoa sector and have become more demanding in defining their credit conditions. According to the statistics of the Ivorian Bankers Associations (APBEF-CI), for example, the total amount of the coffee and cocoa campaign credits at the end of January 2000 (six months after the liberalization of the cocoa sector) was 133 billion CFA francs, an average of 9.50 per cent of the total loans granted by banks, much less than the level a few years before, which was close to 20 per cent. Loans granted by these commercial banks came with very high interest rates, ranging from 18 to 25 per cent per year.³¹ Local exporters actually sought affiliation with foreign trading and processing companies, from which they could receive financing at lower interest rates (ranging from 4 to 6 per cent per year). Indeed, most of the multinational trading and processing companies have a strong credit rating and get much of their funds from institutional investors. For them, the cost of capital is very low (with interest accruing at a rate equal to an adjusted LIBOR rate plus a spread, based on the company's credit rating), compared to what local traders have to pay.

The second factor is the economies of scale evident in the logistics of cocoa transportation. During the 1990s, the overseas transport of cocoa beans evolved towards bulk shipment. Cocoa beans are loaded either in shipping containers ("containerized bulk") or directly into the hold of the ship (the latter is also referred to as the "mega-bulk" method). In the early 2000s, bulk trade represented between 800,000 and 900,000 tonnes per year of cocoa to Europe alone.³² Bulk trade can be up to one-third cheaper than conventional shipment in jute bags, but the quantities involved necessitate collection into large shipments and can at present only be contemplated by major companies. This resulted in major cost savings, but also reinforced the competitive position of the large multinational companies. Besides these important structural consequences, an unintended consequence of bulk trade has possibly been a decline in cocoa quality.³³ In bulk transport, the cocoa is loosely dumped into containers. Bulk transport is associated with flag (rather than bag) storage (i.e. beans are held in piles on the floor of the warehouse) and other bulk logistics (as in grain, the beans are grabbed from the hold of the vessel and channelled via funnels and conveyor belts into warehouses). All this may involve some blending of cocoa from different origins and physical deterioration. Attempts to resume traditional shipment in jute sacks have met with strong opposition (Box 3).

²⁹ The exporter bears the costs and risks relating to the goods until such time as they have passed the ship's rail at the port of shipment at origin, i.e. Douala. Freight and marine insurance are at the buyer's expense. See International Task Force on Commodity Risk Management, *Price Risk Management in the Cocoa Industry of Cameroon*, August 2002. Hereafter, ITF Report (Cameroon).

³⁰ UNCTAD, TD/B/COM.1/27, supra n. 25, at 16.

³¹ ITF Report (Cameroon), supra n. 29.

³² As reported by the European Cocoa Association.

³³ Fold, "Restructuring of the European Chocolate Industry and Its Impact on Cocoa Production in West Africa," *Journal of Economic Geography* 1(3) (2001): 405–20 and, by the same author, "Lead Firms and Competition in 'Bi-polar' Commodity Chains: Grinders and Branders in the Global Cocoa-Chocolate Industry," *Journal of Agrarian Change* 2(2) (2002): 228–247.

Box 3: Disputes over bulk shipment of cocoa

The incidence of bulk shipment reflected the incursion into cocoa-exporting operations within producing countries of trading companies (such as ADM and Cargill) that were primarily engaged in procuring, transporting, storing, processing and merchandizing bulk commodities. These companies have adapted their logistical system to the cocoa trade. In Cote d'Ivoire, bulk shipments were introduced in 1999. In 2003, some 50 per cent of the country's cocoa export volume was shipped out in bulk. Exporters set up bulk loading facilities in export ports within the producing countries, and special structures were also put in place to unload beans in Europe.

Some Governments have adopted measures to revive conventional shipment in jute bags, with the argument that this would prevent blending of cocoa from different origins and quality deterioration.

In Cote d'Ivoire, the Government promulgated a decree in 2001 which incorporated new jute bag specifications, requiring all cocoa beans to be thenceforth exported exclusively in appropriate jutes bags. ECA, the European Cocoa Association, clearly stated its opposition to the export packaging component of the decree and appealed for its amendment. In September 2003, the European Union asked the Government of Cote d'Ivoire to amend the relevant parts of the decree.

A similar situation occurred in Cameroon, with regard to its packaging decree of 1997. Here, ECA efforts were conclusive: Cameroon's Assembly met on 15 June 2004, among other things, to amend the commercial law, leading to the forthcoming revision of the packaging component of the cocoa decree.

Source: UNCTAD secretariat, based on information publicly released by the European Cocoa Association (ECA).

Highly concentrated structures have also emerged in cocoa purchasing at the international level. ADM, Cargill and Barry Callebaut are the largest international purchasers of Cameroon cocoa in export markets. In 2002, the three companies were reported to have purchased some 95 per cent of Cameroon's cocoa.³⁴ The emergence of this oligopsonistic structure in cocoa purchasing is closely related to structural developments that have occurred at the international level and are discussed below.

B. Organization and structure of the industry at the international level

The previous section discussed changes in marketing structures within producing countries, with specific reference to Cameroon. These structural developments at origin need to be appreciated alongside restructuring processes that have occurred outside of the producing countries. In this regard, important changes have taken place in terms of the characteristics of the international cocoa trade. In consuming countries, the chocolate manufacturing sector and the consumer market for chocolate have also undergone notable changes, with an impact on the structure of the cocoa market as a whole.

The following sections discuss patterns of vertical integration and deintegration, horizontal concentration, and globalization of operations, as relating to:

1. International trade of cocoa beans and product;
2. Cocoa processing (the conversion of cocoa beans into cocoa paste/liquor, cocoa butter and cocoa powder);
3. The manufacture and supply of *couverture*, or industrial chocolate (the "raw" material of consumer chocolate manufacturers);
4. The manufacture and supply of consumer chocolate products;
5. Chocolate retailing in the consuming countries.

As discussed, cocoa processing and chocolate manufacturing are undertaken predominantly in consuming (cocoa-importing) countries. Structural developments in the processing and manufacturing segments of the industry (points 2-4) thus refer to changes that have primarily occurred in these countries. There is a need for a detailed examination of these processes, given their significant impact on producing countries.

³⁴ ITF Report (Cameroon), *supra* note 29.

1. Cocoa trading

Some notable changes have occurred over time in the international cocoa trade, with some developments accelerating over recent years.

First, throughout the 1990s, companies with a widely diversified range of trading interests (such as Cargill and ADM) to a considerable extent took over the role of trading companies (such as Gill&Duffus, Berisford and Sucden, the leading names in the cocoa trade throughout the 1980s) that were principally specialized in the cocoa and sugar trade.³⁵

Second, as already discussed, the major trading companies on the international market (ADM and Cargill) have, to a considerable extent, taken over cocoa-exporting operations within origin countries, thus achieving a significant degree of vertical integration in the industry. Their reach extends all the way to the farm level, either directly (cocoa-buying stations) or through agency relationships.

Furthermore, the boundaries between trading and processing companies have become blurred, as the large trading companies – in part to compensate for the erosion in trading margins – are now also engaged in cocoa processing (and, a further step down the production chain, in the manufacture of *couverture*). In cocoa, very few international trading firms now concentrate on trading operations alone (ED&F Man and Continaf, for example).

Box 4: Integration of trading and processing - Examples from ADM and Cargill

ADM moved to cocoa processing with the acquisition of W.R. Grace & Company's cocoa business (Grace Cocoa) in 1997. Grace Cocoa was the largest cocoa processor worldwide (with 10 per cent of total output) and also had interests in *couverture* (Europe and North America) and consumer products (Ambrosia, De Zaan and Merckens brands in North America). The company has since then significantly expanded its cocoa processing activities, including in origin countries (for further details, refer to appendix 2).

Cargill had been a major producer of semi-finished cocoa products and a significant manufacturer of *couverture* since the mid-1980s. In 1987, it acquired General Cocoa Company Holland B.V. and its controlled companies, including Gerkens Cacao Industrie B.V. and Fennema B.V., thus becoming a leading cocoa processor and supplier to the European market. The 2004 acquisition of the Nestlé cocoa processing facilities in York (United Kingdom) and Hamburg (Germany) further entrenched its position as a leading international cocoa processor and supplier (for more details, see appendix 1).

This trend has accelerated in recent years, particularly with reference to origin grinding (appendix 4).

Source: UNCTAD secretariat based on company press releases. For more detailed information on relevant acquisitions by Cargill and ADM, the reader is referred to appendices 1 and 2.

As a result of these developments, international cocoa traders have become “fewer, bigger, more diversified across the range of commodities, and more vertically integrated upstream to the farmers' level and downstream in transport and processing.”³⁶

2. Cocoa processing

i. Vertical movements: deintegration and new patterns of vertical integration

The grinding segment has recently witnessed substantial changes and entry by new suppliers. These structural changes are closely related to – and partially overlap with – developments in the cocoa trade.

It was common in the past for major chocolate manufacturers to be vertically integrated. Their involvement in the industry started at the bean-processing stage. Some were also active in the trade of cocoa beans. Beans were ground into semi-finished products for use as inputs to chocolate production within the company (integrated chain). However, many such companies gradually withdrew from the less profitable grinding segment, which has thus become a separate business upstream of chocolate manufacturing. In a parallel move, the largest cocoa

³⁵ UNCTAD, TD/B/COM.1/EM.10/2, supra n. 25, at 12.

³⁶ Ibid, at 12.

trading companies took over these divested operations to a considerable extent, framing new patterns of vertical integration and horizontal concentration in the market (appendix 5).

Following these developments, one may now identify three main categories of companies operating in the grinding segment:

1. Companies with backgrounds in commodity trading and a widely diversified range of trading interests (such as ADM and Cargill);
2. Companies whose primary interest has traditionally been in producing semi-finished cocoa products and *couverture*, mainly for sale to third parties (for example, Barry Callebaut, Petra Foods and Bloomer);
3. Large chocolate companies that are primarily active in the branded consumer market, yet retain some grinding capacities to meet their specialty requirements (for example, Nestlé, Cadbury, Ferrero and Cemoi).

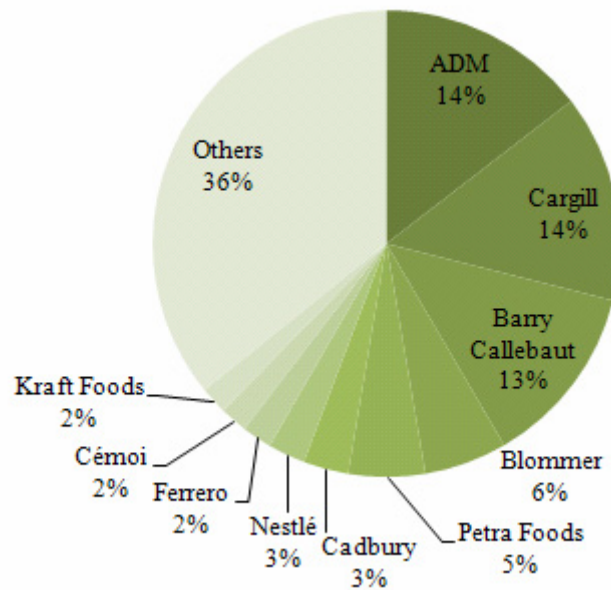
ii. Horizontal concentration

The structure of the grinding segment is significantly concentrated. It is estimated that, at present, some two-thirds of all grindings is done by the top 10 firms, with the three largest cocoa-processing companies –ADM, Cargill and Barry Callebaut – dominating the market. As shown in Figure 4 below, the latter would account for some 40 per cent of world grindings. The same large transnational companies have also taken over the exporting functions in the producing countries (see Section III.B.1 above).

As discussed in the previous section, the US-based conglomerates Cargill and ADM have entered the cocoa-processing segment in 1987 and 1997, respectively. In a few years, they have developed interests spanning from trade in cocoa beans through production and trade of semi-finished cocoa products to the manufacture of *couverture*, thus achieving a significant degree of vertical integration in the market. They are active in both producing countries (cocoa sourcing and logistics and, in some countries, cocoa processing) and consumer countries (manufacture and supply of semi-finished cocoa products and, a further step down the chain, *couverture* production and supply). While these companies did not manufacture and market their own finished products as part of their core activities, they now appear to be increasingly involved in the consumer market.

The Swiss-based Barry Callebaut group was created out of the 1996 merger of Callebaut, a leading industrial chocolate group, and Barry, with complementary sourcing activities and cocoa-processing operations. The company has traditionally had a significant element of vertical integration. Its involvement in the industry started with the cocoa origination and processing stages in the producing countries. In consumer countries, it is increasingly moving from semi-finished cocoa products and *couverture* (the latter being its traditional core business) into the manufacture of consumer chocolate.

Figure 4: Percentage share breakdown by global milling capacity (2006)



Source: UNCTAD secretariat, based on Barry Callebaut sourcing estimates.

The market has become increasingly concentrated over time. Appendices 1–3 list some of the major corporate deals (mergers and acquisitions) in cocoa processing and industrial chocolate manufacturing during 1970–2007. The timing of the consolidation process (by and large attained by the late 1990s) deserves attention.

It seems that concentration at the early processing stage (cocoa grinding) has increased in response to the need to gain scale in order to be more cost efficient. More precisely, both economies of scale and scope help reinforce the competitive edge of the large processing companies in various ways, as discussed below.³⁷

Cocoa processing is capital intensive. Cocoa bean processing equipment is expensive, requires a large tonnage throughput and must operate on a continuous basis. Moreover, cocoa processing is becoming more and more sophisticated, as cocoa processors are required to meet increasingly stringent quality requirements (delivery of customized products) and delivery requirements (supply on a just-in-time (JIT) basis). Process and product/recipe development requires continual investments in research and development (R&D), as well as dedicated equipment (with separate plants for batch production and for customized cocoa products). This adds to the need to gain scale. The economies of scale that are available to the largest processors in the industry are perceived as potential barriers to entry.

The largest processors (in particular, those with a wide spectrum of processing operations) are also able to take advantage of economies of scope by creating synergistic effects on a cross-commodity, intra-group basis (a sort of cross-subsidization between industry lines within the same corporate group). This concerns both R&D and logistics. As regards R&D, for example, grinders with expertise in food ingredients have the capability to transfer to their cocoa-processing operations some technology advances that have been achieved in their food ingredient business.³⁸ Strong, synergistic effects across industry lines on an intra-company basis have also been created in cocoa logistics. As discussed above, the largest cocoa trading companies adapted logistics expertise and infrastructure they had developed in other bulk commodity businesses to the cocoa trade. Major costs savings have been obtained via these changes in logistics, which have reinforced the competitive position of the largest processors.

³⁷ See Fold, 2002, *supra* n. 33, 237-238.

³⁸ *Ibid.* at 238.

Geographical proximity to chocolate manufacturers also confers major operational advantages. A cocoa presser located in the Netherlands, for example, will store cocoa butter in liquid form and deliver it in tanks to customers on a JIT basis, eliminating the need for customers to remelt the butter for use in their chocolate operations. Cocoa bean processors in more remote areas (especially if not served by well-developed transport infrastructures) will need to cool down the butter (a costly operation) and sell it at a discount (since the customer will have to remelt it).³⁹ Important “agglomeration externalities” stem from the proximity between cocoa processors and chocolate manufacturers, which is part of the reason why the world’s largest cocoa–chocolate conglomerate is located in the Zaanstreek/Amsterdam area.⁴⁰

3. Market for industrial chocolate

i. Recent changes

As already mentioned, the boundaries between cocoa processors and chocolate manufacturers have become blurred, as most cocoa processors also produce *couverture* (industrial chocolate).

Producers of industrial chocolate fall into two broad categories:

1. Vertically integrated groups which produce their industrial chocolate and mainly use it in-house to make consumer products (integrated chain);
2. Industrial processors that supply most of their output of *couverture* to third parties (market suppliers).

The first category includes the largest manufacturers of branded consumer articles, such as Nestlé, Mars, Hershey, Cadbury, Kraft Jacobs Suchard, Ferrero and Cemoi. As discussed above, their involvement in the industry used to start at the cocoa-processing stage, but most have decided to hive the less profitable grinding operations off from their core activities. For the most part, they still manufacture *couverture* for their own use, though there is a trend towards outsourcing even *couverture* production (and even production of the finished product, one step further along the production chain) to specialized contractors.

The second group of companies (market suppliers) include the leading cocoa-processing companies (such as Barry Callebaut, Cargill, ADM and Bloomer), which are also major players in the downstream *couverture* market. As discussed above, a few of them (ADM and Cargill) are companies active in cocoa processing – with backgrounds in commodity trading – which have only recently moved downstream into *couverture* production. Others (Barry Callebaut, for example) have traditionally been active in *couverture* production (their historical interest), besides their involvement in cocoa processing. Their involvement in the industry starts at the sourcing/trading level (within origin countries and internationally).

According to some estimates by Barry Callebaut, until recently the integrated chain still accounted for approximately 70 per cent of overall production of *couverture*. This situation, however, is evolving. In particular, there has been a trend towards branded consumer goods companies outsourcing production of semi-processed chocolate – liquid *couverture* – to a few selected suppliers. Cadbury, for example, recently signed a memorandum of understanding for a long-term supply agreement with Barry Callebaut. Cadbury is the third major food company to outsource its cocoa production to Barry Callebaut after Hershey and Nestlé (see Box 5). Eventually, it appears that the outsourcing trend in the industry is moving beyond industrial chocolate and has even reached the final consumer product, as consumer product

³⁹ ITC, 2001, supra n. 4, at 97-98.

⁴⁰ In Europe, the largest processors (Cargill/Gerrens Cacao and ADM/Cocoa de Zaan) are located in the Zaanstreek/Amsterdam area in the Netherlands, the world’s most important region for cocoa processing and export of cocoa products. Important competitive advantages (see below) are associated with this location. Barry Callebaut has most of its grinding capacity in Belgium and France.

manufacturers shift their focus towards marketing and source from third parties (see also appendix 5).⁴¹

Box 5: Global co-manufacturing deals in chocolate production

15 February 2007 – Nestlé announced that it would enter into a long-term agreement with Barry Callebaut for the supply of 43,000 tonnes per annum of liquid chocolate and the production of some Nestlé consumer products. The project also incorporates a commitment to supply Nestlé in Russia with liquid chocolate. At the same time, Barry Callebaut announced its intention to acquire from Nestlé the cocoa liquor and liquid chocolate production facility at the chocolate factory in San Sisto/Italy as well as a chocolate factory in Dijon/France (overall, approx. 100,000 metric tonnes production capacity). Barry Callebaut had previously (1999) acquired Nestlé's industrial chocolate business and assets in Italy. The acquired activity included a state-of-the-art production site located in Verbania, Italy.

26 April 2007 – The Hershey Company and Barry Callebaut announced a strategic supply and innovation partnership. Under the agreement, Barry Callebaut would construct and operate a facility to provide chocolate for Hershey's new plant in Monterrey, Mexico. Barry Callebaut would also lease a portion of Hershey's Robinson, Ill., plant, and operate chocolate-making equipment at the facility. The partnership included a long-term global agreement under which Barry Callebaut would supply Hershey with a minimum of 80,000 tons per year of chocolate and finished products

19 June 2007 – Barry Callebaut announced the signing of a memorandum of understanding with Cadbury Schweppes PLC to double its supply volumes of cocoa liquor and liquid chocolate to around 30,000 metric tonnes a year. Barry Callebaut would supply approximately an additional 14,000 tonnes a year of liquid chocolate and cocoa liquor to Cadbury Schweppes' production facilities in Poland.

Source: UNCTAD secretariat, based on a review of news releases by Barry Callebaut from 1989 to 2007.

ii. Concentration

The market for *couverture* is highly concentrated. Percentage market breakdown by company is shown in Figure 5. About three-quarters of the market worldwide is currently supplied by just four companies (Barry Callebaut, Cargill, Bloomer, ADM). Barry Callebaut alone claims a market share of roughly 40 per cent. The four top-ranking companies (Barry Callebaut, Cargill, Bloomer, and ADM) were also found to account for almost half of world grinding (Figure 4 above).

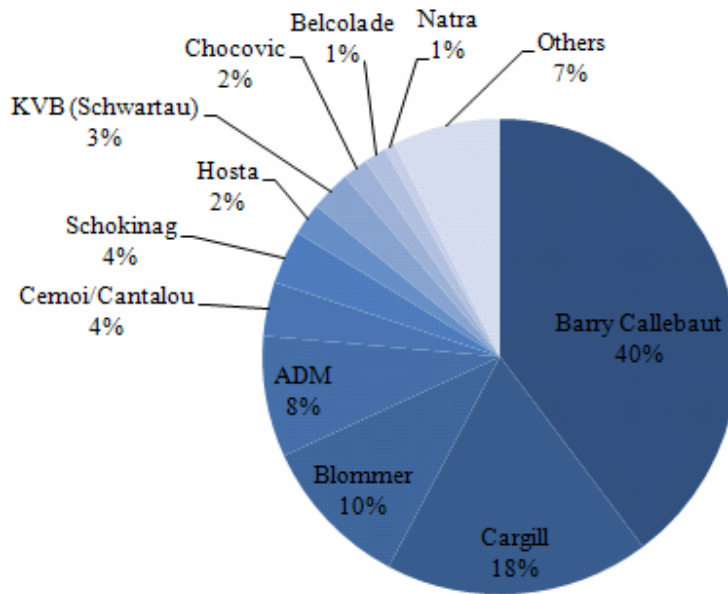
This aggregate figure masks stronger market concentration ratios in individual regional and national markets. In the United Kingdom, Belgium and the Netherlands, for example, Callebaut and Barry (then merged into Barry Callebaut) were estimated to control nearly three-quarters of supply of *couverture* to the market (1995). At the EU level, in the same year, they had 28 and 23 percent of the total respectively.⁴²

It should be made explicit that this analysis only refers to supply of *couverture* to the market. It does not refer to production of *couverture* within a vertically integrated group. Cadbury, Mars and Nestlé, for example, do not supply *couverture* to the market as part of their core business. Rather, they manufacture *couverture* for their own use in the production of consumer chocolate. Supply within integrated groups still accounts for the biggest part of *couverture* production.

⁴¹ This outsourcing strategy has been pursued by branded consumer goods companies with a wide spectrum of business interests (such as Nestlé and Hershey, for example). Consumer chocolate companies with their core business in chocolate products (like Ferrero and Lindt & Sprüngli) have continued to invest in grinding operations.

⁴² UK Monopolies and Mergers Commission, *Klaus J Jacobs Holding AG and Société Centrale d'Investissements et Associés. A report on the merger situation* (presented to Parliament in June 1997), at 47-48.

Figure 5: Market shares, world market for industrial chocolate (2005)

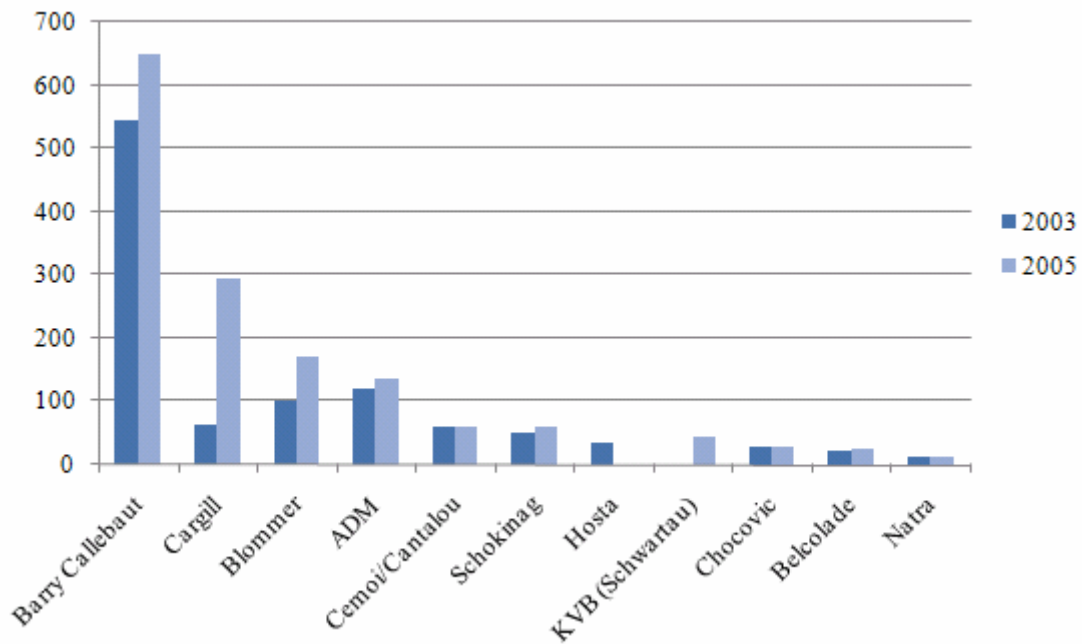


Source: UNCTAD secretariat, based on Barry Callebaut estimates.
Note: Total market in industrial chocolate estimated at 1.60 million tons.

As in cocoa processing, the market has become increasingly concentrated over time. The concentration process has involved mergers to form larger combined entities (for example, the 1997 merger of Callebaut AG and Barry SA to form Barry Callebaut) and takeovers by the large international concerns of smaller companies that mainly operated in a national context.

As shown in Figure 6, the top-ranking companies are those which are growing faster. This may also reflect the trend towards brand companies outsourcing their production requirements to a few selected suppliers, thus expanding their market share. Another notable feature is the rapid market expansion of companies (such as Cargill) which moved from their trading backgrounds into cocoa processing and then *couverture* production.

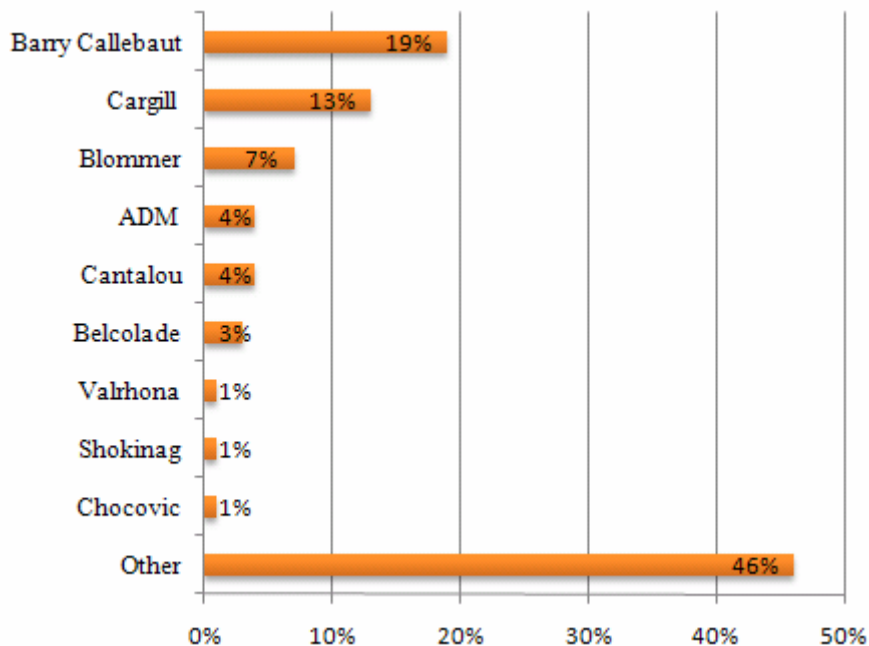
Figure 6: Top suppliers of industrial chocolate, world market (1,000 tonnes, 2003-2005)



Source: UNCTAD secretariat, based on Barry Callebaut estimates.

As shown in Figure 7, the gourmet segment (subsumed under industrial chocolate in the above analysis) is comparatively less concentrated and more fragmented than the overall industrial segment. Gourmet and specialty products are typically supplied to artisanal users, including chocolate makers, pastry chefs, bakers, hotels, and gastronomy (whether industrial chocolate caters for industrial processors – the branded consumer goods manufacturers who produce chocolate, confectionery, bakery and dairy products).

Figure 7: Market shares, Gourmet and Specialties, world (2005)



Source: UNCTAD secretariat, based on Barry Callebaut estimates.

4. Consumer chocolate

i. Actors

Actors engaged in the downstream consumer chocolate market vary widely, in terms of not only size but also range of business interests. For the most part, they can be divided into three broad categories.

The first group – by and large the most important in the market – is represented by a small number of branded consumer goods companies that mostly operate in a global context. The leading companies of this group are the suppliers of well-known chocolate consumer products, such as Nestlé, the Hershey Company, Kraft Foods, Cadbury Schweppes, Ferrero. A few have their core business in chocolate products (such as Ferrero and Lindt & Sprüngli), but most (e.g. Nestlé, Hershey and Kraft) have developed wider interests extending from beverages through confectionery products (chocolate and non-chocolate) to other grocery sectors (dairy, bakery, etc.). Some, such as Lindt & Sprüngli, have specialized in the production of “prestige” chocolate products. As discussed in the previous section, in addition to consumer products, all are engaged in the manufacture of *couverture* (for their own use or for subcontractors for sale under their brand name).

Besides the largest branded consumer goods companies, two other categories of actors are active in the consumer market: smaller gourmet and artisanal chocolate processors; and a few large market suppliers of industrial chocolate.

The former group includes companies (and professionals) that produce and market consumer chocolate products but do not produce *couverture* or cocoa ingredients. These range from professional or artisanal users (such as confectioners, “pâtisseries” and bakers) through small and medium-sized chocolate confectionery companies to large manufacturers of bakery and dairy products.

The latter are the largest players in upstream segments (cocoa processing and *couverture* manufacture), who are also – increasingly – present in the consumer segment. Barry Callebaut, for example, is now firmly established in the consumer product segment, operating under the Sarotti, Alpi, Sprengel, Jacques, Alprose and (until recently) Brach’s brands. The acquisition in 2002 of Stollwerck GmbH created the platform for Barry Callebaut’s strong position in Germany, Europe’s largest market for consumer chocolate. The 2003 acquisition of Brach’s Confections Holding, Inc. complemented the company’s presence in sugar confectionery in North America, although this latter business has been discontinued. Other companies whose main relevant interests are in cocoa processing and industrial chocolate have also expanded revenue mix with finished and semi-finished chocolate products.

ii. Concentration

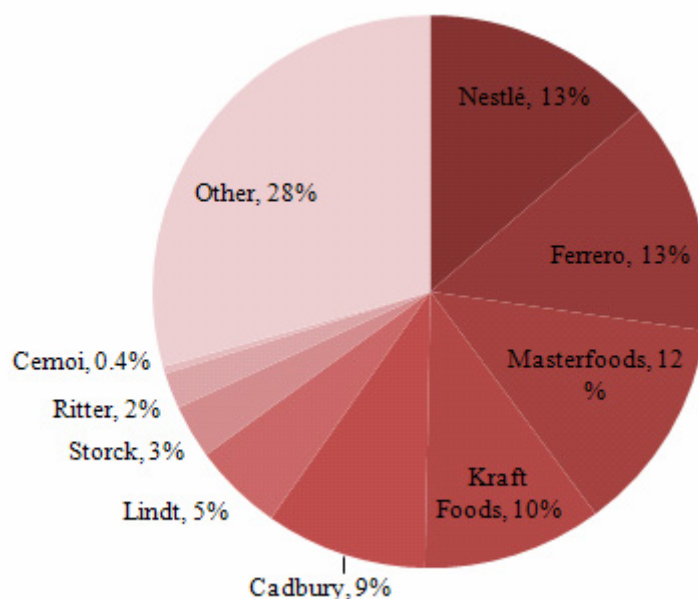
Concentration in consumer markets has gone hand in hand with increased concentration in the processing (cocoa) and manufacturing (*couverture*) segments of the cocoa and chocolate industry.

In the past, chocolate companies were more diverse than at present and mainly consisted of companies marketing their products on their own domestic markets. The market is now dominated by large multinational confectionery companies, which market their brands in all major consumer countries. Following a series of mergers and acquisitions in the chocolate industry, five companies alone – Nestlé, Ferrero, Mars, Kraft Jacobs Suchard, and Cadbury Schweppes – have come to control more than half of the European market for consumer chocolate. This aggregate figure masks a higher degree of concentration in specific national markets and for specific product categories. Already in the mid-1990s, for example, Cadbury, Mars and Nestle accounted for approximately 75–80 per cent of the UK chocolate confectionery market.⁴³

⁴³ UK Monopolies and Mergers Commission, 1997, *supra* n. 42, at 40.

Concentration has taken place primarily through mergers and acquisition of smaller companies with strong local brands in national markets.

Figure 8: European market for consumer chocolate (2005)



Source: UNCTAD, based on AC Nielsen, Euromonitor.

The importance of global brand recognition and commercial marketing strategies are major factors underlying structural developments in the consumer segment.

In the consumer market, a strong brand name is an element of market power, particularly in specific product markets (chocolate snacks, for example). New entrants need massive marketing campaigns to promote new brands. The high advertising budgets necessary for promoting brand recognition translate into barriers to entry. Heavy investment in product development and brand marketing is also needed to maintain a strong position.

On the other hand, the manufacture of consumer chocolate is not particularly capital intensive. Structural barriers linked to economies of scale do not play a major role, even if some considerations may arise in connection with R&D associated with product development and in connection with distribution logistics. In practice, the latter may become an important barrier as the big supermarket chains have stringent logistics requirements for selected suppliers. Actually getting approved as a supplier for the large supermarket chains (or the large wholesaling firms) is a barrier in itself.

5. Retailing

Concentration in the cocoa and chocolate industry mirrors developments on the retail side, where market concentration has also increased. Retailing involves selling products and services directly to consumers for their personal, non-commercial use. Here, it is differentiated from the “food-service” segment, which includes such services providers as international franchise fast-food chains, traditional restaurants, food-on-the-go kiosks, and other.

i. Distribution channels

Most large branded consumer goods companies operate a worldwide network of distribution centres and warehouses, often in support of their “direct-store-delivery” systems.⁴⁴ Through

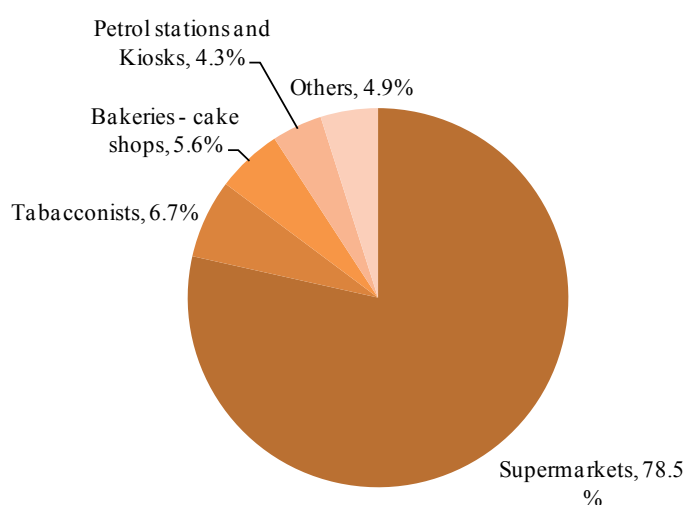
⁴⁴ In “direct-store-delivery” goods are delivered to the buyer’s store instead of going through a warehouse or distribution centre).

these facilities, the well-known chocolate consumer products are generally sold to supermarket chains,⁴⁵ wholesalers, convenience stores, gasoline stations, drug stores, and other retail food outlets.

Supermarkets' share of food retailing has increased steadily, and they now account for an important segment of food retail operations in North America, Western Europe, and Japan. Across these regions, supermarkets' share of food retailing is assessed in the range of 75–85 per cent, with some variations across countries. The supermarket sector is also developing rapidly in Latin America, East Asia, Central and Eastern Europe, and in the Middle East.

Supermarkets capture by and large the biggest share in chocolate distribution. Dorin identifies five major distribution networks for chocolate products in France, one of the largest consumer chocolate markets.⁴⁶ Their respective market shares are given below. More than three-quarters of consumer chocolate is supplied by supermarkets.

Figure 9: Chocolate distribution channels in France - market shares



Source: Dorin (2003), based on 2001 data from XERFI (see footnote 46).

ii. Concentration

In general, the retail sector for food products is consolidating. There is consistent evidence throughout regions of rapid consolidation of the supermarket sector and penetration by foreign chains (“multinationalization” of the sector). Large food retail chains have increased their dominance of markets over time by concentrating through mergers and takeovers, at both the domestic and the international level. According to M+M PlanetRetail (Table 4), the top 30 grocers accounted for approximately 34 per cent of worldwide retail sales in 2004, up from 29 per cent in 1999. These figures take into account sales of all stores under a retailers’ banner (retail banner sales). Again, this data masks important variations across countries. In the United Kingdom, for example, Tesco, Sainsbury, Asda and Safeway were the four largest

⁴⁵ Supermarkets is a term we use for convenience to mean all large-format “modern retail”, characterized by the self-service (as opposed to over-the-counter) offer of a wide range of grocery and other products, high-volume procurement and a centralized distribution system. Within this range are some broadly recognized types of outlet, such as “supermarket” (*stricto sensu*) and “hypermarket”. Hypermarkets are bigger in size than supermarkets, normally include furniture, clothing, appliances, and other items and display products in bulk quantities, with minimum handling by store personnel.

⁴⁶ Dorin, 2003, above n. 15, at 15-16.

grocery retailers measured by share of grocery sales from reference stores in 1998/99. Between them, they were found to account for more than 70 per cent of supermarket sales.⁴⁷

Table 4: Global grocery retail rankings (by total retail sales), 2004

#	Company	Country Of Origin	Total Retail Banner Sales	Share
1	Wal-Mart	USA	310,576	6.3%
2	Carrefour	France	112,240	2.3%
3	Ahold	Netherlands	88,179	1.8%
4	Metro Group	Germany	79,874	1.6%
5	Tesco	UK	68,164	1.4%
6	Ito-Yokado	Japan	58,757	1.2%
7	Kroger	USA	58,647	1.2%
8	Rewe	Germany	54,484	1.1%
9	Target	USA	53,949	1.1%
10	Costco	USA	51,199	1.0%
11	AEON	Japan	50,746	1.0%
12	Auchan	France	50,447	1.0%
13	Casino	France	50,012	1.0%
14	Aldi	Germany	46,863	0.9%
15	ITM	France	46,430	0.9%
16	Schwarz Group	Germany	46,388	0.9%
17	Albertsons	USA	41,975	0.8%
18	Edeka	Germany	39,584	0.8%
19	Walgreens	USA	39,485	0.8%
20	Safeway	USA	39,112	0.8%
21	Leclerc	France	38,089	0.8%
22	Tengelmann	Germany	33,094	0.7%
23	CVS	USA	32,564	0.7%
24	Sainsbury	UK	30,343	0.6%
25	JCPenney	USA	28,029	0.6%
26	Morrisons	UK	25,738	0.5%
27	Coles Myer	Australia	25,480	0.5%
28	Woolworths	Australia	25,169	0.5%
29	Delhaize Group	Belgium	24,042	0.5%
30	Loblaw	Canada	22,433	0.5%
	Top 30		1,672,092	33.8%
	Others		3,277,565	66.2%
	Total		4,949,657	100.0%

Source: PlanetRetail, 2005.

Note: Reference is here made to the total retail sales by the major grocers, rather than to their grocery sales.

⁴⁷ Back in the late 1990s, the United Kingdom Competition Commission was asked to investigate and report on the supply in the country of groceries from multiple stores. The inquiry was launched because of a public perception that the price of groceries in the United Kingdom tended to be higher than in other comparable countries and an apparent disparity between farmgate and retail prices. See UK Competition Commission, *Supermarkets: A report on the supply of groceries from multiple stores in the United Kingdom* (report presented to Parliament by the Secretary of State for Trade and Industry by Command of Her Majesty October 2000).

IV. Concentration, competition and efficiency

As discussed above, the cocoa and chocolate chain is significantly concentrated at various stages. In many (remote) locations, cocoa producers face an oligopsony, or even monopsony, situation. In consuming countries, concentration is increasing on the retail side of the chain. The markets for intermediate products (semi-finished cocoa products and *couverture*) are in general characterized by the interaction between oligopsonistic and oligopolistic structures.

This chapter blends insights from the previous analysis on market structures with information on price trends in the cocoa and chocolate industry. The analysis points only to developments in prices and cost structures that are – at least partially – observable alongside market consolidation and restructuring. Insufficient information was available to undertake a thorough fact analysis of costs and margins within the chain.

A. Cocoa purchasing

As discussed in the previous chapter, liberalization has resulted in increased concentration in the export sector, with a tendency for foreign trading and processing companies to integrate backward into origin countries. Oligopsonistic structures have emerged in cocoa purchasing at both the local level and the international level. It is worth considering whether meaningful price developments may be put in perspective against these patterns of consolidation and restructuring.

The following analysis is based on the evaluation of:

- The share of producer prices, converted into dollars, in the world price;
- Complementary data on marketing costs and taxes;
- The analysis of other factual elements.

The analysis focuses on price developments since liberalization.

1. Producer prices and world prices

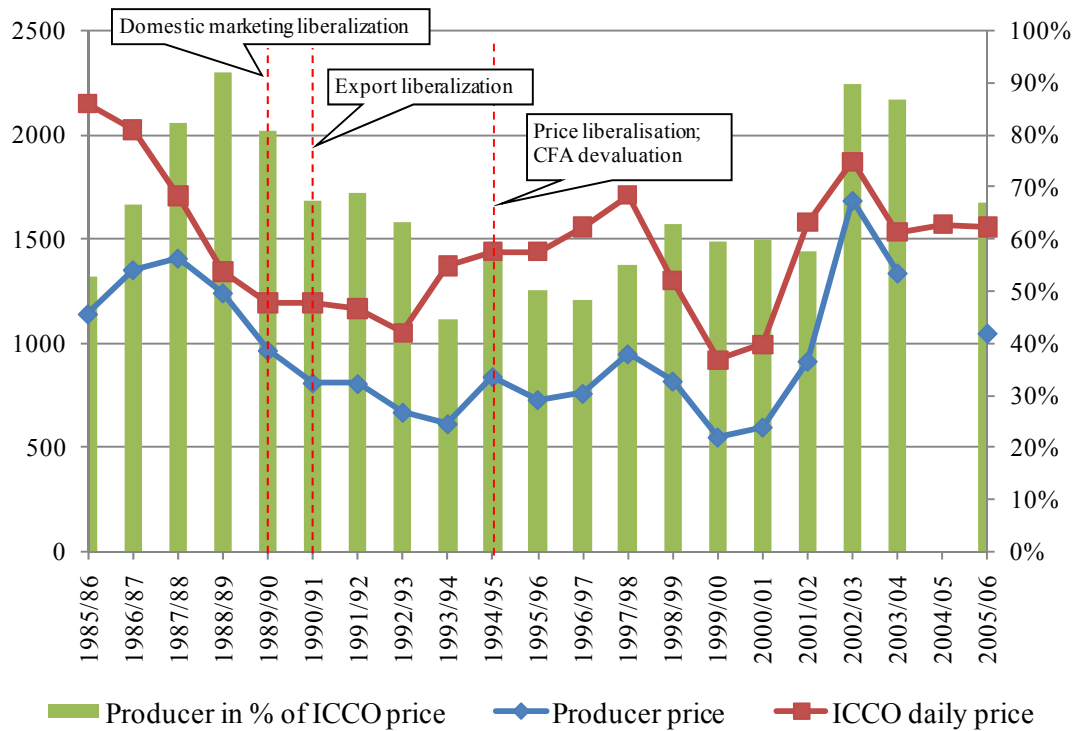
Some insight can be drawn from relative movements in producer and world prices. The ICCO Indicator Price is interpreted here as the world price, and is taken as a proxy for export prices.⁴⁸ The evolution of the producer share in the world price may provide some broad indication as regards the possible exercise of market power within the cocoa chain.

Figure 10 charts cocoa producer prices in Cameroon and the international reference price for cocoa (the ICCO indicator price). Prices are expressed per cocoa year (rather than calendar year) in current US\$. Both series have been provided by ICCO. The share of the producer prices in the world price is plotted on the secondary axis.

Between 1987–88 and 1996–97, the producer share declined by roughly 47 per cent in nominal terms. Important structural changes had taken place over this reference period, with the liberalization of internal and external marketing structures (in 1989–90 and 1990–91), and full price liberalization (since the 1994–95 cocoa year). However, the establishment of links between these structural changes and the evolution of the producers' share is merely speculative. The producers' share strengthened slightly between 1996–97 and 2001–02 (a 19 per cent increase, in constant terms). It increased sharply over the subsequent cocoa year before falling once again.

⁴⁸ In the cocoa trade, futures contracts traded on the London International Financial Futures Exchange (LIFFE) and the New York Board of Trade (NYBOT) are used as the international pricing benchmark. In Cameroon, export prices are correlated with the LIFFE future prices.

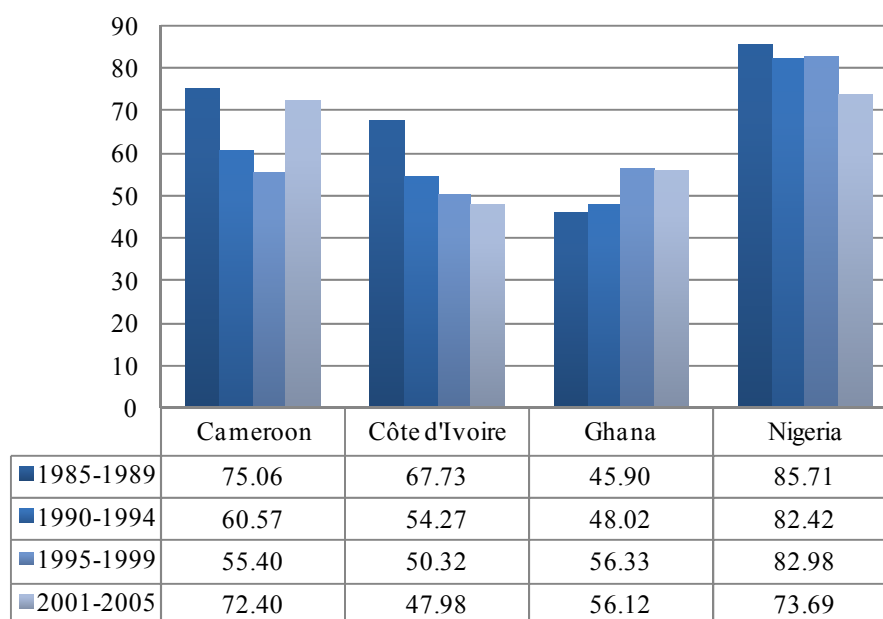
Figure 10: Cameroon - Cocoa producer prices and world prices (current US\$/tonne)



Source: UNCTAD, based on ICCO data.

Note: Analysis carried out in US\$/tonne, current terms. Dates refer to cocoa years. The ICCO Indicator Price is the average of the daily prices of the nearest three active future trading months on the London Terminal Market and on the New York Coffee, Sugar and Cocoa Exchange at time of the London close.

Table 5 provides the data on the producer share in the world price averaged over five-year segments, covering the 1985–2005 period. This table allows a comparison of the four major cocoa-producing countries in Africa. The data show a decline in the producers’ share of world prices across three of the four largest producing countries (with a partial reversal of the trend in Cameroon in recent years). Although it is not possible to ascribe this downward move to the structural changes highlighted in the previous chapter (the increased penetration of foreign capital and the concentration process), these price movements should be appreciated even in the light of these concurrent structural developments. More rigorous analysis of the timing of the concentration process is needed, among other things, to establish meaningful correlations.

Table 5: Producer prices as share of world prices

Source: UNCTAD based on ICCO data.

Note: Analysis carried out in current US\$. The ICCO Indicator Price is the average of the daily prices of the nearest three active future trading months on the London Terminal Market and on the New York Coffee, Sugar and Cocoa Exchange at time of the London close. Dates refer to cocoa years (from 1985–86 to 2005–06; 2001–2005 includes 2000/2001–2005/2006, six-year, rather than five-year average).

A notable feature is the rise of the producer share in Ghana, the sole country that has still to fully liberalize.⁴⁹ Here, the positive evolution of the producer share is probably more a matter of quality than market structures. Yet the quality issue is closely related to the evolution of market structures. In particular, the distinctive quality parameters and consistency of Ghana beans (high fat content and rich flavour, which attract a price premium in the world market) depend on specific practices in the domestic supply system (careful fermentation and drying processes and stringent quality control and grading systems throughout the domestic chain), which in turn involve structural features (notably, the State-controlled system for grading and sealing for export). In the other countries, the removal of public quality control systems and the introduction of bulk logistics systems are among the factors that have contributed to the loosening of quality requirements. These developments are, to a considerable extent, related to the disengagement of the State from the cocoa industry and the penetration in the export sector of transnational grinding companies with backgrounds in bulk commodity trading.

2. Complementary data on domestic marketing costs and taxes

The analysis of complementary data on marketing costs and taxes is particularly insightful.

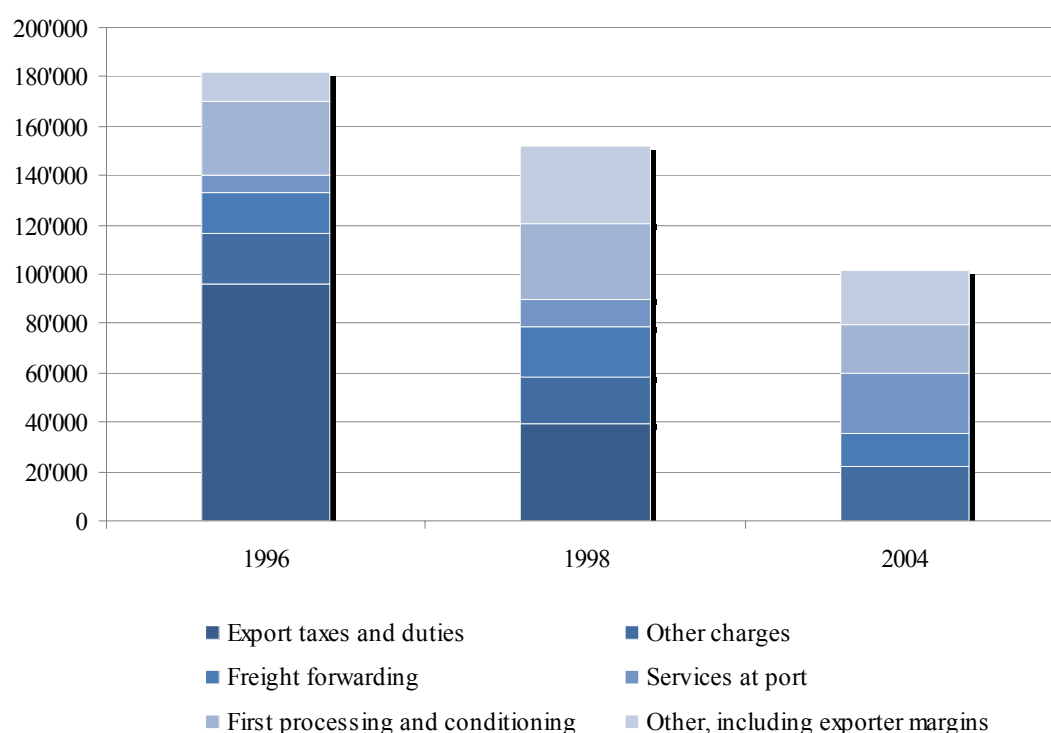
Figure 11 provides a breakdown of expenses incurred in the cocoa chain in Cameroon. It is based on the analysis of detailed breakdowns of (i) taxes and other charges levied on cocoa shipments and (ii) costs incurred at the factory and port of export levels. “Export taxes and duties” include the explicit export taxes (like the *droit de sortie*) levied on exports. “Other charges” cover various fees to the benefit of certain institutions,⁵⁰ quality inspection fees,⁵¹

⁴⁹ As seen in table 1, in Ghana export marketing still remains, to a considerable extent, under parastatal control; cocoa producer prices and other rates and fees are still determined pursuant to a price-setting procedure (Producer Price Review Committee); the Quality Control Division of Cocobod continues with the monopoly system of grading and sealing of cocoa for export. The continued intervention in price setting is to be taken into account when comparing Ghana with other cocoa producing countries.

⁵⁰ Fees paid to the National Cocoa and Coffee Board (NCCB), the Cocoa and Coffee Interprofessional Council (CICC), and the International Cocoa Organization (ICCO). A fee is also levied on behalf of the Cocoa and Coffee Subsector Development Fund.

and other administrative costs. Together, “Export taxes and duties” and “Other charges” constitute Government’s share of the export value of the cocoa. “Freight forwarding”⁵² covers the forwarder’s overhead and the costs incurred (formalities associated with shipping, insuring and documenting of cocoa and maintenance of the delivery at port). The category “Services at port” essentially covers costs associated with quality inspection and phytosanitary treatment, storage and insurance at port, lightering and other logistics costs (recently, container stuffing), and other expenditures as well (e.g., reconditioning). “First processing and conditioning” essentially refers to expenditures (drying, sorting, bagging, weighing, marking, storage, etc.) incurred at the factory level (conditioning plants, generally located close to the port of export). “Other costs and margins” includes other costs borne by the exporter and estimates on the exporter’s profit margin.

Figure 11: Breakdown of marketing costs and taxes, domestic chain



Source: UNCTAD based on NCCB data.

Two important insights can be drawn from this analysis.

First, there has been a notable reduction in taxation. More precisely, there has been a dramatic decrease in the incidence of direct export taxes, only partially outweighed by the introduction of new indirect taxes (the latter explains the rise of the “Other charges” component). On the other hand, it does not appear that marketing costs have declined significantly (at least at the factory and export port levels – accounted for in this analysis). On the contrary, the figures show a remarkable increase in the incidence of the service cost components at port. It was not assessed whether these two developments were interrelated, i.e. whether the abolished public

⁵¹ In August 1997, the Government licensed the Société Générale de Surveillance (SGS), La Cordeler Cameroun, SA, and L’Observatoire Camerounais de la Qualité (OCQ) to control the quality of Cameroon’s coffee and cocoa prior to exportation.

⁵² The forwarder, also referred to as a freight forwarder or a forwarding agent, is a physical person or company who arranges the carriage of goods and the associated formalities on behalf of a shipper, or exporter. He takes delivery at the port or point of shipment.

revenues had been used to subsidize port services, which would explain the increase in the port service component following reduction in taxation.

Since producers' share in the export price depends on marketing costs and taxes, it appears that recent increases in farmers' share of the export price have resulted more from the reduction in taxation than from cost savings arising out of more efficient intermediation.

Second, the incidence of the "exporter's share" has become more significant over the period. Insufficient information was available to enable a thorough discussion on whether this increase was due to rising costs or growing profits. The "exporter's share" here only includes some general costs incurred by the exporter and the exporter's profit margin. It does not refer to all the functions to get the cocoa ready for shipment and into the ship. These functions are here scattered across other cost components, since proceeds in practice accrue to other parties – the freight forwarder, for example.

3. Other factual elements

The evolution of prices, costs and margins is at the heart of competition analysis. However, other factual elements of a more qualitative nature may provide some insight into practices in producing countries that may come under the purview of competition law. In Cameroon, a review by the National Cocoa and Coffee Board of quality control certifications and export sales declarations has revealed some discrepancies that may point to contentious practices.⁵³

In Cameroon, only Grade I and Grade II beans cocoa is suitable for export (Grade I being the highest quality grade). Pre-shipment samples of cocoa meant for export are taken for bean count analysis and grading to determine quality and the appropriate quality certificate issued.

During the 2006/2007 campaign, from August 2006 to July 2007, more than 10,796 metric tons of cocoa for export was certified by six accredited companies as Grade I. However, all sales contracts entered into by exporters (154,196 metric tons of cocoa, over the same period) indicated Grade II. Hence, all cocoa was exported from Cameroon in Grade II, despite the 10,796 metric tons of cocoa for export certified as Grade I.

This discrepancy may be explained by the fact that GI cocoa was exported as GII – which means that exporters in Cameroon obtained "devalued" export sales contracts from their buyers. This may reflect the relative strengths of the bargaining position of the international buyer and the local exporter, or some collusive practices between the two. From a competition law perspective, this type of behaviour may possibly be classified as an abuse. It is important to stress that structural conditions in the cocoa market (with a limited number of buyers that have integrated backward into producing countries) are easily conducive to this type of behaviours.

It is, of course, not unlikely that this discrepancy is due to other factors, such as the blending of GI cocoa and cocoa HS (i.e. *hors standards*, or not suitable for export) in order to meet market demand (GI + HS = GII) or to some form of misreporting.

This is a rather contentious area that may possibly deserve closer scrutiny.

B. Intermediate nodes: Early processing stages and *couverture* manufacture

The following analysis draws heavily on calculations and methodology by Dorin.⁵⁴ The analysis was based on data series retrieved from EUROSTAT (COMEXT) for the period 1995-2006. It considers imports of semi-finished cocoa products and *couverture* into major recipient countries (Belgium, Luxemburg, France, Germany and – for *couverture* - Netherlands) from the Member States of the European Union (EU25). Based on these intra-

⁵³ National Cocoa and Coffee Board (Cameroon), *Bilan de la Campagne Cacaoyere 2006 - 2007*, August 2007

⁵⁴ Dorin, 2003, *supra* n. 15.

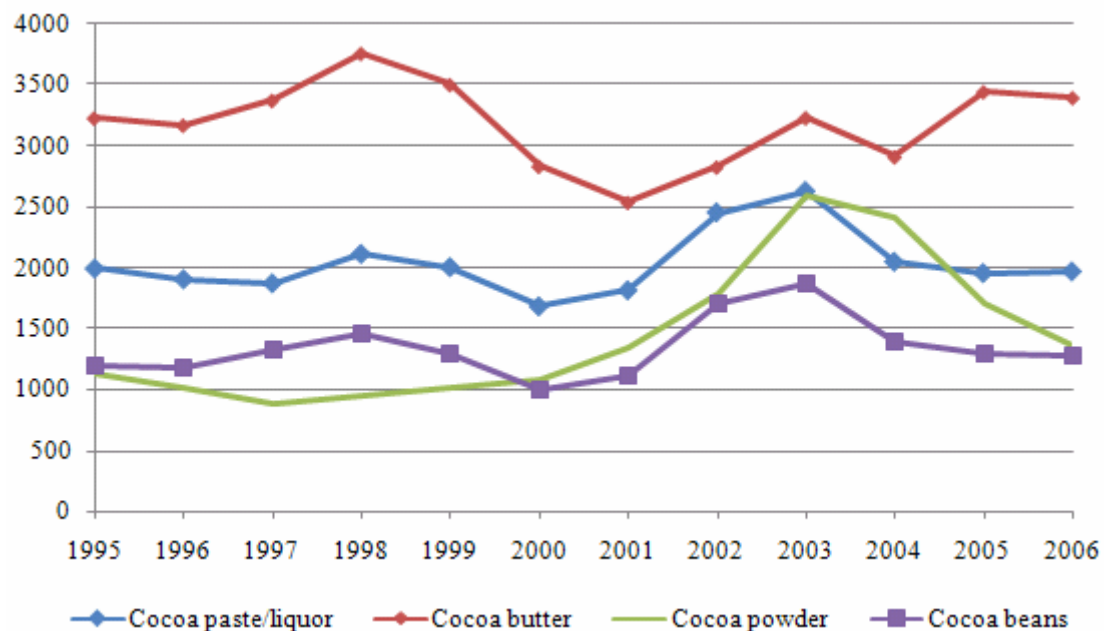
EU trade flows, import unit value data are interpreted as proxies for unit prices of semi-finished cocoa products and *couverture* in Europe.

This is a rough estimation in more than one respect (in particular, trade data are interpreted as proxies for ex-factory prices). It may nonetheless provide some indication on price trends for cocoa ingredients and industrial chocolate in the European market. As discussed below, the analysis does not lend much support to the claim that the largest cocoa processors and *couverture* manufacturers have exploited their position of market power (on the supply side) in the European market to increase prices.

1. Semi-finished cocoa products

The price of semi-finished cocoa products used as inputs for *couverture* production (i.e. cocoa liquor/paste and cocoa butter) has fluctuated over time, sometimes significantly, along an essentially flat trend. As with other industries that use basic raw materials and relatively simply processing, the pricing of semi-finished cocoa products is fairly transparent (price of semi-finished cocoa products are related to futures prices of cocoa beans via product price ratios).

Figure 12: Unit price (intra-EU trade) of cocoa liquor, butter and powder (euros/tonne)



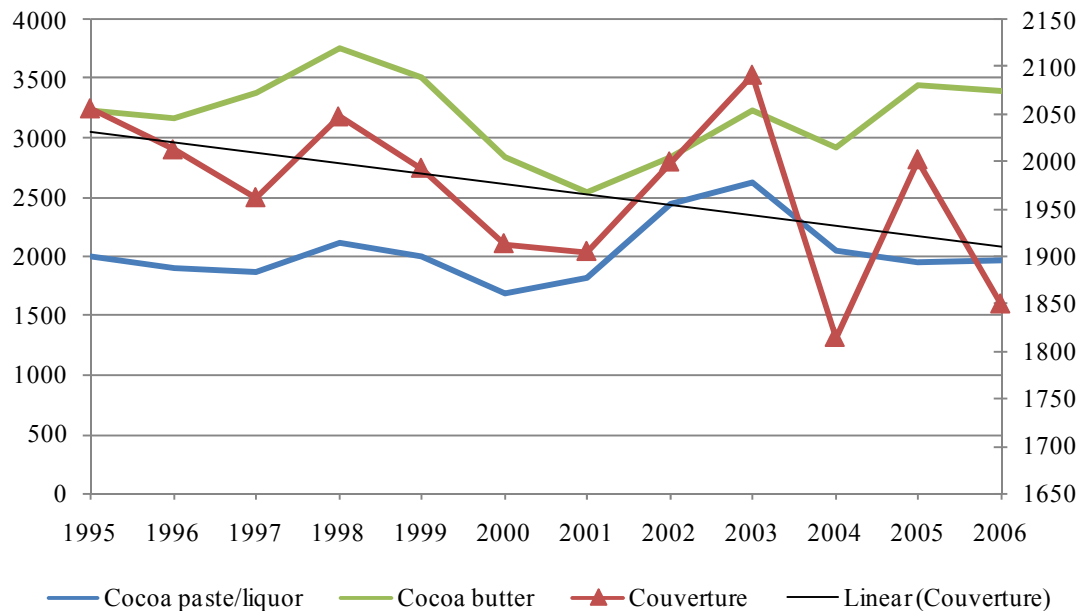
Source: UNCTAD secretariat, based on data from EUROSTAT (accessed 17 September 2007).

Note: Cocoa paste/liquor, excl. defatted (HS96 180310): inward flows to Belgium-Luxemburg, France and Germany from within Europe (EU25). Cocoa butter (HS96 180400): inward flows to Belgium-Luxemburg, France and Germany from within Europe (EU25). Cocoa powder, unsweetened (HS96 180500): inward flows into Belgium-Luxemburg, France and Germany from within Europe (EU25). Cocoa beans (HS06 180100): CIF Netherlands (origin: Côte d'Ivoire, Ghana, Nigeria, and Cameroun). The figures gave the quantities and the euro values of these inward flows. The ratio of the euro value to the tonnage gave the euro unit value.

2. Couverture

The price of *couverture* fluctuated – although more moderately than the prices of the underlying cocoa products – along a slightly declining trend. Changes in output prices (*couverture* price) quite closely reflected changes in cocoa input costs (together with milk and sugar, the raw materials for *couverture*).

Figure 13: Unit price (intra-EU trade) of *couverture* (euros/tonne)



Source: UNCTAD secretariat, based on data from EUROSTAT (accessed 17 September 2007).

Note: *Couverture* price series plotted on the secondary axis. Product: HS96 180620 (*Other preparations in blocks, slabs or bars weighing more than 2 kg or in liquid, paste, powder, granular or other bulk form in containers or immediate packings, of a content exceeding 2 kg*). Reporter: Belgium-Luxemburg, the Netherlands, France, Germany. Partner: EU25 (intra-EU trade). Linear = Linear trend line, using the method of least squares.

Two factors may have contributed to the efficient functioning of the *couverture* market, despite significant concentration on the supply side: transparency of pricing and “customer power”.⁵⁵

First, the main raw materials for *couverture* are actively traded and have transparent prices in the industry. The cost of these raw materials is estimated to make up over 80 per cent of the price of *couverture*. Transparency of pricing is also assisted by the fact that a few customers who purchase *couverture* are chocolate makers who buy from the market to supplement their own *couverture* production. These customers are generally well informed about the costs of raw materials inputs, overheads and additional costs involved in producing *couverture*. Over time, they can identify (and check) the margin charged by the *couverture* supplier.⁵⁶

The second factor mentioned above refers to the strength and purchasing behaviour of customers. In the *couverture* market, these include large multinational food manufacturers (Nestlé, for example) with professional procurement departments. As emphasized by a large industrial processor, the strength of such companies is “an effective deterrent against any supplier attempting to abuse its market share”.⁵⁷

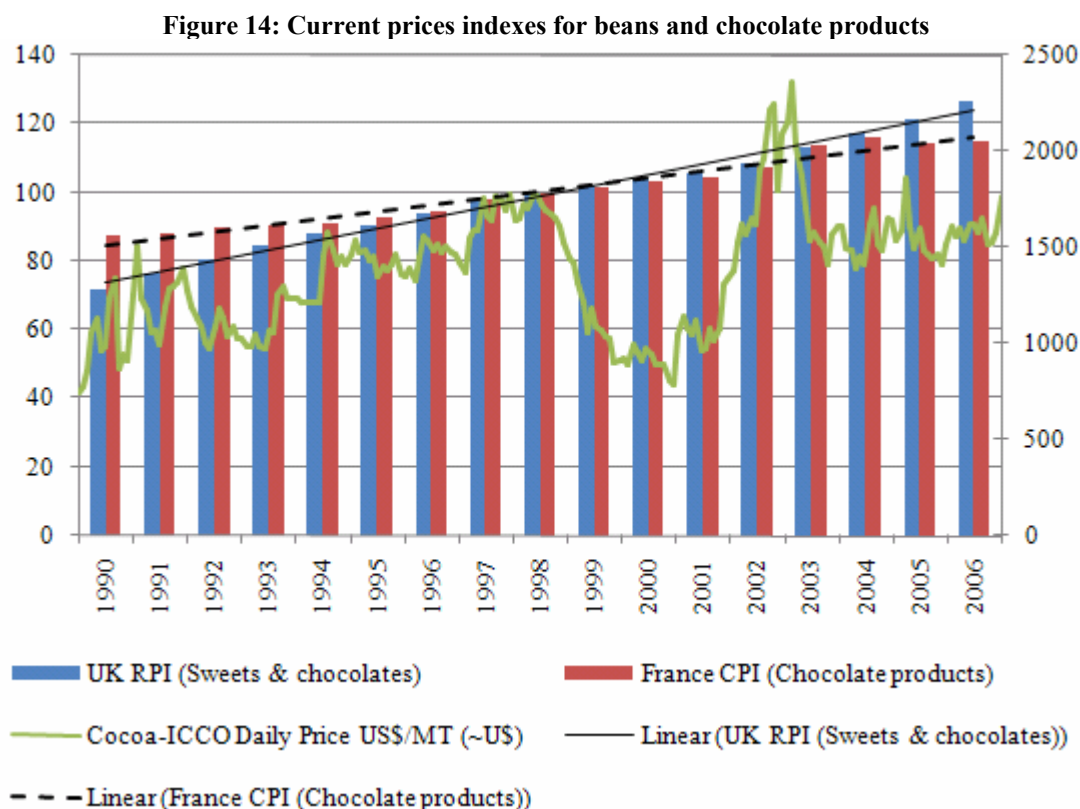
⁵⁵ As put forward by Barry Callebaut in the Barry-Callebaut merger inquiry. See UK Monopolies and Mergers Commission, 1997, *supra* n. 42, at 59. The same may hold, *mutatis mutandis*, for supply of semi-processed cocoa products as well.

⁵⁶ *Ibid.*

⁵⁷ *Ibid.*

C. End node: marketing and distribution

The following analysis confirms some findings by Dorin (2003) and Gilbert (2006).⁵⁸ While cocoa and *couverture* prices have moved over time along a flat and even declining trend, the retail prices of chocolate products have generally tended to increase. This upward trend is captured in Figure 14 by the evolution of the retail prices index for chocolate products in two large consumer markets (the United Kingdom and France). Both indices measure retail price changes (100=1998). Linear trends are used to graphically display trends in the two data series.



Source: UNCTAD secretariat, based on data from INSEE, UK and UNCTAD Globstat (ICCO).

Note: Linear = Linear trend line, using the method of least squares. The UK index is the “sweets and chocolates” component of the UK Retail Prices Index (RPI); the French index is the “chocolate-based products” component (chocolate tablets and chocolate confectionery) of the INSEE Consumer Prices Index (CPI). They are expressed in terms of the comparison of prices relative to 1998, when the index is given a value of 100. The ICCO reference price is the average of the daily prices of the nearest three active future trading months on the London Terminal Market and on the New York Coffee, Sugar and Cocoa Exchange at time of the London close.

In Figure 14, the international reference price for cocoa beans is plotted on the right vertical axis. The figure shows retail prices rising steadily over the 1990–2006 period, regardless, in many instances, of the evolution of the cocoa beans cost component. From previous analysis, it does not appear that this upward trend in retail prices is justified by increases in the underlying prices of semi-processed products. As previously discussed, the price of semi-finished cocoa products fluctuated over time along an essentially flat trend; the price of *couverture* even fluctuated along a slightly declining trend. It may be inferred, from this and from the previous analysis, that declines in *couverture* prices and in the underlying prices of cocoa and cocoa-based ingredients (paste/liquor and butter) were not transmitted or were transmitted imperfectly to domestic consumer prices.

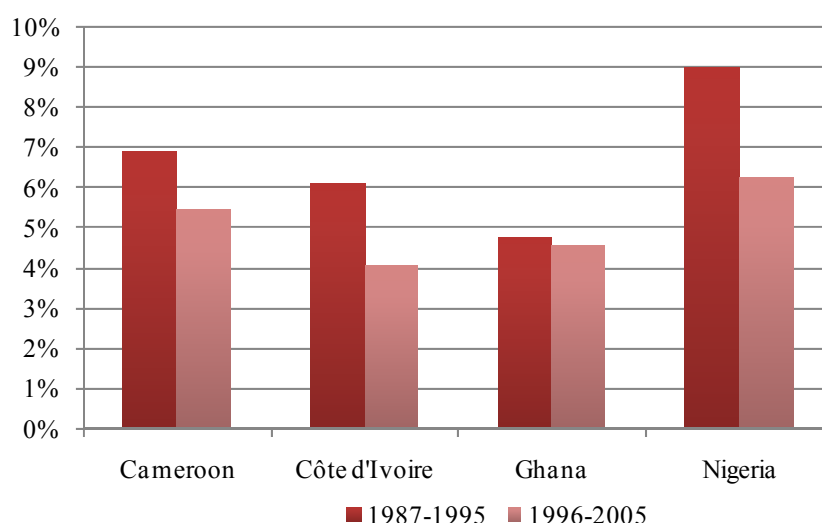
⁵⁸ Dorin, 2003, supra footnote 15; Christopher L. Gilbert, *Value Chain Analysis and Market Power in Commodity Processing with Application to the Cocoa and Coffee Sectors*, Discussion Paper No. 5 (Università degli Studi di Trento, 2006).

On the one hand, this situation may be indicative of increasing profit margins downstream of the chain, especially at the retail level, which may reflect the growing market power of the big retail chains.

On the other hand, it may reflect the relative weight and growth of marketing and distribution costs in the value-adding process beyond the processing stage. These added costs – incurred in the consuming countries – typically refer to advertising and other forms of marketing communications, packaging, and distribution.

Both developments would point to a further shift of value across the cocoa and chocolate chain, from upstream and middle stages (production and processing) to downstream “intangible” activities (product development, brand marketing and distribution). This move appears to have further widened the gap between producer and retail prices. Figure 15 shows cocoa producer prices for the four largest African producers as a proportion of the retail price of chocolate in the United Kingdom. It compares averages of the ratio over 9-year and 10-year segments, covering the 1987–2005 period. The figure shows a significant decline in the share of cocoa producers in the retail price of chocolate over the 1996–2005 decade. The trend is general for all the four producing countries. As specified in the note, this analysis must be treated with caution. The point should also be made that these ratios do not represent the part of the chocolate retail price that goes to farmers (chocolate, as discussed in Section II.C, is not made 100 per cent of cocoa).

Figure 15: Cocoa producer prices as a percentage of the retail price for chocolate (UK)



Source: UNCTAD calculations, based on data from ICCO (Producer prices) and ACNielsen (chocolate retail prices).

Note: This analysis must be treated with caution: average retail prices of chocolate were reconstituted using ACNielsen estimates on the retail price of chocolate and the “sweets and chocolates” component of the UK Retail Prices Index, which also encompasses confectionery in its product scope sugar; cocoa producer prices had to be converted into US\$ and then UK£; the analysis yields more mixed results if data of the producers’ share in the retail price are averaged over five-year segments (with a partial reversal of the decline in the producer share of retail prices over the period 2000–2005).

D. Some concluding remarks on concentration, competition and efficiency

The previous analysis has not examined “markets” in a strict competition policy sense (i.e. taking into account product substitutability and the size of geographic markets). Furthermore, insufficient information was available to enable a discussion on the evolution of profit margins in the relevant (product and geographic) markets. However, the data available are still useful in terms of providing a broad picture and sorting some major issues.

First, there seems to be a structural imbalance, upstream in the cocoa chain, between cocoa producers (with a structure of production characterized by the predominance of small-scale producers) and buyers (highly concentrated, with the emergence of oligopsonistic or even – in remote locations – monopsonistic market structures). This asymmetry gives rise to the

potential for the exercise of oligopsonistic or monopsonistic power in cocoa purchasing, both at the farmgate and at the international level. Available evidence shows a decline in nominal terms in producers' share of world cocoa prices across three of the four largest producing countries in Africa. However, the establishment of causal links between this negative evolution of the producers' share and structural changes that have occurred at origin (penetration of foreign capital and concentration) is merely speculative. More rigorous analysis of transmission mechanisms is needed to establish fundamental correlations. Other factual elements – of a more qualitative nature – may also provide some insight into practices in producing countries that may come under the purview of competition law. In Cameroon, a comparative review of quality control certifications and export sales declarations, for example, has revealed some discrepancies that may possibly point to abusive practices in export sales transactions.

Second, at the middle stages, there seems to be some form of balance between “successive oligopolies”. In particular, the market power – on the supply side – of the largest cocoa trading/processing complexes (grinders) appears to be, to some extent, balanced by the “customer power” of downstream brand-name chocolate manufacturers (branders). Branders include large multinational food manufacturers (Nestlé, for example) with professional procurement departments. The strength of such companies is an effective deterrent against any supplier attempting to abuse its market share. Moreover, these customers are generally well informed about the costs of raw materials inputs, overheads and additional costs involved in producing semi-finished cocoa products and *couverture*. Over time, they can verify the margin charged by the *couverture* supplier, increasing supplier accountability and enhancing market efficacy. There is, accordingly, some form of balance between grinders and branders in the cocoa–chocolate chain. Fold (2002) describes this governance structure as “bipolar”, i.e. a chain dominated by two sets of multinational enterprises.⁵⁹

Third, this structural pattern – “bipolar” buyer–drive chain – is further complicated by complex commercial relationships between the brand-name companies and downstream global retailers. In this connection, some evidence points to the fact that, while cocoa and *couverture* prices have moved over time along a flat and even declining trend, the retail prices of chocolate products have generally tended to increase. Declines in *couverture* prices and in the underlying prices of cocoa and cocoa-based ingredients (paste/liquor and butter) were not transmitted or were transmitted imperfectly to domestic consumer prices. To the extent that this situation reflects the growing market power of the big retail chains, it may raise competition law issues in the consuming countries. Another important aspect to be considered is whether the large retailers have been squeezing the margins of the branders over time, and then on to the grinders (for those which are not vertically integrated). One important question is the extent to which this pressure, if any, is passed along the entire supply chain back ultimately to the producer (some evidence points to a widening of the gap between producer and retail prices). More detailed information on marketing costs and margins is needed to enable a discussion on this issue.

Across all these stages (from cocoa sourcing through cocoa trading and processing to the manufacture and supply of consumer chocolate), the relationship between concentration, competition and efficiency is a complex one. In particular, if barriers to entry are low, competition is a process which is not exclusively related to the number of competitors and market concentration should not be automatically considered as equivalent to genuine “market power”. Furthermore, where market concentration decreases competition, it may nonetheless lead to greater efficiency by allowing economies of scale in production, organization or other activities, the benefits of which may be passed on to consumers. All these factors were taken into account, for example, when assessing the impact of the Barry Callebaut merger on the market for industrial chocolate in the United Kingdom (box 6). It is important to note that the competition analysis only took into account the impact of the

⁵⁹ Fold, 2002, supra footnote 33.

merger in the consuming country. Adverse effects that might be felt in cocoa-producing countries were not considered

Box 6: The Barry Callebaut merger

The Barry Callebaut merger investigation in the United Kingdom reflects the complex interplay between concentration, competition and efficiency in competition analysis. It also points to difficulties in appreciating the adverse effects of oligopsony practices outside of the relevant jurisdiction (i.e. where the case is brought).

In 1997, the United Kingdom Monopolies and Mergers Commission examined the merger between Callebaut AG (Callebaut), a Swiss-registered company, and Barry SA (Barry), a French-based group. Callebaut was a major supplier of *couverture* (industrial chocolate) both in Europe as a whole and in the UK. Barry had extensive international interests in the processing of cocoa beans and the supply of *couverture*. Callebaut and Barry each had an operating subsidiary in the UK. The central questions for the inquiry was whether the merged group (Barry Callebaut) would enjoy a position of market power as a result of the merger, and, if so, whether it would exploit that position by increasing prices or in any other way. The relevant market where to assess the impact of the merger was defined as the market for industrial chocolate in the United Kingdom.

Before the merger, Callebaut was by far the largest *couverture* supplier to the UK market, with nearly 50 per cent of the total in 1995, while Barry was the second largest supplier with some 25 per cent. The merger therefore created an enlarged group with an initial share of nearly three-quarters of the market. Callebaut and Barry had been actively in competition with each other and each of them had represented the main source of competition to the other. Given that the merger would eliminate this competition and bring the two leading suppliers together, it was clear that the merger would temporarily reduce the actual strength of competition in the market.

Notwithstanding, the Commission found that the merger did not operate against the public interest. In arriving at this decision, the Commission did not take “seller concentration” as a proxy for market power. Instead, it focused on the way market structures would change as firms compete and on the effects of potential market entry, as well as on any efficiency gains obtained from concentration. The most important factors bearing on its decision were the following:

1. Potential competition from the expansion of existing suppliers and from new entrants

The Commission noted that there was potential competition from existing suppliers, besides the merged group, who had or were installing substantial additional capacity. The question of barriers to entry (capital costs, economies of scale, availability of raw materials and equipment, expertise and reputation, and customer loyalty) was also important to the assessment of whether the merged group would be able to maintain and possibly exploit its position. The Commission arrived at the conclusion that these barriers could be overcome.

2. Customers’ bargaining power

Some of the larger customers of the merged group were large multinational companies which could be expected to enjoy significant bargaining power in their dealings with Barry Callebaut. This was considered to be an effective deterrent against the merged group exploiting its position of market power.

3. Efficiency gains

Barry Callebaut had expressed the view that the merger would bring cost reductions in a number of areas, including cocoa purchasing; elimination of duplication in activities; rationalization of production; and postponement of capital investment. The Commission substantially endorsed this view. It was also inclined to believe that part of the benefits of the cost savings realized would be passed on to consumers.

Source: United Kingdom Monopolies and Mergers Commission, Klaus J Jacobs Holding AG and Société Centrale d’Investissements et Associés. A report on the merger situation (presented to Parliament in June 1997).

V. Policy measures

As discussed, the cocoa–chocolate chain is marked by a high degree of vertical integration and significant concentration at various stages along the supply chain. This structural configuration seems to have resulted in some imbalances in bargaining power between actors at various stages along the chain.

This section illustrates a spectrum of policy options for producing countries in order to address imbalances that may arise from the relative strengths of stakeholders within the cocoa–chocolate chain and to improve the participation of producers in the high-value added part of the chain.

A. Competition law and policy in cocoa-producing countries

This study shows that the fundamental issues concerning competition in the cocoa sector do not depart significantly from challenges encountered by other areas of economic activity. As in many other sectors of the economy, the cocoa market in Africa involves high concentration, oligopoly power and mergers.

The current structure of the cocoa market in Africa, which is composed of both high concentration and vertical integration, has implications for the implementation of competition law and policy in cocoa-producing countries. The adoption and enforcement of a competition law tailored according to the needs and market structure of cocoa-producing countries would be a helpful tool in dealing with possible anti-competitive practices in the first place. Such a policy measure on its own may over time act as a deterrent for companies to avoid anti-competitive practices. However, sufficient experience is required before competition law and policy can achieve this purpose. Two areas of intervention deserve particular attention: anti-competitive practices and abuse of market power; and multinational acquisitions involving the sector.

(a) Anti-competitive practices and abuse of market power

The economic market reforms in Cameroon, as in many other cocoa-producing countries, provided registered traders with the freedom to make purchases where they choose, at a freely negotiated price. Similarly, producers can sell their cocoa directly to any trader of their choice. Ideally, this situation should provide local farmers with the opportunity to choose the traders to whom they wish to sell their products. However, tacit allocation arrangements among traders with regard to cocoa-producing areas may in fact hinder this competition potential. The oligopolistic market structure of the cocoa sector (in Cameroon) facilitates collusive behaviour among the major large firms. Such a market structure has its own problems. As Whish⁶⁰ observed, “the structural conditions of the market in which oligopolists operate are such that they will not compete with one another on price and will have little incentive to compete in other ways; furthermore, they will be able to earn supra-competitive profits without entering into the type of collusive agreement or concerted practice generally prescribed as by competition law”. This type of anti-competitive behaviour makes it difficult for competition authorities to evidence the practice. Every firm is aware and recognizes each other’s “sphere of influence” and agrees not to compete in each other’s dominance area.

However, tacit agreements raise the problem of proof, since it has to be established that some form of collusion has taken place among enterprises, leading to concerted action or parallelism of behaviour on their part. In practice, “establishing whether parallel behaviour is a result of independent business decisions or tacit agreement would probably necessitate an inquiry into the market structure, price differentials in relation to production costs, timing of

⁶⁰ Richard Whish, *Competition Law*, fifth ed. (Oxford University Press, 2005), p. 507.

decisions and other indications of uniformity of enterprises behaviour in a particular product market”.⁶¹

Another form of abuse of market power may occur in the upstream market at the farmers’ level. Local farmers do not have bargaining power vis-à-vis an “oligopsony” of cocoa traders as buyers, who have enough buyer power to set cocoa prices at a level below that would be set under competitive market conditions. Economic analysis has shown that the abusive behaviour of firms with excessive buying power tends to penalize sellers, while the excessive profits made as a result of such behaviour are not passed on to consumers in the downstream market to which these firms sell, regardless of the degree of competition in this market.⁶² Thus, in the context of cocoa producers, the question would rather be how to deal with buyer power of cocoa traders and processors.

Abuse of market power provisions under competition laws may be designed so as to cover the abuse of buyer power. In developed countries, competition laws classify exploitative behaviour, such as the imposition of unfair purchase or sales prices or unfair trading conditions, as an abuse. In economic terms, exploitative behaviour refers to monopoly profits earned at the expense of consumer welfare. The situation in the cocoa sector may require direct regulation of buying practices of large companies. However, competition authorities cannot control or regulate sales or purchase prices in markets. On the other hand, the argument based on buyer power is controversial and there is not much jurisdiction on buyer power. Some countries, such as France and Germany, have provisions in their national competition legislations for the prevention of abuse of buying power based on economic dependency.⁶³ The competition legislation of Portugal involves per se prohibitions against “abusive bargaining practices”, which do not require the lodging of a complaint for enforcement.⁶⁴ On the other hand, the Australian Trade Practices Act 1974⁶⁵ (the Act) provides safeguards provisions added to the legislation following an amendment in 1998. The Act prohibits “unconscionable conduct” in transactions of goods and services valued at less than \$A1 million.⁶⁶ Although the Act does not provide a definition of unconscionable conduct, it lists several factors to be taken into consideration by the Federal Court of Australia, such as the relative strengths of the bargaining positions of the buyer and the small business supplier; the use of any undue influence, pressure or unfair tactics against the small business; whether the small business was able to understand any documents relating to the acquisition of goods or services; and whether the buyer disclosed all terms that could affect the commercial viability of the small business and shown a willingness to negotiate. In case the consumer protection body is different from the competition agency, the former is likely to be best placed to deal with cases of alleged unconscionable conduct.⁶⁷ There have not been any cases in the agricultural sector dealt with under this Section of the Act. Nevertheless, the above-mentioned legislations may well be considered by commodity producer countries in designing competition laws and in developing rules to deal with abusive bargaining practices not only in the cocoa sector but also in other agriculture or commodity sectors.

⁶¹ United Nations Conference on Trade and Development, *Model Law on Competition* (New York and Geneva: United Nations, 2007), at 23.

⁶² Peter C. Carstensen, *Competition, Concentration and Agriculture*. Statement to the Senate Committee on Agriculture, Nutrition, and Forestry, Agriculture Concentration and Competition Hearing, 27 April 2000.

⁶³ Samuel G Asfaha, *Remunerating Commodity Producers in Developing Countries: Regulating Concentration in Commodity Markets* (South Centre, November 2005).

⁶⁴ Dobson Consulting for EC- DG Competition, *Buyer Power and its Impact on Competition in the Food Retail Distribution Sector of the European Union* (Brussels: EC- DG Competition, May 1999).

⁶⁵ Trade Practices Act 1974 Section 51AC on “Unconscionable conduct in business transactions”.

Australian Competition and Consumer Commission.
(http://www.austlii.edu.au/au/legis/cth/consol_act/tpa1974149/s51ac.html).

⁶⁶ UNCTAD, *Manual on the Formulation and Application of Competition Law* (Geneva: UNCTAD, 2004).

⁶⁷ Ibid.

(b) Multinational acquisitions

The vitality of the market may be undermined by tolerance to multinational mergers which have a direct effect on the markets of developing countries. The study reveals high concentration in the cocoa market brought about by mergers and acquisitions. It is evident that allowing such a consolidation process has the potential effect of significantly reducing the number of real competitors in cocoa purchasing. Also, as mentioned earlier, there was a tendency for foreign trading and processing companies to integrate backward into origin countries. The internationalization of activities at different segments of the cocoa value chain within the multinational companies renders tacit or formal collusive behaviour a priori possible.⁶⁸ Carstensen cautions developing countries against this kind of sector dominance as well as cross-linkages among supply and processing markets.⁶⁹ First, such a market structure gives firms an opportunity to engage in anti-competitive practices when dealing with their customers, leading to the restriction of competition and to distortion in the market to benefit the economic interests of a few firms. Second, as discussed above, the oligopolistic market structure of the cocoa sector may facilitate tacit collusive behaviour among large firms, whereby every firm is aware and recognizes each other's "sphere of influence" and agrees not to compete in each other's area of dominance. Third, the dominance of a small number of firms in the market may indirectly "foreclose" the market to potential competitors due to high entry barriers in the market, such as access to credits and economies of scale.

A strictly applied merger control mechanism may help prevent mergers or acquisitions that increase market concentration, reduce potential competition or result in excessive vertical concentration.⁷⁰ The biggest challenge in implementing such a policy is that cocoa markets are characterized by the involvement of large international companies which, albeit based outside the territories of cocoa-producing countries, nevertheless impact negatively on those countries. At this point, extraterritoriality becomes a major concern because these large multinational companies do not fall under the jurisdiction of cocoa-producing countries. A way to address extraterritoriality would be to act at a regional level in dealing with potential anti-competitive practices by or mergers of large multinationals in the cocoa market. Thus, a regional competition law and authority would provide some advantages for cocoa-producing countries, first in coordinating their actions, sharing necessary information as well as knowledge and experience at the regional level. Second, competition law enforcement at the regional level may increase the leverage of cocoa-producing countries in cooperating with competition authorities of the home countries of these large international cocoa traders and processors. Some commentators have gone one step further, putting forward a proposal for a development-oriented international competition authority to control anti-competitive conduct and growth by mergers of large multinationals.⁷¹ This is an issue which was not favoured by some developing countries during the WTO discussions relating to the Singapore issues. Some difficulties may arise when formulating a comprehensive strategy at the international level. As discussed, some important efficiency gains may be obtained, for example, from the integration between cocoa trade and processing. Part of the benefits from the cost savings realized could be passed on to consumers in the consuming countries.

Competition policy alone cannot solve all of the problems of the cocoa sector elaborated in this study and should therefore be complemented by other economic policies designed to improve the situation of local producers and firms in the sector.

⁶⁸ Kaplinsky, above n. 25.

⁶⁹ Carstensen, above n. 62.

⁷⁰ Ibid.

⁷¹ Ajit Singh, *Competition and Competition Policy in Emerging Markets: International and Developmental Dimensions*, G-24 Discussion Paper No. 18 (Geneva: UNCTAD, 2002).

B. Other selected policy responses

Beyond competition law and policy, other policy responses may have an important bearing on some of the issues identified in the previous chapters. The remainder of this section singles out two issues from the previous analysis (the increasing importance of immaterial quality attributes and the structural implications of finance and information), briefly discussing two sets of relevant policy measures.

1. Intellectual property-based strategies and fair trade

As discussed (see section IV.C above), most of the value added in the cocoa–chocolate chain is generated in consuming countries. Furthermore, there is some indication that adding value increasingly relates to intangible – in addition to material – attributes of quality.

Whereas the material attributes of quality refer to specific physical parameters and to the existence of measurement devices, intangible quality attributes make reference to more subjective and extrinsic factors. With reference to the coffee chain, Daviron and Ponte term these intangible attributes of value and market power “symbolic” attributes and “in-person services”.⁷² “Symbolic” attributes of quality are defined as those based on reputation, often embedded in intellectual property (IP) rights (trademarks and geographical indications) and sustainability labels.⁷³ “In-person services” refer to the interpersonal component that comes with the (retail) sale of consumer articles (interpersonal relations – between the consumer and the person delivering the goods, but also between consumers – in bars, restaurant, specialty shops, etc.).

While producers in developing countries do not have any control over the intangible value attributed to “in-person services”, in special circumstances they may reclaim at least part of the extra value associated with the “symbolic” attributes of quality. This may possibly be done by implementing a strategy based on geographical indication (GI) or even trademark protection, in the context of strategic alliances between producer associations (built around appellation areas) and the large international processors/manufacturers.

Cocoa beans have a specific geographical origin and possess qualities or a reputation that are due to that place of origin. GI (place names, or words associated with a place) may be used to identify the origin and quality, reputation or other symbolic attributes of cocoa. To the extent that GI recognition attracts premium prices and this premium is channelled to producers, GI may be instrumental in capturing extra value in origin countries. In practice, the effectiveness of this strategy is a matter of (i) consumer perception, (ii) legal protection and (iii) price transmission.

First, GIs are essentially marketing tools (they do not trigger royalty payment, as, for example, trademarks. They function if they are understood by consumers to denote the origin and the quality of products, and to the extent that their valuable reputation attracts a premium price. In practice, since it is extremely difficult and costly to penetrate global consumer consciousness, it is difficult for a GI strategy to work in the absence of a strategic alliance between producer associations (organized around appellation areas) and the large chocolate companies domiciled in the consumer countries. However, questions arise as to the commercial interest that the latter may have in pursuing this broad marketing strategy. In the consumer perception, the quality level for chocolate appears to be currently associated more with the manufacturer country than the producer country.

⁷² Benoit Daviron and Stefano Ponte, *The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise of Development* (London and New York: Zed Books, 2005)

⁷³ Ibid. at 37: “Trademarks enable the ‘consumption of an enterprise’. Geographical indications facilitate the ‘consumption of a place’. Sustainability labels make it possible to ‘consume ethics’.”

Second, GIs need to be legally protected in order to avoid misuse (false use of geographical indications by unauthorized parties).⁷⁴ Given the “territorial” nature of IP protection, both the country of origin and the country of protection (i.e. any third country where recognition of a geographical indication is sought) are concerned with the determination of geographical indications for purposes of protection. Several international situations of conflict can arise⁷⁵ which call for harmonization of national law as well as the establishment of international registration systems. At the implementation (administrative) level in origin countries, a compulsory system of certifying the origin of exported cocoa should be in place to ensure a genuine supply of cocoa under GI with no blending authorized. This would require involvement of competent sectoral authorities, such as the National Cocoa and Coffee Board in Cameroon, which would also assume the role of complainant whenever cases of unauthorized use of the protected term were brought to their notice.

Third, producers need to control the extra value unlocked by GI recognition. Given the cleavage between cocoa production and commercialization, this value may be appropriated by downstream actors, from intermediaries through exporters to international traders, with no significant transmission back to producers. Again, and in order to facilitate this transmission, GI recognition can be devised as the central element of a strategic partnership between producers’ organizations and international players (cocoa traders and processors, or chocolate manufacturers).

Involvement of external actors is particularly prominent where trademark protection – rather than GI recognition – is sought. GIs and trademarks are inherently different. Whereas GIs may be used by all producers who make their products in the place designated by a GI and whose products share typical qualities, a trademark gives its owner the right to exclude all others from using it and to license its use in return for royalty payments. Trademark protection is complex and costly, due to the need to register separately with each national or regional office where protection is sought.⁷⁶ Moreover, whether a sign functions as a trademark is a matter of consumer perception, and high advertising budgets are necessary for promoting brand recognition. Industrial processors and branded consumer goods companies domiciled in the consuming countries are better positioned than other stakeholders within the chain to effectively pursue a trademark-based strategy. In cocoa, as in coffee, some registered trademarks consist of names, figurative elements, colours as well as combination of such signs that combine the characteristic attributes of the product with crafts/music/other expressions of folklore from the country of origin. The idea is to operationalize IP-related

⁷⁴ Geographical indications are protected in accordance with national laws and under a wide range of concepts (laws against unfair competition, consumer protection laws, laws for the protection of certification marks or special laws for the protection of geographical indications or appellations of origin). At the international level, GI are protected under Articles 22 to 24 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and by a number of treaties administered by the World Intellectual Property Organization (WIPO) (the Paris Convention for the Protection of Industrial Property of 1883 and the Lisbon Agreement for the Protection of Appellations of Origin and Their International Registration).

⁷⁵ By virtue of this territorial principle, several international situations of conflict can arise. For example, a geographical indication in one country may be considered in a third country as a generic expression for that product (in some jurisdictions, for example, *Champagne* and *Dijon* are considered generic terms for sparkling wine and mustard, respectively). or may have acquired IP protection under that country’s trademark law (for example, *Budweiser* and *Bud*, claimed as geographical indications for beer from the Czech Republic, are also registered trademarks used to identify a specific commercial brand of beer).

⁷⁶ Unless the applicant has a link (through nationality, domicile or establishment) with a country party to the Madrid Union (the Madrid Agreement Concerning the International Registration of Marks and the Madrid Protocol). In this case, the applicant can, on the basis of a registration or application with the trademark office of that country, obtain an international registration having effect in some or all of the other countries of the Madrid Union.

strategies aimed at sharing with local communities the benefits that currently accrue to multinational enterprises from the commercial use of this intangible cultural heritage.

To sum up, the GI/trademark approach is a complex strategy and carries risks – including but not limited to those that are highlighted above. Furthermore, these strategies raise the delicate issue of their interference with “fair trade” trademarks. The above described IP-related initiatives involve registration of geographical indicators or trademarks, and some form of branded recognition. Given their aim to empower local producers, they may be (mis)understood by the public as fair trade brands. The misleading potential lies with the fact that the above IP strategies do not necessarily imply compliance with the stringent requirements involved in fair trade certification, and are less costly.⁷⁷ The fair-trade approach presents itself as an alternative or complementary strategy. The same holds true for the organic movement. At present, cocoa sold with the Fair Trade label still captures a very low share of the cocoa market (0.1 per cent, according to ICCO). The organic cocoa market also represents a small share of the total cocoa market, estimated at less than 0.5 per cent of total production (ICCO). Scaling up – without renegeing on principles – remains a major challenge.

2. Supply chain elements for overcoming market failures

As discussed, access to finance, as well as market information and transparency, has had important structural implications in cocoa. The lack of efficient access to finance was identified as one of the factors underlying the concentration process at the export level within origin countries (section III. A.2 above). Transparency of pricing was identified as one of the factors underlying the effective functioning of the *couverture* market (section IV.B.2 above). Also, in a negotiating context characterized by imperfect and asymmetric information, market knowledge often implies market power, and asymmetry in accessing market information may become a key factor behind inequitable income distribution.

Measures aimed at redressing asymmetry of information, alongside structured finance tools, provide practical ways to empower producers by addressing market imperfections/failures. Moreover, well-organized structures can help farmers gain power in the marketplace, and cooperatives should play a major part in this connection. The challenge here is to create a virtuous circle where interventions aimed at improving information, promoting group marketing structures and improving access to commodity finance feed back into each other. More ambitiously, new models of organized supply chains should holistically acknowledge – and try to redress – all the major constraints that work against the effective and sustainable integration of small producers in commodity chains.

Past work by UNCTAD has identified four major elements of an integrated supply chain, namely information, logistics, financing and standards. Lack of market information and transparency has had an important negative impact on small producers’ ability to reach the global market. Poor logistic infrastructures, including as regards traceability, also restrict the capacity of producers to benefit from international trade. Access to credit is one of the main bottlenecks for farming activities, especially in developing countries, where traditional credits are almost non-existent. Non-compliance with private standards, although they are voluntary, often excludes producers from export markets. As Governments have withdrawn from the sector, attention has shifted to new, market-based models that could help overcome these fundamental constraints for small producers and promote farmers’ integration into supply chains in a sustainable manner. Various models (including contract farming, supermarket-driven supply chains, supply chains facilitated by trade and development financial

⁷⁷ Although the most essential characteristic of fair trade is that producer organizations receive a higher price for their cocoa beans, “fair trade” is not just about higher returns to farmers. Under most fair trade schemes, the approved producer organizations must comply with a number of social and environmental requirements, and part of the fair trade premium is meant to cover these additional costs. Moreover, the fair trade price often represents the price received by the cooperatives, and a proportion of the fair trade premium may be pooled in a social fund for the benefit of the community rather than passed on directly to the farmers. These aspects are not captured by the above-mentioned strategies.

institutions, and non-profit facilitation schemes) have been, in specific factual circumstances, relatively successful in integrating small producers into new supply chains.⁷⁸ There are, however, a number of challenges and constraints, such as the issue of how to scale up initiatives – possibly a matter for government policy.

⁷⁸ See Document TD/B/COM.1/EM.32/2 of 1 November 2006 (*Enabling small commodity producers and processors of developing countries to reach global markets*, background note by the UNCTAD secretariat), accessible at http://www.unctad.org/en/docs/c1em32d1_en.pdf - accessed on 8 November 2007). Refer also to the Report of the meeting (Document TD/B/COM.1/EM.32/3 of 19 January 2007, http://www.unctad.org/en/docs/c1em32d3_en.pdf - accessed on 8 November 2007).

References

- Asfaha, Samuel G. "Remunerating Commodity Producers in Developing Countries: Regulating Concentration in Commodity Markets." In *Research Papers*: South Centre, November 2005.
- Carstensen, Peter C. "Competition, Concentration and Agriculture." Statement to the Senate Committee on Agriculture, Nutrition, and Forestry, Agriculture Concentration and Competition Hearing, 27 April 2000.
- Common Fund for Commodities. "Possibilities for Price Risk Management by Cocoa Farmers in Cameroon, Côte D'ivoire and Nigeria." Paper presented at the Annual Meeting of the ITFC, Abidjan, Ivory Coast, 26-28 June 2002.
- Dobson Consulting. "Buyer Power and Its Impact on Competition in the Food Retail Distribution Sector of the European Union." Brussels: EC- DG Competition, May 1999.
- Daviron, Benoit, and Stefano Ponte. *The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise of Development*. London and New York: Zed Books, 2005.
- Dorin, Bruno. "From Ivorian Cocoa Bean to French Dark Chocolate Tablet. Price Transmission, Value Sharing and North/South Competition Policy ". Montpellier: Centre de Coopération Internationale en Recherche Agronomique pour le Développement, 2003.
- Fold, Niels. "Lead Firms and Competition in 'Bi-Polar' Commodity Chains: Grinders and Branders in the Global Cocoa-Chocolate Industry." *Journal of Agrarian Change* 2, no. 2 (2002): 228-47.
- . "Restructuring of the European Chocolate Industry and Its Impact on Cocoa Production in West Africa." *Journal of Economic Geography* 1, no. 3 (2001): 405-20.
- Gilbert, Christopher L. "Value Chain Analysis and Market Power in Commodity Processing with Application to the Cocoa and Coffee Sectors." In *Discussion Papers*: Università degli Studi di Trento, 2006.
- Gilbert, Christopher L, and Eric Tollens. "Does Market Liberalization Jeopardize Export Quality? Cameroonian Cocoa, 1995-2000." In *CEPR Discussion Papers*: Centre for Economic Policy Research, 2002.
- Gilbert, Christopher L, and Panos Varengis. "Globalization and International Commodity Trade with Specific Reference to the West African Cocoa Producers." In *NBER Working Papers*: National Bureau of Economic Research, 2003.
- Kaplinsky, Raphael. "Competition Policy and the Global Coffee and Cocoa Value Chains": United Nations Conference for Trade and Development, 2004.
- International Cocoa Organization. "Recent Evolution of the Share of the Cocoa Cost Component in the Retail Price of Chocolate in the United Kingdom." Paper presented at the Seventh Meeting of the Advisory Group on the World Cocoa Economy, Accra, Ghana 18-22 June 1990.
- . ICCO Global Estimates, 1999. <http://www.icco.org/faq3.aspx?id=dlf1467>. (accessed 7 November, 2007).
- . *Annual Report 2005/2006*. London: ICCO, 2007.
- International Trade Centre UNCTAD/WTO. *Cocoa: A Guide to Trade Practices*. Geneva: ITC, 2001.
- United Nations Conference on Trade and Development. *Manual on the Formulation and Application of Competition Law*. Geneva: UNCTAD, 2004.
- . "The Impact of Changing Supply-and-Demand Market Structures on Commodity Prices and Exports of Major Interest to Developing Countries." *Document TD/B/COM.1/EM.10/2*. UNCTAD, 14 May 1999.
- . "The World Commodity Economy: Recent Evolution, Financial Crises, and Changing Market Structures." *Document TD/B/COM.1/27*: UNCTAD, 16 July 1999.

- Singh, Ajit. "Competition and Competition Policy in Emerging Markets: International and Developmental Dimensions." In *G-24 Discussion Paper Series: United Nations Conference on Trade and Development*, 2002.
- Shepherd, Andrew, and Stefano Farolfi. *Export Crop Liberalization in Africa*. Rome: FAO, 1999.
- ul Haque, Irfan. "Commodities under Neoliberalism: The Case of Cocoa." In *G-24 Discussion Paper Series: United Nations Conference on Trade and Development*, 2004.
- UK Competition Commission. "Supermarkets: A Report on the Supply of Groceries from Multiple Stores in the United Kingdom." 2000.
- UK Monopolies and Mergers Commission. "Klaus J Jacobs Holding AG and Société Centrale d'Investissements et Associés. A Report on the Merger Situation." 1997.
- Whish, Richard. *Competition Law* (Fifth Edition). Oxford University Press, 2005.

Appendix 1: Cargill Inc.

Background note

Cargill is a privately owned company headquartered in Minneapolis, United States. It remains a family-owned company and is not listed on any of the world's stock exchanges.

Founded in 1865 as a grain warehousing and merchandising business, Cargill has grown into a diversified conglomerate. Its operations include procurement and processing of grain, oilseeds and other agricultural commodities; provision of food ingredients and value-added services for food manufacturers; petroleum trading; agricultural services (including animal feed and fertilizer production); and risk management and financial products and services.

Selected deals

Cargill first entered the cocoa business in 1980, with the inauguration of a new cocoa pressing plant (Cargill Cacao Ltda) in Ilheus, Brazil. The company has since achieved a significant degree of vertical integration in the market, with interests extending from trade in cocoa beans in the producer countries through production and trade of semi-finished cocoa products (in both producer and consumer countries) to the manufacture and supply of industrial chocolate (in the consumer countries).

In producing countries (West and Central Africa), Cargill operates in two sectors of the cocoa industry: cocoa trading (local purchasing and export trade) and primary cocoa processing. In Côte d'Ivoire, as of March 2007, Cargill was reported to operate two cocoa bean buying stations in Daloa and Gagnoa, two conditioning plants in San Pedro and Abidjan, and a cocoa processing plant (Micao SA, inaugurated in 2000) in Abidjan. Cargill West Africa has been present on the export market since liberalization and is a major cocoa buyer in the country. In June 2006, a long-term supply agreement was signed between Cargill and the Ghana Cocoa Board paving the way for a state-of-the-art cocoa processing plant (production of cocoa liquor, butter and powder) to be built in the port of Tema, near the capital Accra. In Cameroon and Nigeria, the company operates procurement and handling facilities (local purchasing and export trade). In Latin America, Cargill has advanced further along the supply chain and has started producing industrial chocolate for the food industry. Cargill's compound and chocolate manufacturing plant in Porto Ferreira – a strategic location close to major customers and in a sugar-producing region – started production in November 2007 to supply the domestic market.

In consuming countries, Cargill has significantly expanded its cocoa processing activities since 1987. With the 1987 acquisition of General Cocoa (the Netherlands) and its controlled companies, including Gerkens Cacao Industrie B.V. (cocoa butter, powder and liquor) and Fennema B.V. (compound coatings), the company has become a leading cocoa processor and supplier to the European market. The 2004 acquisition of the Nestlé cocoa processing facilities in York (United Kingdom) and Hamburg (Germany) further entrenched this position. For Nestlé, the cocoa divestment reflected an ongoing move by the firm to shift away from transforming raw materials itself to outsourcing its ingredient requirements to suppliers. Cargill has also achieved deep penetration of the industrial chocolate market in recent years. The acquisition of OCG Cacao SA in 2003 was Cargill's first significant investment in chocolate manufacturing in Europe (where it already was a major cocoa processor). In 2005, the company bolstered its European chocolate position by acquiring Schierstedter Schokoladefabrik GmbH & Co (an industrial chocolate facility in Klein Schierstedt, Germany). While a relative newcomer to the European chocolate market, Cargill has been producing industrial and gourmet chocolate for several years in the United States and Canada, under its Wilbur brand (since 1992 – acquisition of Wilbur Chocolate Co.) and, more recently, Peters' brand (since 2002 – acquisition of Peter's Chocolate).

Appendix 2: Archer Daniels Midland Company

Background note

Archer Daniels Midland Company (ADM) was incorporated in Delaware, the United States, in 1923, as a successor to the Daniels Linseed Co. founded in 1902. Archer Daniels Midland Company Common Stock is listed and traded on the New York Stock Exchange (NYSE: ADM), Chicago Stock Exchange, Frankfurt Stock Exchange and the Swiss Exchange.

ADM is primarily engaged in procuring, transporting, storing, processing and merchandizing agricultural commodities and products. The company's operations are classified into three reportable business segments: Oilseeds Processing (into vegetable oils and meals principally for the food and feed industries), Corn Processing (production of sweeteners, starches, dextrose, and syrups for the food and beverage industry), and Agricultural Services (the company's grain elevator and transportation network). Remaining operations (including activities related to the production of cocoa products and chocolate) are aggregated and classified as "Other".

Selected deals

ADM first entered the cocoa and chocolate industry in 1997 (acquisition of the W.R. Grace & Company's cocoa business). Since then, the company has developed interests spanning from trade in cocoa beans in the producer countries through production and trade of semi-finished cocoa products (in both producer and consumer countries) to the manufacture and supply of industrial chocolate (in the consumer countries), thus achieving a significant degree of vertical integration in the market.

Consumer countries

In 1997, ADM completed the acquisition of Grace Cocoa (W. R. Grace & Company's cocoa business), a leading processor of cocoa beans – supplier of *Ambrosia*, *De Zaan* and *Merckens* brands of products. The addition of cocoa gave ADM a broader product line and provided diversification beyond corn, wheat and soybeans. Subsequently, on 30 September 1998, the company completed its acquisition of the cocoa processing facilities of ED&F Man Group plc, after which EDM refocused its cocoa business on merchandizing activities.

With the 2006 acquisition of Classic Couverture Ltd, a UK-based manufacturer of industrial chocolate, from Edward Billington and Son Ltd, ADM expanded into European industrial chocolate manufacturing. In addition the company announced that it would build a new cocoa processing facility (operational by mid-2007) in the mid-Atlantic region of the United States to meet growing demand for premium cocoa ingredients.

Origin countries

Effective in 2001, ADM Cocoa acquired part of the cocoa assets of Groupe SIFCA, one of the major economic actors in Côte d'Ivoire, controlled by local interests. ADM Cocoa SIFCA, a new company owned 80 per cent by ADM and 20 per cent by SIFCA, took on most of SIFCA's cocoa purchasing and conditioning assets. The acquisition included three cocoa conditioning and storage plants (including a large pre-export cocoa bean conditioning plant and warehouse in Anyma, near Abidjan), and the Unicao cocoa processing facility in San Pedro.

In February 2005, ADM announced that it would expand cocoa operations in Brazil to match expansion of current product lines. The company announced that plant processes at its cocoa processing facility in Ilheus (Bahia) would be upgraded to meet "new offerings". This facility produced cocoa powder, butter and cake product lines for Brazilian and international markets.

In October 2006, ADM and Olam International Ltd, a Singapore-based cocoa bean supplier, concluded a joint acquisition – 50 per cent each – of Usicam (previously owned by SAGA S.A., a Groupe Bolloré company) in Cameroon. Usicam is one of the largest plants for cocoa

drying, cleaning, warehousing and other related activities in Cameroon. Usicam had in turn acquired the cocoa processing assets of SDV.

In June 2007, ADM announced that it would build a state-of-the-art cocoa processing facility in Kumasi, Ghana.

Appendix 3: Barry Callebaut AG

Background note

The Barry Callebaut Group was created out of the 1996 merger of Callebaut, a leading industrial chocolate group, and Barry, with complementary sourcing activities and cocoa-processing operations. Barry Callebaut AG, the Group's holding company, was incorporated under Swiss law, as it has its head office in Zurich. Barry Callebaut AG has been listed on the SWX Swiss Exchange (BARN, ISIN Number: CH0009002962) since 1998.

Barry Callebaut AG is controlled (50.5 per cent ownership as of 30 September 2006) by Jacobs Holding AG, a holding company domiciled in Zurich, with interests in banking and finance (Grupo Financiero Continental SA), human resource and staffing services (Adecco SA), sports goods (Infront Sports & Media AG), chocolate (Barry Callebaut AG), and agribusiness. One of its declared principles is not to invest in companies that specialize in alcohol, drugs, or weapons.

Since the merger, Barry Callebaut AG has implemented a strategy geared to expansion into more value-added products. This began with the creation of a strong gourmet product division (1999 acquisition of Carma-Pfister AG; 2003 acquisition of Luijckx Beheer BV; and the acquisition of AM Foods in 2004). The main entry into consumer products started in 2002, when Barry Callebaut AG acquired Stollwerck AG, followed by the purchase of Brach's Confections in 2003 (subsequently divested). The outsourcing by brand companies of their production requirements has offered Barry Callebaut new opportunities to move downstream.

The Barry Callebaut Group is fully vertically integrated along the entire value chain, spanning all segments of the cocoa and chocolate industry: from the procurement of cocoa beans through cocoa processing to the making of chocolate.

The Group activities are organized in two business segments: Industrial Business and Food Service/Retail Business. The Industrial Business segment consists of two business units: Sourcing & Cocoa (procurement of raw material inputs and cocoa processing, mainly for the company's own use); and Food Manufacturers (supply of chocolate products, ready-to-use fillings, coatings and customized services for the food manufacturing industry). The Food Service/Retail business segment consists of the business units Gourmet & Specialties and Consumer Products. The Gourmet & Specialties unit (supply of premium chocolate products and of convenient, ready-to-use and ready-to-sell products) caters to professional users such as chocolatiers, pastry chefs, bakeries, hotels and caterers, and includes the vending mix business (supply of blends for beverage vending machines). The Consumer Products unit includes the Company's customer label business (retail brands Sarotti in Germany, Jacques in Belgium and Alprose in Switzerland) and its co-manufacturing businesses with branded consumer goods companies (see box 7).

The principal brands under which the company operates are Barry Callebaut, Callebaut, Cacao Barry, Van Leer, Carma and Van Houten for chocolate products; Barry Callebaut, Bendsorp, Van Houten and Chadler for cocoa powder; Bendsorp, Van Houten, Caprimo and Ögonblinck for vending mixes; and Sarotti, Alpia, Sprengel, Jacques, Callebaut, and Alprose for consumer products.

Selected deals

(a) Callebaut

Callebaut was founded in Belgium in the 19th century. Previously, it was the only major *couverture* manufacturer with no involvement in the trading of cocoa beans and only a modest involvement in the production of cocoa butter and powder.

In 1981, Callebaut was acquired by the Swiss company Interfood, the holding company of the Tobler-Suchard group.

In 1982, Interfood merged with Jacobs Kaffee to form the Jacobs Suchard group. This new group acquired further chocolate businesses (C J van Houten & Zoon Holding AG (H&Z), which manufactured van Houten-brand confectionery, in 1986; Cote D'Or, the manufacturers of the Cote D'Or brand, in 1987; in 1990, the UK company S & A Lesme, which had integrated Lesme Limited, Petpro Limited, the Caxton Chocolate Company and Stewart & Arnold Limited).

In 1990, US-based Philip Morris Companies Inc (Philip Morris) acquired Jacobs Suchard AG, the parent company of the Jacobs Suchard group, but immediately sold the industrial chocolate businesses, including Callebaut, back to Mr Klaus Jacobs. Callebaut was then transferred to KJJH, a new holding company wholly owned by Mr Jacobs. KJJH reorganized its structure around two (wholly owned) holdings subsidiaries: van Houten (consumer chocolate and confectionery product business of the former H&Z); and Callebaut AG (industrial chocolate business).

(b) Barry

Barry was founded in France in 1842. It produced and distributed intermediate cocoa-based products (cocoa liquor, butter and powder), *couverture* and confectionery products. It exhibited a high degree of vertical integration, with procurement facilities in producing countries.

Barry opened its first processing plants in Cameroon and the Ivory Coast, respectively, in 1952 and 1961. In 1972, it opened a second French site at Louviers for cocoa liquor, cocoa butter and cocoa powder. Between 1974 and 1977, it acquired small industrial units in Italy (Sicao SpA), Belgium (Cacao Goemaere NV) and the USA.

In November 1986, Barry acquired Bensdorp BV, a cocoa presser (cocoa butter and powder) in the Netherlands, from Unilever.

Between 1992 and 1995, the Barry group significantly increased its bean-grinding capacity in Africa and continental Europe. Over the same period, it developed its *couverture* production (construction of Barry UK's *couverture*, opened in Chester in 1992; increase in *couverture* production capacities in the USA; investments in the Belgian *couverture* plant at Goemaere; and construction of a *couverture* plant at Lodz, Poland, in 1995).

In November 1994, Barry acquired 33.3 per cent of the Spanish cocoa processing company Natra Cacao SL.

In December 1995, Barry acquired full control of its main Côte d'Ivoire subsidiaries (Saco and Chocodi) after the repurchase of the minority interests owned by the State. In July 1996, Saco and Chocodi were merged under the name Saco.

(c) Barry Callebaut

Note	Announced	Effective	TypeName	Target	Sector
1	Jul. 1998	Jul. 1998	M&A	Van Leer Chocolate Corp	IC
2	Jan. 1999	Jan. 1999	M&A	Carma-Pfister AG	GS
3	Feb 1999	Jul. 1999	M&A	Chadler Industrial da Bahia SA	CP
4	Oct. 1999	Mar. 1999	M&A	Aztec S.r.l. (Nestlé)	IC
5		Jan. 2000	M&A	Saco SA (remaining 51 per cent)	CP
6		Dec. 2001	M&A	Van Houten Africa Holding SA	
7		Jan 2000	M&A	Omnigest	
8	Apr. 2002	Aug. 2002	M&A	Stollwerck A.G.	CC
9	Feb. 2003		M&A	Luijckx Beheer B.V. (Graverboom B.V.)	GS
10	Sep. 2003	Sep. 2003	M&A	Brach's Confections Holding, Inc. (KJ Jacobs A.G.)	CC
11		Jul. 2004	M&A	AM Foods K/S (Arla Foods)	GS
12	Feb. 2007	Feb. 2007	M&A; C	Nestlé (assets and long-term supply)	IC
13	Apr. 2007		M&A; C	The Hershey Company	IC
14	Jun. 2007		C	Cadbury Schweppes plc	IC
15	Sep. 2007		M&A; C	Morinaga & Co., Ltd.	IC
16	Oct. 2007	Oct. 2007	M&A; C	Food Processing International Inc	CP

1. In July 1998, Barry Callebaut announced the closing of its purchase of the assets of US-based Van Leer Chocolate Corporation (production of premium chocolate, chocolate coatings, cocoa powders, panned items and inclusions for the dairy industry).
2. In January 1999, Barry Callebaut acquired Carma-Pfister AG, a Swiss leader in specialty chocolate (GS).
3. In 1999, Barry Callebaut AG acquired Chadler Industrial da Bahia SA, the third largest cocoa processor in Brazil, along with its 100 per cent US subsidiary Chadler (USA) Inc. The acquisition of Chadler Brazil added to Barry Callebaut's strong sourcing position in Côte d'Ivoire and Cameroon.
4. In 1999, Barry Callebaut acquired 100 per cent of the chocolate company Aztec S.r.l., from Nestlé Italiana Spa, strengthening its position in the industrial specialty chocolate in Italy.
5. In January 2000, Barry Callebaut acquired from Jacobs AG the remaining 51 per cent in Société Africaine de Cacao Saco SA
6. In March 2000, Barry Callebaut acquired from Jacobs AG 100 per cent of all the Van Houten companies operating in Africa, Asia and Europe.
7. In February 2000 retroactively to 1 January 2000, Barry Callebaut acquired from Jacobs AG 100 per cent of the company Omnigest.
8. Effective 5 August 2002, Barry Callebaut acquired, from Imhoff Industrie Holding GmbH and the charitable Imhoff Foundation, 96.1 per cent of the shares of Stollwerck AG. Stollwerck was the leading manufacturer of consumer chocolate in Germany – one of the largest consumer markets – with a distinctive brand portfolio (Alpia, Alprose, Sarotti and Gubor).
9. In February 2003, Barry Callebaut announced the signing of an agreement with Graverboom BV to acquire the Dutch-Belgian chocolate company Luijckx Beheer BV (high-quality chocolate products and decorations). On 3 March 2003, the Group acquired the entire issued share capital of Graverboom, a leading Dutch manufacturer of specialty chocolate products. Through this acquisition, the Group has acquired gourmet and specialty operations primarily in Western Europe, including the Netherlands, France and Belgium.
10. On 17 September 2003, the Group acquired US-based Brach's Confections Holding, Inc. The acquisition of Brach's gave Barry Callebaut a significant presence in the world's largest confectionery market, the United States, and access to the world's largest retailers, major supermarkets and other distribution channels. The business was discontinued in 2007.
11. On 2 September 2004, the Group acquired from Arla Foods amba of Denmark the Vending Mix business of Arla's subsidiary AM Foods K/S, Denmark. AM Foods produces and sells chocolate and cappuccino vending mix products primarily to the food service sector in key European markets as well as Scandinavia and Eastern Europe. The business was integrated into the Group's Gourmet & Specialties business unit.
12. On 15 February 2007, Barry Callebaut announced its intention to acquire from Nestlé the cocoa liquor and liquid chocolate production facility at the chocolate factory in San Sisto/Italy as well as a chocolate factory in Dijon/France (overall, approx. 100,000 metric tonnes production capacity). At the same time, Nestlé would enter into a long-term agreement with Barry Callebaut for the supply of 43,000 tonnes p.a. of liquid chocolate and the production of some Nestlé consumer products. The project also incorporates a commitment to supply Nestlé in Russia with liquid chocolate. Barry Callebaut would be able to use the existing capacity at the acquired sites and intends to install additional capacity of 25,000 tonnes.
13. On 26 April 2007, Barry Callebaut and The Hershey Company announced a strategic supply and innovation agreement (Barry Callebaut to supply a minimum of 80,000 tons per year of chocolate and finished products to Hershey under a long-term global agreement. Barry Callebaut will construct and operate a facility to provide chocolate for Hershey's new plant in Monterrey, Mexico. Barry Callebaut will also lease a portion of Hershey's Robinson, Ill., plant, and operate chocolate-making equipment at the facility).
14. In June 2007, Barry Callebaut announced the signing of an agreement with Cadbury Schweppes plc to double its supply volumes of cocoa liquor and liquid chocolate to around 30,000 metric tonnes a year. Barry Callebaut would supply approximately an additional 14,000 tonnes a year of liquid chocolate and cocoa liquor to Cadbury Schweppes' production facilities in Poland.
15. On 26 September 2007, Barry Callebaut and Morinaga, one of Japan's largest food companies with numerous established brands, announced their intention to enter into a strategic alliance (sale

of cocoa and chocolate production equipment by Morinaga to Barry Callebaut; 10-year supply agreement for 9,000 metric tonnes a year – doubling Barry Callebaut’s sales volumes in Japan).

16. October 2007. Barry Callebaut acquired 100 per cent of Food Processing International, Inc. (FPI), a US-based cocoa processing company. FPI owns a factory with a capacity for cocoa liquor production of 25,000 metric tons per year.

The principal subsidiaries of Barry Callebaut in Africa (as per 31 August 2005) were the following:

Country	Subsidiary	Ownership (%)	Currency	Capital
Cameroon	Société Industrielle Camerounaise des Cacaos SA	99.95	CFA	5,010,000,000
	Chocolaterie Confiserie Camerounaise/Chococam SA	74.39	CFA	4,000,000,000
	SEC Cacaos SA	100	CFA	10,000,000
Ghana*	Barry Callebaut Ghana Ltd.	100	USD	9,204,219
Côte d’Ivoire**	Société Africaine de Cacao SACO SA	100	CFA	4,007,500,000
	Barry Callebaut Négoce SA	100	CFA	3,700,000,000
	SN Chocodi SA	100	CFA	500,000,000
	Alliance Cacao SA	51.5	CFA	340,000,000
Nigeria	Barry Callebaut Nigeria Ltd.	100	NGN	10,000,000

*In 2001, Barry-Callebaut opened a processing plant in the Free Zone Enclave in Tema, Accra, Ghana, to process locally bought cocoa beans into nibs and liquor; In February 2007, a second cocoa processing line was inaugurated at the Tema factory, doubling the annual bean processing capacity from 30,000 tonnes to 60,000 tonnes.

**In Côte d’Ivoire, Barry Callebaut has four factories in Abidjan and in San Pedro. In July 2007, it announced that it would increase its cocoa processing operations by more than 50 percent in Côte d’Ivoire over the following two years.

Appendix 4: “Origin grinding” (Barry Callebaut, Cargill and ADM)

Ghana

In June 2007, ADM announced that it would build a state-of-the-art cocoa processing facility in Kumasi, Ghana.

Cargill had also announced (June 2006) that it would start local processing in Ghana from a factory to be built in the port of Tema, near the capital Accra. The factory – expected to be operational by summer 2008 – would initially process 65,000 metric tonnes of cocoa, with the potential to expand to 120,000 metric tonnes.

Three other companies already process cocoa in Ghana:

1. In 2001, Barry-Callebaut opened a processing plant in the Free Zone Enclave in Tema, Accra, to process locally bought cocoa beans into nibs and liquor. In February 2007, a second cocoa-processing line was inaugurated at the Tema factory, doubling the annual bean-processing capacity from 30,000 tonnes to 60,000 tonnes.
2. West African Mills Company Ltd., a joint venture between German firm Hamester (60 percent) and cocoa industry regulator Cocobod, has a plant in the southwestern port town of Takoradi with a processing capacity of 75,000 tonnes.
3. State-owned Cocoa Processing Company (CPC) Ltd controls an additional installed processing capacity of 65,000 tonnes.

Côte d’Ivoire

In 2000 (effective 2001), ADM Cocoa SIFCA, a new company owned 80 per cent by ADM and 20 per cent by SIFCA, took on most of SIFCA’s cocoa purchasing and conditioning assets. The acquisition included three cocoa conditioning and storage plants (including a large pre-export cocoa bean conditioning plant and warehouse in Anyama, near Abidjan), and the Unicao cocoa processing facility in San Pedro.

Cargill began operations in Côte d’Ivoire in 1997. It currently operates a cocoa processing plant in Abidjan (in addition to two cocoa bean buying stations in Daloa and Gagnoa and two conditioning plants in San Pedro and Abidjan).

Other foreign companies operate in cocoa processing in the country. Barry Callebaut has four factories in Abidjan and in San Pedro. In July 2007, the Company announced that it planned to increase its cocoa processing operations in Côte d’Ivoire by more than 50 per cent over the following two years.

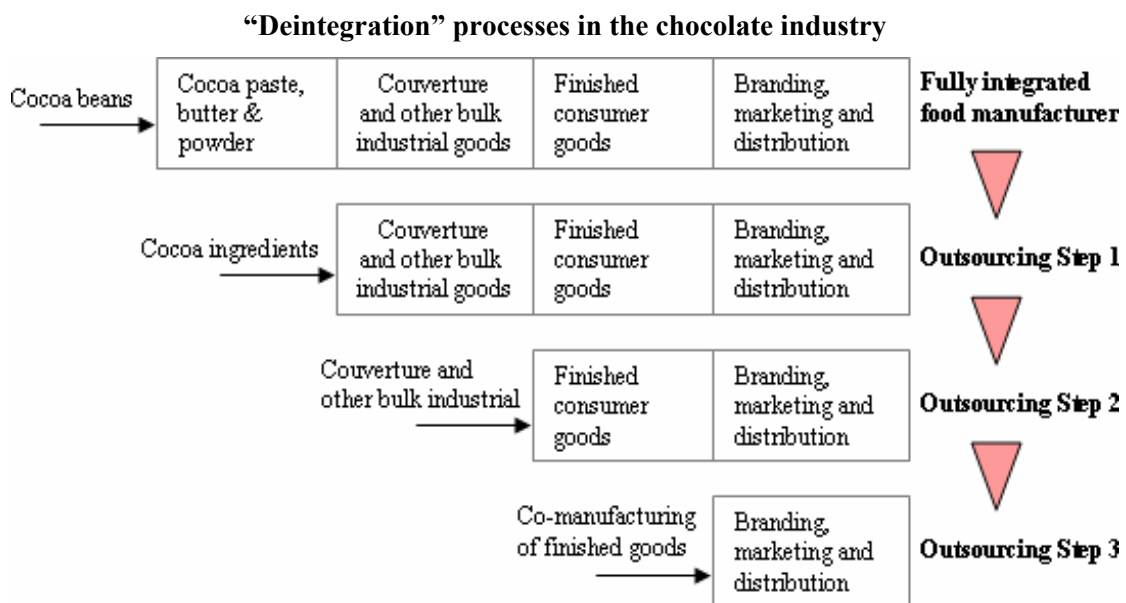
Cameroon

The country’s processor, SIC Cacaos (Société Industrielle Camerounaise des Cacaos SA), is owned by Barry Callebaut (99.95 per cent ownership as per 31 August 2006)

In October 2006, ADM and Olam International Ltd (a Singapore-based cocoa bean supplier) concluded a joint acquisition – 50 per cent each – of Usicam, one of the largest factories for cocoa drying, cleaning, warehousing and other related activities in Cameroon, previously owned by SAGA S.A., a Groupe Bolloré company. In turn, Usicam acquired the cocoa-processing assets of SDV in Cameroon.

Appendix 5: Outsourcing trends in the chocolate industry

The trend towards branded consumer companies outsourcing their chocolate ingredient needs confirms a development in the processing segment of the chocolate industry that has evolved over a longer period of time. This development is shown in diagrammatic form in the figure below. As widely discussed in the text, the large consumer chocolate manufacturers (the branders) used to be vertically integrated. Their involvement in the industry started at the bean processing stage. Some were also active in the trade of cocoa beans. By the mid-1990s, many had decided to hive off the less profitable processing of cocoa into intermediate products (cocoa liquor, cocoa butter, and cocoa powder) from their core activities (Outsourcing Step 1). More recently (mid-2000s), there has been a trend towards brand manufacturers outsourcing even their *couverture* needs to specialized partners (Outsourcing Step 2). Eventually, it appears that the outsourcing trend in the industry is moving beyond industrial chocolate and has even reached the final consumer product, as consumer product manufacturers shift their focus towards marketing and source from third parties (Outsourcing Step 3). This process of vertical “disaggregation”, or “deintegration” only concerns consumer chocolate manufacturers. In particular, this strategy has been pursued by branded consumer goods companies with a wide spectrum of business interests (such as Nestlé and Hershey, for example). Consumer chocolate companies with their core business in chocolate products (e.g. Ferrero and Lindt & Sprüngli) have continued to invest in grinding operations.



Source: Adapted from Bad Ragaz (Barry Callebaut A.G.), Hevea Conference, 12 January 2007.

Note: Activities retained by the consumer chocolate manufacturers in the core business are shown in the rectangles; processing segments outsourced to external suppliers are shown by arrows.