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A Brief Economic History of Chocolate

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A Brief Economic History of Chocolate *

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1. Introduction

In 1573, the Swedish botanist Carl Von Linné (known as Linnaeus) gave a scientific name to the cocoa plant in his famous book *Species Plantarum*. He called it *Theobroma* or ‘food of the gods’ in Latin (Katz 2003). While cocoa production and the consumption of derived products had existed for millennia, its existence was largely unknown outside Central America until the Spanish arrived in the early sixteenth century.

In the following centuries the production of cocoa and the manufacturing and consumption of chocolate were totally transformed. Cocoa production spread around the world. Today, Africa is the main producing region. Consumption patterns changed dramatically. The Spaniards added sugar to make chocolate sweeter, later fat was pressed out of the cocoa to make the chocolate more digestible, then milk was added to create ‘milk chocolate’, solid bars were created, and so on.

The first global boom in the cocoa–chocolate sector occurred in the late nineteenth and early twentieth century, driven by growing incomes, new products, falling prices, and changing consumer preferences in Europe and North America. The second global boom started around 1990, with major growth in emerging markets.

With the growth in demand, trade and global value chains developed. While many chocolate companies started as small family enterprises, several have evolved into multinational organizations. Liberalization in commodity markets, the need for quality control, and scale economies have led to increased integration and concentration in global value chains.

In this chapter we document these changes through history. Our overview draws importantly on some excellent and more detailed studies of cocoa and chocolate in specific historical periods and regions, such as Clarence-Smith (2000), Coe and Coe (1996), Dreiss and Greenhill (2008), Heijbroek and Konijn (1995), Rosenblum (2005), Ruf and Siswoputrano (1995), and Szogyi (1997). Some topics will be discussed in more detail in the chapters by Heike Alberts and Julie Cidell; Stefanie Barrientos; Niels Fold and Jeff Neilson and Christopher Gilbert (see Chapters 6, 11, 12, and 16).

The chapter is organized as follows. The next section provides an overview of the origins and use of the cocoa bean from the ancient Central American civilizations to the end of the fifteenth century. We then discuss the Spanish discovery of cocoa and the spread of chocolate consumption in Europe and the growth of trade and globalization of cocoa production from the sixteenth to the nineteenth centuries. Scientific discoveries and innovations in the nineteenth century and the first chocolate boom between

1880 and 1940 are discussed next. The final sections analyse cocoa production and trade in the twentieth century, and the second global chocolate boom since the mid-1990s.

2. Liquor of the Gods and Money Growing on Trees: Cocoa in the Ancient Central American Civilizations (3000 BC–AD 1500)

Most likely, it was the first civilization of the Americas, the Olmec, living some three millennia ago in the humid lowlands of (what is now) the Mexican Gulf Coast, who first domesticated the cocoa plant (MacLeod 2000). The first reconstructed linguistic mentioning of anything resembling the cocoa tree of today is by the Olmec and dates back to 1000 BC. The Olmec civilization dwindled around 400 BC, but cocoa production and consumption grew in importance in later American civilizations (McNeil 2006). The ancestors of the Classic Maya, living around 1000 BC in the lowlands of today's Guatemala, were primitive farmers. However, based on the discovery of rather sophisticated hydraulic systems, Kaplan (2008) argues that they were producing cocoa in some sites, like Izapa and Chocolá.

Cocoa became very important under the Maya empire (AD 250–900). The Mayas gained an intimate knowledge of cocoa cultivation and established the first actual cocoa plantations. Cocoa played several roles in their society. It was used both as the basic ingredient of a drink for human consumption and in religious rituals as an offering to the gods (often in association with human blood). The third important function of cocoa (beans) was as a commodity for exchange (i.e. money) in trade relations. Money literally 'grew on trees' (Rosenblum 2005).¹

From the tenth century onwards, the Maya empire was partially replaced by that of the Toltecs, but they were in constant war with rival tribes. Control over the richest cocoa-producing lands played an important role in the wars. For example, tribes based in Yucatan (today's south-eastern Mexico) fought to get access to cocoa production sites or to cocoa via trade, because it was difficult to grow cocoa trees in Yucatan itself due to natural constraints (scanty rainfall, few rivers and little rich alluvial soils for cocoa plantations). Fighting concentrated in Soconusco (the plains along the coast, in today's Chiapas region in Mexico), where the highest-quality cocoa was produced (Gasco 2006).

During the fourteenth century, the Aztecs conquered a large part of

¹ The importance and value of the cocoa bean as medium of exchange is reflected in archaeological findings of fake cocoa beans, counterfeited with simple clay (Dreiss and Greenhill 2008).

Central America and became the dominant power. The Aztecs used both trade and war to access cocoa. They conquered Soconusco, the region with the best cocoa beans, and they established trade relationships with the Maya traders in the highlands and lowlands to the east of the empire (e.g. those in Yucatan and Tabasco) (Katz 2003).

As the civilizations before them, the Aztecs used the cocoa beans to make drinks, for religious ceremonies, as a currency, as a medicine, and as an aphrodisiac (Wilson 1999).² The Aztecs produced several chocolate beverages, made by extracting the crushed and dried seeds of the cocoa tree, with the addition of herbs, sweeteners, and flavours (Boudewijn and Lang 1959). The liquid brew was poured from one vessel into another from a height, in order to produce a good head on the brew, and, as the Maya before them, they called it cacao (Bond 2011).

However, not everybody was allowed to consume the cocoa brews. Only the emperor and his elite and warriors were so favoured. Warriors were paid with cocoa beans and it was a regular part of their military rations, as the Aztecs realized cocoa had a large nutritious value, necessary for good soldiers.³ The priests used cocoa in religious rituals but were not allowed to drink cocoa brews as they had to live a life of austerity and penance (McNeil 2006).⁴

3. The Spanish Discovery of Cocoa

According to the official account of Columbus' trip to Guanaja (today one of the islands of Honduras) in 1502, the Spaniards encountered a canoe with some 'strange people' carrying 'some kind of almonds' that seemed very valuable to them (Smith 2004). During their conquest of the region in the early sixteenth century, the Spaniards realized that the cocoa bean

² For instance, one rabbit cost about ten cocoa beans and a slave about one hundred.

³ Cocoa brews were also popular among the elite because the alternative drink for them was octli (the native wine), an alcoholic drink. However, there were strong puritanical rules in their life with heavy restrictions on the use and consumption of luxury goods. Drunkenness was not looked upon favourably by the Aztecs and was even punishable by death. For this reason, cocoa brews were a very popular alternative to the alcoholic octli drank and seen as a more desirable beverage, especially for warriors and the nobility. That said, it should be noted that it was already known to the Aztecs that if they fermented the cocoa mix, it could also become alcoholic (Wilson 1999).

⁴ The cocoa bean was worshipped by the Aztecs because the god of air, Quetzalcoatl, was said to have left the 'quachahuatl' tree to the human beings after he had been driven out of the Garden of Eden (Wilson 1999).

was indeed a very valuable fruit, as it was used as currency in the local economy.

As a beverage, however, they disliked the bitter brew. The aversion of the Spanish conquerors for the brew changed when they started to add other flavours (such as vanilla and cinnamon) and especially sweeteners, such as cane sugar, to reduce the bitterness. The Spaniards also started to drink the brew hot. To obtain the foam on top of the beverage, they no longer poured the brew from one vessel to another, but beat the hot drink with a so-called *molinillo*, a large, wooden swizzle-stick (Clarence-Smith 2000).

Another innovation, which had important implications for trade, was the production of tablets of ground cocoa to which water and sugar could be added to make the cocoa beverage. This procedure was already known by the Aztecs, but the Spaniards extended it on a larger scale. Dry tablets of cocoa were much easier to transport to the Old World and to trade throughout Europe. According to some sources, Spanish Catholic missions also fabricated a kind of solid ‘cocoa sweets’ at that time, that is, long before the inventions of the nineteenth century that would turn cocoa into an eatable product (cf. the section ‘Scientific Discoveries and Innovations in the Nineteenth Century’) (Coe and Coe 1996).

During this period the name chocolate also appeared. Cortés simply named the beverage *cacao*, using the local name. However, by the end of the sixteenth century, the Spanish referred to the cocoa brews with another name: *chocolatl* and later—under European influence—*chocolate*.⁵ The use of the cocoa bean also changed partially. As the native cultures before, the cocoa bean was used by the Spanish as a currency in the conquered regions and as the basis for the cocoa beverage. They also used cocoa as a medicine and a sexual stimulant (Dreiss and Greenhill 2008).⁶ However,

⁵ Several reasons have been given for this change in naming. Two of them seem the most plausible. The first explanation is that the name comes from a combination of a Maya word *chocol* (hot) and an Aztec word *atl* (water). This way, the Spanish conquerors referred to the new beverage that was hot and sweetened with sugar. The second explanation is that it comes from the Aztecs who referred to the cold, bitter, and water-based cocoa drink as *cacahuatl*, literally cocoa water. However, in Spain the word *caca* means *faeces*, and because of the embarrassing meaning of the first syllable, the original word *caca-huatl* was transferred into the European linguistic setting, and adjusted to *chocolatl*. For more detailed information on the history of the words ‘Cacao’ and ‘Chocolatl’, we refer to Kaufman and Justeson (2006).

⁶ Until the first half of the 19th century, when modern medicine started to flourish, the basis of the European medical practice went back to the humoral theory of disease and nutrition of the Classical Greeks Hippocrates (460–377 BC) and Galen (AD 130–210), who were convinced that the body contained four ‘humours’: blood, phlegm, yellow bile, and black bile, which would, in a right proportion and mixture, result in good health, and in a bad proportion or mixture, in disease. Humours, diseases, and the medicines to cure these diseases, could be hot or cold and moist or dry. A cold disease had to be cured by a hot drug (or food) and vice versa. The medical knowledge of the Spanish was still based on this humoral theory. Philip II of Spain sent his Royal Physician Francisco Hernandez to the New

unlike the native people, the Spanish did not use the bean in religious ceremonies.

The Spanish tried to control the production and trade of the beans. Initially they refrained from getting involved in the production itself, possibly because of the demands of working in a tropical climate or because they lacked the specific knowledge for cocoa production. Instead, they imposed taxes on production. Later on, they set up cocoa plantations and taxed both production and trade (MacLeod 2000).

4. Trade and the Spread of Chocolate Consumption in Europe (1500–1800)

Cocoa and chocolate were introduced in Spain during the early sixteenth century, but it was not until the late sixteenth century that trade seriously took off. The hot and sweetened drink gained popularity and became a common drink for the nobility during the first half of the seventeenth century. The cocoa concoctions were commended as medicine to cure illnesses, but soon became liked for their taste, their ‘filling nature’, and their stimulation (Wilson 1999; Clarence-Smith 2000).⁷

From Spain, chocolate spread to the rest of Europe, a continent divided by religious conflicts. It first spread to other Catholic regions, especially among religious networks and the aristocracies of (what is now) Italy and France.⁸ Internationally, religious networks of convents, monasteries, and priests that linked the different countries within Europe as well as the Old and the New World contributed to the spread of chocolate. The Society of Jesus (the Jesuits) played an important role. This religious congregation—founded in 1534 and considered as the Pope’s troops in the Catholic Counter-

World in 1570 to study the healing properties of the newly discovered plants. Hernandez concluded that since the cocoa seed was cold and humid in nature, brews made of it ‘are good in hot weather, and to cure fevers’. Another type of cocoa brew was good to ‘excite the venereal appetite’ (Dreiss and Greenhill 2008: 141).

⁷ The Spanish used the production method developed in the Americas: after processing the cocoa beans into a cake, brick, or roll, the compressed cocoa was put into hot water in a chocolate pot. A hole in the middle of the pot was for the handle of the *molinillo*, used to beat the liquid and make it foam. This method became universal throughout Europe, although the French invented the *chocolatière*, a metal pot with a fixed, straight wooden handle at right angles to the spout, used to stir and beat the heavy chocolate liquid into a palatable drink.

⁸ During the first part of Louis XIV’s (1638–1715) reign, he served chocolate regularly to the many noblemen residing in his palace in Versailles. However, after the death of his first wife, the Spanish Maria Teresa, and his marriage to the puritanical Madame de Maintenon, life in his court became more frugal.

Reformation—were politically strong in Europe and in the New World. The Jesuits were known as avid chocolate drinkers and would become important cocoa traders (Coe and Coe 1996).

An important issue was the Catholic Church's rule on whether or not the drinking of chocolate conflicted with the ecclesiastical fast periods, that is, the hours between midnight and the Holy Communion and the forty days of Lent before Easter. Was it a drink that would nourish the body, or did it only quench the thirst? More than two and a half centuries of discussion would be devoted to this question. Several arguments were mentioned: Could it be compared with the use of wine during Lent? Was there a difference regarding the substance and thickness—and thus the nourishing content—of the brew, and so on? The Jesuits (and, with them, most Popes), realizing the importance of the brew for their treasury, argued that one was allowed to drink chocolate during Lent. Despite long debates, the issue was never officially settled, but it became common practice in the Catholic Church to consider cocoa and wine as drinks which could be taken during the religious fast (see Chapter 15, this volume).

The 1496 Treaty of Tordesillas between Spain and Portugal divided the New World into two parts, according to an imaginary north–south line. Spain got the territories to the west of this line, Portugal the territories to the east. Very soon, the Spanish Crown established a trade monopoly in its overseas territories (Rosenblum 2005). All imported goods in its New World territories had to be imported from Spain, and all gold and silver, and many agricultural products—including cocoa—produced in these regions had to be exported to Spain, through the Spanish port of Cadiz. Moreover, the traders themselves had to be Spanish.

However, the Spanish monopoly on cocoa trade did not last. When Dutch and English pirates realized the value of the cocoa bean, they captured part of the Spanish trade. Moreover, from the moment the Dutch had established a naval base in Curaçao in the 1620s, Dutch merchants started to trade with Venezuela, shipping goods—including cocoa beans—to Amsterdam. While the Spanish tried to prevent this 'illegal' trade with Dutch and English traders, trade grew, and by the end of the seventeenth century Amsterdam had become the main cocoa market of Europe (MacLeod 2000).

Only in the mid-seventeenth century did chocolate arrive in England, but so did coffee and tea. In contrast to the situation in continental Europe, where chocolate was consumed mostly by the aristocracy, in England it was available to all who could afford it. People could drink chocolate, as well as coffee and tea, in the so-called *coffee-houses* of the seventeenth century (Wilson 1999).

After spreading in Europe, chocolate was introduced in other regions as well, such as in the North American colonies by the end of the

seventeenth century.⁹ In some regions of the world, chocolate never really got accepted by consumers, such as in the coffee-loving Near East and in India, Southeast Asia, and the Far East (except for the Philippines, which had been conquered by the Spaniards in 1543) (Clarence-Smith 2000).

The popularity of chocolate differed between regions, religions, and social classes in Europe. Schivelbusch (1992) argues that chocolate consumption was ‘southern, catholic and aristocratic’; coffee consumption was ‘northern, protestant and middle class’; and alcohol was the beverage for the proletariat. However, these differences changed over time. The eighteenth century was an age of extreme political, economic, religious, and cultural changes that affected chocolate consumption. The ideas of the *Enlightenment* and the *French Revolution* (1789–99), and the *Napoleonic reign* (1804–15), reduced the power of the Catholic Church and the aristocracy in France and in other European nations.¹⁰ The adherents of the Enlightenment preferred coffee or tea over chocolate, even in Spain. However, in other parts of Europe, the success of chocolate grew. For example, Quaker families played a very important role in the development of the chocolate industries in the nineteenth and twentieth centuries (see the section ‘Scientific Discoveries and Innovations in the Nineteenth Century’).

5. Trade and Globalization of Cocoa Production (1500–1800)

The increase in consumption of chocolate in the Old and New World increased the demand for cocoa beans and raised cocoa prices. This induced attempts to increase cocoa bean production in the original regions and in new regions. A key problem in the original production regions was the supply of labour. The Spanish tried to increase the intensity of cultivation by forcing native producers to intensify planting and harvesting, and by enslaving the local population for work on new plantations (MacLeod 2000). However, the combination of mistreatment by the conquerors and

⁹ Cocoa beans were first traded to Spanish possessions in what is today Louisiana, Florida, California, and the Southwest USA (Smith 2004). The popularity of the chocolate beverage also increased in Mesoamerica, due to the creolization (i.e. mix of Spanish and local people and cultures) in the mid-16th century and under influence of the Jesuits. Chocolate was no longer the prerogative of the rich people—as was still the case in continental Europe—but became a drink for the masses, including the religious clergy (Coe and Coe, 1996).

¹⁰ In Italy—still consisting of several independent states until its unification in 1870—the popularity of chocolate differed from region to region. In Rome and the Vatican, the clergy and aristocrats drank large amounts of chocolate. Naples, under the Bourbons, was heavily influenced by the Spanish Crown and consumed lots of chocolate as well. In Venice, more open to the ideas of the Enlightenment, coffee was more popular than chocolate (Coe and Coe 1996).

the epidemic diseases brought by them, caused the native population to collapse. It is estimated that, by the end of the seventeenth century, only 10 per cent of the original population survived.

The Spanish first tried to solve the labour supply problem in the cocoa plantations by bringing in Maya natives from further away, and later by importing slaves from Africa. African slaves were imported through the *triangular trade system*, a network of trade which operated from the late sixteenth to the early nineteenth century between Europe, Africa, and the Americas. Slaves, cash crops, and manufactured goods were traded between Europe, West Africa, and the (Caribbean and American) colonies. European goods (e.g. textiles, rum, guns) were used to acquire resources and products from Africa. Products such as gold, timber, and rubber were exported back to Europe. African slaves were transported over the Middle Passage (the sea lane west from Africa to America) to the New World to work on the plantations there. The cash crops (e.g. sugar, tobacco, cocoa, cotton) that were produced with their labour were then transported to Europe (Bulliet et al. 2001).

The position of the Catholic Church vis-à-vis slave labour was ambiguous. Triggered by reports of enslavement in the New World, in 1537 the Pope published a bull prohibiting the enslavement of the native population. However, the 1537 bull only prohibited the enslavement of the native population of Latin America. There was no restriction on the use of slave labour from African countries. Moreover, some kind of ‘forced labour’ by the local population was still possible if the Spaniards Christianized the natives in return (McNeil 2006).

With increasing demand-and-supply problems in the original cocoa-producing regions, the prices for cocoa beans remained high. This induced the spread of cocoa production to other regions. Initially this was mainly in Latin America, in regions which today are part of Ecuador, Venezuela, and Brazil (MacLeod 2000). In Ecuador, cocoa plantations were established near the coast and African slaves were imported to work on them. The produced cocoa was of low quality and thus rather cheap. It was destined for the Guatemalan and Mexican markets and sold at a low price. Ecuadorian cocoa was referred to as ‘*cocoa of the poor*’. Venezuela produced cocoa of a higher quality which was destined mostly for Europe in the seventeenth and eighteenth centuries. Also, the plantations in (present-day) Venezuela first used local workers and later African slaves.

In Brazil, the Jesuits had discovered regions in the Amazon where wild cocoa trees were growing. They used the native population to collect cocoa beans in the jungle. The trade in cocoa beans was lucrative for the Jesuits because religious orders were free of paying trade taxes. However, the profitable businesses did not last. Production and trade were interrupted when the local workers were decimated by smallpox and measles in the 1740s and 1750s. Cocoa trade by the Jesuits came to a complete stop in the following

years because of growing opposition to the group within the Catholic Church. In 1767, the Jesuit order was expelled from Brazil and Portugal by King José I of Portugal.¹¹

The Portuguese government then established a cocoa state monopoly in Brazil, which controlled production and trade. African slaves were used as workers on the cocoa plantations. However, by the end of the nineteenth century, when slavery was abolished in Brazil and epidemics had killed many native and African workers, the cocoa plantations in the Amazon region had disappeared. Cocoa would still be produced in Brazil afterwards, but only in the coastal regions (Coe and Coe 1996). The production of cocoa also spread to the West Indies (the Spanish colonies in the Caribbean) and surrounding islands, but faced great difficulties (MacLeod 2000). As elsewhere, the native inhabitants of the West Indies were decimated by the brutality of the Spanish conquistadores and by imported diseases. In addition, the islands in the Caribbean were under continuous attack by Dutch and English pirates. Later, the islands were conquered: Jamaica and Trinidad by the English and Martinique and Guadeloupe by the French. England and France then introduced cocoa production in Jamaica, Martinique, and Guadeloupe in the late seventeenth and early eighteenth centuries. African slaves were imported for the cocoa plantations. The produced cocoa beans were mostly intended for the home markets in Europe.

The cultivation of cocoa beans also spread to Asia. By the end of the sixteenth century, the Dutch had already planted the first cocoa seeds in Ceylon (Sri Lanka) and later in the East Indies (Java and Sumatra). Cocoa beans were introduced in the Philippines by the Spaniards around 1670.

Only in the nineteenth century did cocoa production start in Africa. The first cultivation in Africa occurred in the 1820s, when the Portuguese introduced the cocoa seed in São Tomé and Príncipe. Then the cocoa cultivation spread to Equatorial Guinea (1850s) and Nigeria (1870s). Only at the end of the nineteenth century did cocoa finally reach the Gold Coast (Ghana) (1879) and Ivory Coast (1905); the latter went on to become the largest cocoa producer in the world (Rosenblum 2005).

6. Scientific Discoveries and Innovations in the Nineteenth Century

The *Industrial Revolution* (1750–1850) and discoveries in the nineteenth

¹¹ Also Charles III of Spain wanted to break the power of the Church in his territories. He expelled the Jesuits from Spain and its colonies, and, in 1773, the Jesuit Society was abolished by Pope Clement XIV.

century transformed chocolate production and consumption.¹² Several inventions revolutionized the manufacturing of chocolate by transforming chocolate from a liquid into a solid form. The most important scientific discoveries of this period took place in the Netherlands, England, Switzerland, and in the USA.

Two inventions of the Dutchman Coenraad Van Houten between 1815 and 1828 transformed the chocolate industry (Rosenblum 2005). He was looking for an alternative to boiling of cocoa and skimming off the fats, and for extracting the cocoa butter from the cocoa beans. First, he invented the *cocoa press*, a hydraulic press to press out— and thus remove—most of the fat (the ‘butter’) of the cocoa mass. This way the cocoa mass could be divided into cocoa powder (i.e. a cake that could be pulverized) and cocoa butter. The butter was used to make a new product: plain eatable chocolate. In a second invention—known as the ‘*Dutching process*’—the cocoa cake was treated with alkaline salts in order to cause the product to mix well with water. The resulting chocolate drink was darker in colour, milder in taste, and easier to digest than previously. This paved the way for a consumption boom in chocolate. The cocoa powder could be used for all kinds of applications, including chocolate drinks for children, while the remaining fat could be used in chocolate bars and candies.

Several of the first chocolate companies were founded by Quakers, known for their pacifist and teetotal beliefs; they considered chocolate a good alternative to alcoholic drinks (Beckett 2008). In England, two Quaker families, the Frys and the Cadburys played a very important role. In 1787 Joseph Fry became a chocolate manufacturer in Bristol. After his death, his son and grandson established the first factory to produce an eatable pure chocolate product. They made use of Watt’s steam engine to produce chocolate. In 1847, Fry’s great-grandson invented a way to mix cocoa powder, sugar, and melted cocoa butter (instead of water) to produce a paste that could be cast into a mould to make chocolate bars. Around that time, another Quaker, John Cadbury, opened a shop in Birmingham where he sold coffee, tea, and chocolate in its liquid form. However, after the purchase of a model of Van Houten’s machine in 1866, he started to make his own cocoa powder. Soon Cadbury and Fry started competing and transformed the entire English chocolate industry (see Chapter 15, this volume).

Not just in England, but around the world, the 1840s are seen as the beginning of commercial cocoa and chocolate production. Very quickly, the new eatable cocoa product became popular. As a result, the price of cocoa butter increased, resulting in a division of the type of chocolate product that people could afford to buy: drinkable chocolate from cocoa powder became the chocolate for the masses, and eatable, solid chocolate from cocoa butter

¹² See Chapter 3, this volume, for more details on this period.

became the chocolate for the rich. However, soon, even more products could be purchased. Cocoa powder was also used as a flavouring ingredient for a diverse variety of products, such as biscuits, cakes, and even ice creams. The Cadbury family in England became known for the boxed chocolates they sold, the ‘ideal present to give to a woman’.

Switzerland was also home to important innovations in chocolate production in the nineteenth century (see also Chapter 4, this volume). The first Suisse chocolate manufacturers (François Cailler and Philippe Suchard, who opened their doors respectively in 1819 and 1826) made their chocolate products with machines of their own invention. The *mélangeur* (mixing machine) of Suchard became especially important in the further development of the chocolate-producing process. Two other Suisse chocolate entrepreneurs (Henri Nestlé and Daniel Peter) made crucial breakthroughs (one in 1867 by Nestlé and one in 1879 by Peter), which allowed the invention and production of *milk chocolate* (Alberts and Cidell 2006). Rodolphe Lindt invented the *conching procedure* in 1879, to make solid chocolate more smooth, better tasting, and less gritty. His *fondant chocolate* would become very popular (Katz 2003). Lastly, Jean Tobler invented the *tempering method*, which destroyed the crystal structure of the cocoa butter so that it would become smooth instead of crystallizing out and becoming blotchy and granular in chocolate confections.

Due to all these inventions, chocolate manufacturing became possible on a larger scale. In the USA, Milton Hershey, a Mennonite from Pennsylvania, had established an actual ‘chocolate town’ in 1905 (called ‘Hershey’) with a factory, schools, a department store, a park, churches, and so on. In this town everything was centred around the production of chocolate, which was organized following Henry Ford’s mass production model, to produce large amounts (Smith 2004). As was the case in Ford’s auto industry, Hershey had totally mechanized his chocolate company, with machines and conveyor belts, into a true assembly-line operation. He used milk from his own dairy farms and sugar from his own factory in Cuba (and he built Cuban railways to get the sugar to the ports to ship it to Pennsylvania).¹³

Around the same time, a series of inventions by Belgian chocolate manufacturers improved both the quality and marketing (e.g. the invention of the ‘pralines’) and the development of ‘chocolate couverture’ by the Callebaut company, which lowered the cost of producing and transporting intermediate chocolate products for use in various end products (see Chapter 5, this volume).

¹³ For more detailed information on Hershey’s ‘chocolate town’, we refer to chapter 5: ‘The Bittersweetest Town on Earth’, in Rosenblum (2005).

7. The First Chocolate Boom, 1880–1940

These innovations transformed chocolate production and marketing. By the beginning of the twentieth century, the three processes of modern chocolate manufacturing that result in three different products: *cocoa powder*, *dark chocolate*, and *milk chocolate*, were in place.

The inventions made chocolate production possible on a larger scale and led to an increased quality and stability of eating chocolate and product diversification (milk chocolates, chocolates with improved taste and colour, the fabrication of more digestible powders, easier to mix with liquids, etc.). The impact of the inventions was reinforced by falling transport costs and reduced import taxes on cocoa beans after 1860, lowering the price of chocolate, as well as urbanization, increasing purchasing power, and advertising.

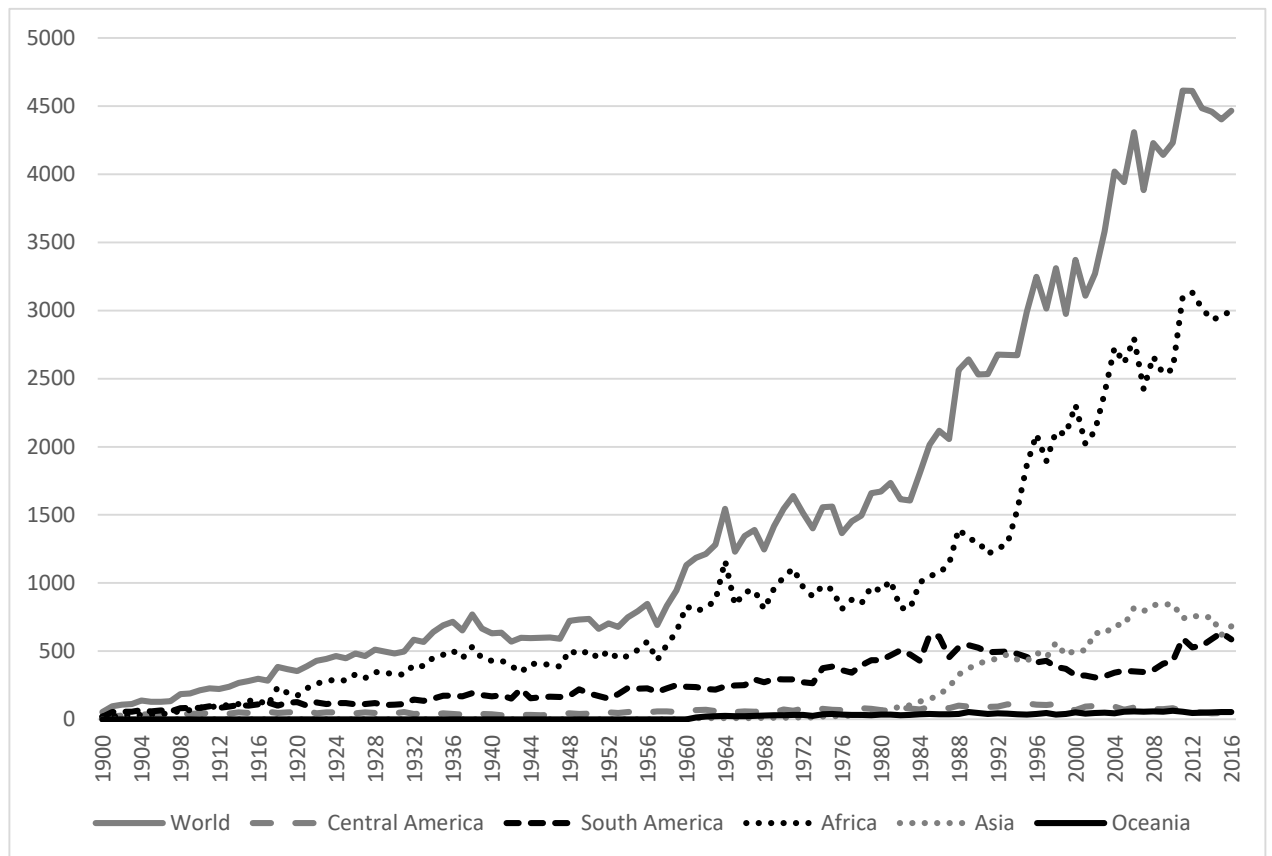
All these factors contributed to what Clarence-Smith (2000) calls the ‘great chocolate boom’ in both chocolate production and consumption, especially in Europe and North America, during the period 1880–1914.¹⁴ It is estimated that, around 1870, about 50 million people drank chocolate, compared to 500 million drinking tea and 200 million drinking coffee. Between 1870 and 1900, the world imports of cocoa beans grew nine times, compared to an increase with only about half for coffee and a doubling for tea. However, as Figure 2.1 shows, the cocoa— and hence chocolate— boom did not end in 1914. In fact, it continued until 1940.

By 1940, cocoa production was more than ten times higher than in 1900 (from 53,000 tons to 632,000 tons), while consumption had already increased dramatically since 1870.

A crucial factor in the growth of chocolate consumption was the impact of the Industrial Revolution on the incomes of the poor and, in particular, industrial workers. It induced a massive increase of chocolate consumption among the working class.

¹⁴In other regions, like South and Central America, Asia, and Africa, the increase in chocolate consumption was much less apparent. The Western boom was not replicated in these regions (Clarence-Smith 2000).

Figure 2.1 World production of cocoa beans (1900–2016), by region in 1000 metric tons



Source: Mitchell (2007a, 2007b, and 2007c) and FAOSTAT (2013a and 2018).¹⁵

In summary, the combination of new, easily accessible, chocolate consumer products, falling production and transport costs, and a growing mass of consumers with higher incomes, who were increasingly concentrated in urban areas, contributed to a dramatic increase in chocolate consumption. In addition, chocolate consumption was propagated by public bodies as a nutritious food item because it was considered to be healthier than coffee or tea (Clarence-Smith 2000).

¹⁵ For the Asian region no data was available in Mitchell’s historical statistics. Therefore, Mitchell’s historical statistics were combined with data from FAOSTAT, available from 1961 onwards.

8.Cocoa Production in the Twentieth Century

The production of cocoa beans increased dramatically in the twentieth century. In 1900 the total world cocoa production was 53,000 tons, by 1950 it was 736,000 tons, and by 2016 it was 4.5 million tons (Figure 2.1). However, the growth was not continuous throughout the twentieth century. There were three periods of strong growth: the 1900–40 period, the 1965–75 period, and the 1990–2016 period. The growth of the first period was driven by growing consumption in Europe and North America (see section ‘The First Chocolate Boom, 1880–1940’). The 1965–75 growth was associated with strong increases in cocoa prices (see Figure 2.2). The growth of the last period was driven by consumption growth in emerging countries, especially in Asia (see the section ‘The Second Chocolate Boom’).

The origin of the cocoa beans production changed dramatically as well. As we explained in the section ‘Liquor of the Gods and Money Growing on Trees’, cocoa production originated in South and Central America, and spread, from the seventeenth and eighteenth centuries onwards, to other regions. In the late nineteenth and early twentieth centuries, cocoa cultivation had spread to the main countries in Africa. In 1900, cocoa production was spread roughly equally between Africa (37 per cent) and Latin America (63 per cent, of which 36 per cent was in South America and 27 per cent in Central America) (Table 2.1). The principal cocoa-producing countries at that time were Ecuador (36 per cent) and Brazil (34 per cent) in South America, São Tomé, and Príncipe (32 per cent) in Africa, and Trinidad and Tobago (26 per cent) in Central America (Table 2.2).¹⁶ But soon Africa became the world’s leading cocoa producer. Ghana, Nigeria, and the Ivory Coast especially became major cocoa-producing centres. By the 1930s, 68 per cent of total production was already in (West) Africa, against 31 per cent in Latin America.

This remained relatively constant until the 1970s. From the 1980s onwards, Asia became an important producer of cocoa beans, especially Indonesia. By 2010, Asia already accounted for 20 per cent of world production, decreasing afterwards to 15 per cent by 2016. At the same time, the share of Latin America reduced from 31 per cent in the 1930s to 12 per cent in 2010 – increasing again to 14 per cent by 2016 (13 per cent for South America and 1 per cent for Central America respectively). Despite the growth in Asia, the largest part of the cocoa is still produced in Africa (61 per cent in 2010 and 67 per cent in 2016). Eight countries (the Ivory Coast, Ghana, Indonesia, Cameroon, Nigeria, Brazil, Ecuador and Dominican Republic) together accounted for 90 per cent of the world cocoa production in 2016, with the Ivory Coast alone responsible for 33 per cent of the world’s crop.

¹⁶ See Poelmans and Swinnen (2015) for more details.

Ghana and Indonesia come second and third, with 19 and 15 per cent respectively (see Table 2.2).

In Indonesia, total production of cocoa has increased enormously since the 1960s. Output has grown from zero to more than 650,000 tons in 2016 due to a combination of policy reforms and improved economic incentives.¹⁷ The country overtook Malaysia in 1993 to become the largest producer in Asia. Malaysian production dropped by more than two-thirds between 1986 and 2000 because many producers found it advantageous to switch from cocoa to oil palm plantations (Clay 2004).¹⁸

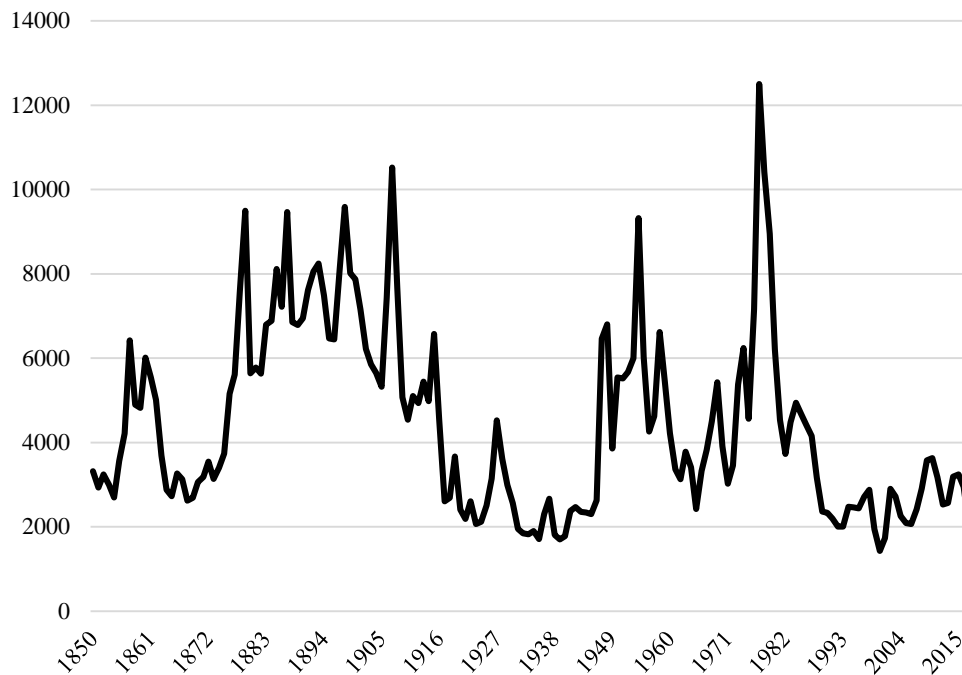
The main Latin American producers (Brazil and Ecuador) saw their share in the world market decline strongly. By 2016, their share had fallen to 5 and 4 per cent respectively. Brazil still had a share of 14 per cent in 1960 and remained one of the world leading producers of cocoa beans during the 1980s (with a share of 20 per cent).¹⁹ However, Brazilian cocoa production collapsed in the late 1980s due to an outbreak of Witches' Broom, a fungus.

¹⁷ There were strong economic incentives that encouraged production in Indonesia. First, as in West Africa, markets were liberalized; second, there was no taxation on cocoa; and third, there were frequent currency devaluations that made cocoa exports more competitive internationally. Furthermore, the government also promoted several secondary business opportunities linked to cocoa production such as: distribution, shipping, grinding, and packaging opportunities, and the Indonesian smallholders were very efficient farmers who used new, superior farming techniques to help boost productivity and reach higher yields on their farms throughout the 1990s (Ruf and Siswoputranto 1995 and 2007). Moreover labour costs were lower than in Malaysia, which meant Indonesian cocoa farmers could produce cocoa at low prices throughout the 1990s. Lastly, before the Asian crisis in 1998, farmers enjoyed subsidies, but after the crisis most subsidies were stopped. However, around the same period there was also an outbreak of diseases affecting the Indonesian cocoa crop and forcing production to reallocate in some regions (Heijbroek and Konijn 1995). In this respect, and as Indonesia's productivity per hectare was deteriorating compared to other countries, the government decided to start a five-year revitalization plan in 2009 to boost cocoa production. This plan should increase the yields on the smallholders' farms in the future through intensification and rehabilitation activities (Taylor 2013).

¹⁸ In many other Asian countries several agricultural economies were also damaged due to the devastations caused by wars, such as that in Vietnam (Ruf 2007).

¹⁹ The lowest share in the decade of the 1980s was the year 1980 (17%) and the highest share the year 1986 (22%) (FAOSTAT 2013a).

Figure 2.2 Real cocoa prices, 1850–2017, in \$ per ton (2017 values)



Source: For the years 1850–2014, see Chapter 16 of this volume by Chris Gilbert. For the years 2015–2017, World Bank Group, 2018.

Table 2.1 Regional production of cocoa beans (1900–2016), in % of world production

	Latin America	Africa	Asia	Oceania
1900	63	37	/	/
1910	60	40	/	/
1920	51	49	/	/
1930	31	68	/	/
1940	33	68	/	/
1950	32	68	1	0
1960	27	72	1	0
1970	24	68	1	2
1980	30	56	4	2
1990	25	52	16	2
2000	12	68	15	2
2010	12	61	20	2
2016	14	67	15	2

Note: Latin America = South America and Central America (including the Caribbean)

Source: Boudewijn (1959); FAOSTAT (2013a and 2018) and Mitchell (2007a, 2007b, and 2007c).

Table 2.2 The largest cocoa-producing countries, 1900–2016, in tons and in % of world’s total production

Country	1900 (1901)		1960		2016	
	Tons	%	Tons	%	Tons	%
Ivory Coast	0 (0)	0 (0)	94,000	8	1,472,313	33
Ghana	1,000 (2,400)	2 (3)	439,000	39	858,720	19
Indonesia	0 (0)	0 (0)	1000	0	656,817	15
Cameroon	0,500 (0,700)	1 (1)	74,000	7	291,512	7
Nigeria	0,200 (0,300)	0 (0)	189,000	17	236,521	5
Brazil	0 (18,000)	0 (19)	163,000	14	213,843	5
Ecuador	19,000 (23,000)	36 (24)	44,000	4	177,551	4
Dominican Republic	0 (7,000)	0 (7)	40,000	4	81,246	2
Colombia	0 (3,000)	0 (3)	14,000	1	56,163	1
Togo	0 (0)	0 (0)	11,550	1	51,627	1
Papua New Guinea	0 (0)	0 (0)	9,271	1	44,943	1
Mexico	0 (1,000)	0 (1)	17,000	2	26,863	0.6
Sao Tomé and Príncipe	17,000 (17,000)	32 (18)	9000	1	2787	0.06
Malaysia	0 (0)	0 (0)	1000	0	1757	0.03
Trinidad & Tobago	14,000 (12,000)	27 (13)	6000	1	297	0
World	52,700 (94,400)	100 (100)	1,131,000	100	4,466,574	100

Source: Faostat (2013a and 2018)

9. Trade in Cocoa Beans and Intermediate Products

Since the Spanish discovery of cocoa in Central America there has been a strong geographical and economic divide between the centres of production and consumption. Production of raw material (cocoa) was in poor countries in Latin America, Asia, and (now) especially Africa. Consumption of the final products (chocolates and confectionary) was mostly located in the rich countries of Europe and North America. In fact, although many farmers in Africa depend on cocoa for their livelihood, and the largest cocoa-producing countries are situated in Africa, most of these farmers have never tasted a final chocolate product and chocolate demand in many African-producing countries was very low until recently (Hütz-Adams and Fountain 2012). For instance, in 2012, 56 per cent of all traded cocoa came from just Ivory Coast and Ghana, yet chocolate consumption in these countries only represented 0.6 per cent of the world market.

This, of course, implies that trade plays an important role in the cocoa–chocolate value chain, and that cocoa-producing countries are major exporters and consuming countries major importers of cocoa products. Initially, trade was mostly in the form of raw material (cocoa beans). The cocoa-processing industry, where cocoa beans are processed into intermediate products and industrial chocolate—a raw material for the food industry—was mainly located in the developed world, near the major centres of cocoa consumption.

Table 2.3 Grindings by region as percentage of world total (1975–2015)

	1975	1985	1995*	2005	2010	2015
Total Europe	48.9	49.9	50.7	41.8	41.7	38.7
<i>Western Europe</i>	37.1	38.6	44.0	37.8 (EU)	38.0 (EU)	36.0 (EU)
<i>Eastern Europe</i>	11.8	11.3	6.7	4.0 (rest of Europe)	3.7 (rest of Europe)	2.7 (rest of Europe)
North America	12.2	11.7	12.7	12.3	10.2	9.7
Total Latin America, Africa and Asia & Oceania	38.9	38.4	36.6	45.9	48.1	51.6
<i>Latin America</i>	/	/	/	12.7	11.8	11.7
<i>Africa</i>	/	/	/	13.9	17.5	18.6
<i>Asia</i>	/	/	/	19.3	18.8	21.3
<i>Oceania</i>	/	/	/	0.02	0.02	0.004

*1995: data for 1994

Source: Calculated with data from Heijbroek and Konijn (1995: 37–40); ICCO (2010: 40–41; 2012: 1; 2017: 48, 50 and 51).

Table 2.3 compares the grindings by region.²⁰ Between 1975 and 1995, Europe and North America accounted for more than 60 per cent of total world grindings (i.e. more than 60 per cent of all cocoa beans were exported and processed into intermediate and final products in the developed world). Europe accounted for around 50 per cent and the USA for around 12 per cent. Less than 40 per cent of total world grindings took place in the cocoa-bean-producing countries (i.e. less than 40 per cent was processed locally prior to export). However, since 1995, the cocoa-producing countries' share of processing cocoa beans has grown significantly and trade is increasing in intermediate products (ECOWAS 2007). As Table 2.3 shows, by 2015, the

²⁰ Grindings is the industry's term for processing cocoa beans into intermediate products, such as cocoa butter, paste, and powder/cake.

combined share of Europe and the USA had fallen to 48.0 per cent and most of the growth was in Africa and Asia.

Table 2.4 The largest cocoa grinding countries in 1975 and 2015 (shares in % of world's total grindings)

	1975	2010	2015
Netherlands	8.3	13.7	13.0
Germany	10.3	11.2	10.4
United States	12.2	10.2	9.7
Ivory Coast	2.5	9.2	11.9
Malaysia	0.5	7.6	4.7
Brazil	6	6.1	5.5
Ghana	n.a.	5.9	4.9
Indonesia	n.a.	5.7	9.3
Rest of World	n.a.	30.4	30.6

Note: For the year 1975, there was no data available for the share of Ghana and Indonesia in total world grindings. As the exact data for 2010 for Malaysia were missing, we used the data of 2009.

Source: Calculated with data from Heijbroek (1995) and ICCO (2007, 2010, 2012) and ICCO (2017: 48, 50 and 51).

Both in 1975 and in 2015, three countries (the Netherlands, Germany, and the USA) had a combined market share of more than 30 per cent of total grindings (30.8 per cent in 1975 and 33.1 per cent in 2015). The Netherlands is the world's leading cocoa-processing country (Table 2.4). However, the share of the cocoa-bean-producing countries—in particular the Ivory Coast, Malaysia, Ghana, Brazil, and Indonesia—is growing. It reached 36 per cent in 2015.²¹ All these cocoa-bean-producing countries have between 4.7 per cent and 12 per cent of the world's grindings in 2015.

The reason for their increasing interest in grinding activities lies in the division of the value added in the chocolate production chain (Kox 2000). According to estimates by the International Cocoa Organization (ICCO), only 3.3 per cent of consumer spending on finished chocolate products goes to the cocoa farmers, that is, the cocoa-producing countries. A total of 96.7 per cent goes to all the other parties involved: especially chocolate

²¹ Grindings carried out by countries where production of cocoa beans take place are called origin grindings.

processing (22 per cent, including the cocoa processors and the fabrication of chocolate products) and wholesale and retail (26 per cent) (ICCO 2010). In order to gain a part of the value added, cocoa- bean-producing countries have started to produce intermediary products themselves, instead of just exporting the cocoa beans. As we will explain in the section ‘Restructuring of the Cocoa–Chocolate Value Chain in Recent Years’, this process was stimulated by liberalizations of the cocoa sector in Africa in the 1980s, and takeovers of local cocoa companies and investments by multinational companies in the 1990s and 2000s.

All this is reflected in Table 2.5, which shows, for 1961, 2011 and 2015, how exports and imports of cocoa beans and cocoa products differ by regions. Africa and Latin America were net exporters of cocoa beans and Europe and North America were net importers of cocoa beans, both in 1961, 2011 and 2015. With regard to the intermediate products (cocoa butter, paste, and powder and cake), the trade picture reflects changes in regional processing. For instance, while Europe was a net importer of cocoa butter and paste, it was a net exporter of cocoa powder and cake, both in 1961 and 2011. North America was a net importer in all intermediate products, both in 1961, 2011 and 2015. The data clearly show the strong growth of the intermediates from Africa and Asia in recent years. Asia became a large net exporter of cocoa butter and cocoa powder and cake. Africa became a large net exporter of all derivatives.

Interestingly, as in the nineteenth century, these liberalizations of cocoa trade also preceded a major growth in global cocoa trade and chocolate consumption (see sections ‘Restructuring of the Cocoa–Chocolate Value Chain in Recent Years’ and ‘The Second Chocolate Boom’).

Table 2.5 Net exports of cocoa beans and intermediate cocoa products, 1961, 2011 and 2015 (in million US\$)

1961	Cocoa Beans	Cocoa Butter	Cocoa Paste	Cocoa Powder and Cake	All cocoa products
	Net Exports	Net Exports	Net Exports	Net Exports	Net exports
Africa	375.35	2.96	0.00	2.01	380.32
Asia	-10.11	-6.20	-0.16	-1.26	-17.73
Europe	-301.76	-5.55	-1.66	15.80	-293.17
North America	-163.5	-13.21	-8.00	-10.43	-195.13
Latin America	79.62	19.17	-0.26	0.17	98.71
Oceania	-3.34	-3.13	-0.03	-0.31	-6.81

2011	Cocoa Beans	Cocoa Butter	Cocoa Paste	Cocoa Powder and Cake	All cocoa products
	Net Exports	Net Exports	Net Exports	Net Exports	Net exports
Africa	6728.72	455.19	550.25	72.30	7806,47
Asia	-1460.38	708.85	-59.91	317.76	-493,68
Europe	-5735,75	-724.98	-739.62	331.45	-6868,90
North America	-1657.60	-461.30	-84.90	-767.97	-2971,77
Latin America	566.49	126.66	25.09	-102.28	615,96
Oceania	192.85	-81.61	-45.89	-125.62	-60,27

2015	Cocoa Beans	Cocoa Butter	Cocoa Paste	Cocoa Powder and Cake	All cocoa products
	Net Exports	Net Exports	Net Exports	Net Exports	Net exports
Africa	6350,17	613,37	1043,49	100,79	8107,82
Asia	-1389,13	1084,61	-183,80	110,96	-377,36
Europe	-3764,61	-913,79	-624,49	99,77	-5203,12
North America	-1632,85	-684,65	-44,98	-332,91	-2695,40
Latin America	937,16	167,46	20,20	-39,66	1085,16
Oceania	125,48	-132,64	-54,14	-83,08	-144,38

Note: Net exports = the value of the region's exports minus the value of its imports.

Source: FAOSTAT (2013b and 2019b).

10. Restructuring of the Cocoa–Chocolate Value Chain in Recent Years

The cocoa–chocolate value chain of the twenty-first century is characterized by a fragmented supply structure, strong concentration in the intermediate industry, and a mixed set of final producers. Not surprisingly, parts of the supply chain have undergone important changes over time—both horizontally and vertically.

Key factors in these changes have been the Industrial Revolution and several innovations which created scale economies in the twentieth century, the liberalization of the African cocoa marketing systems in the 1980s and 1990s, and globalization, growth, and changing consumer preferences in the chocolate consumer markets

10.1. Cocoa Production and Trade

Today, over 90 per cent of the world’s cocoa is grown on about five million small farms, averaging between one and five hectares. Production in West Africa and Southeast Asia is mainly on these small farms.²² Larger farms and plantations are found in Brazil, Ecuador, and Malaysia (UNCTAD/WTO 2001).

Cocoa farmers often sell their beans to small traders who sell to wholesalers, who in turn resell the beans to exporters or, increasingly, local cocoa grinding companies (Musselli 2008). The nature of the cocoa marketing system has changed dramatically over the past two decades.

Cocoa was a major source of government revenue for several developing countries after their independence. State regulation of cocoa production, marketing, and exports was therefore very strong in the 1960s and 1970s. State-controlled bodies coordinated all aspects of the internal and external cocoa marketing chain by setting producer prices, buyer margins, and export taxes (Abbott and Wilcox 2004). Domestic trade and exports were controlled by state monopolies. The surplus revenues of these marketing boards were directed to a stabilization fund, which would cover potential losses if world market prices moved in an adverse direction (Fold 2001). Their official objectives were to achieve price stabilization (i.e. protect farmers from volatile world prices), assuring cocoa quality and providing services for

²² In these regions, the sector is characterized by very poor conditions. Cocoa is heavily dependent on natural resources as well as low-cost labour (Doussou 2009). Severe cases of child labour, child slavery, low income for cocoa farmers, forest exploitation, and other factors are issues that the industry struggles with daily. These issues are attracting more and more attention in the media and abolishing these problems will remain a challenge in the future (Cappelle 2008; Doussou 2009).

farmers (Gilbert 2009). However, the taxes imposed on the cocoa exports were a very important source of government income (Abbott and Wilcox 2004). For example, in Ghana the implicit taxation on cocoa farmers increased from 20 per cent in 1960 to more than 80 per cent around 1980 (see Chapter 15, this volume).

In many African countries, a wave of market liberalizations in the 1980s and 1990s changed the market structure of cocoa production. The liberalization process was driven by a number of factors. The state-controlled bodies were suffering from low world market prices and increased competition in the 1980s. Indonesia and Malaysia were two rising world producers with free market conditions that were increasing production successfully. Historically low commodity prices resulted in a struggle by the controlling and regulatory institutions in many African countries to maintain producer prices that were viable, and many stabilization agencies headed towards insolvency (ECOWAS 2007; Gilbert 2009). In addition, the International Monetary Fund (IMF) and the World Bank supported the liberalization process and insisted on reducing the producer taxation by removing the expensive and extractive state operations from the cocoa marketing chain as part of structural adjustment programmes.

The liberalizations of these systems occurred in 1986 for Nigeria, between 1991 and 1994 for Cameroon, and between 1998 and 2002 for the Ivory Coast, while partial liberalization in Ghana took place in the 1980s and 1990s (see Chapter 13, this volume). After the reforms, cocoa farmers generally received higher shares of the world prices than before liberalization (Gilbert 2009). For example, in Ghana, government taxation of cocoa farmers fell from more than 80 per cent in the early 1980s to around 30 per cent in the 1990s (see Chapter 15, this volume).

After the liberalization processes of the 1980s and 1990s, (para)statal companies have been privatized or liquidated, and trade is now mostly by private companies. The liberalization of the cocoa sector in Africa has also resulted in increased concentration in the export sector. During the first years of the market liberalization, several local, private companies entered the cocoa industry as buyers or traders, and a number of large private exporters emerged in the export markets (Fold 2000; Musselli 2008). However, soon foreign companies took over (a share of) the local cocoa export companies, either directly or through agents. Some of the local traders have managed to remain independent, but most are now subsidiaries of multinational companies or in joint ventures with multinationals (see Chapter 11, this volume). For instance, in 2011, and in West and Central Africa, only 37 per cent of all cocoa beans was still purchased (and exported) by African companies, of which one company—Public Buying Company (PBC)—had 11 per cent.²³ Five

²³ Most of these African companies sell their beans on to the five foreign leading companies

foreign companies now dominated the cocoa export market: Cargill, Archer Daniels Mid- land (ADM), Olam, Barry Callebaut, and Armajaro, with a joint share of 47 per cent (see Table 2.6).

**Table 2.6 The largest cocoa trading companies in 2011
(in % of West and Central Africa’s total cocoa trade)**

Company	Share (in %)
Cargill	14
Archer Daniels Midland (ADM)	11
Olam	8
Barry Callebaut	7
Armajaro	7
Cemoi	4
Noble	4
Touton	3
Ecom	3
Novel	2
Public Buying Company (PBC)	11
Other African companies	26

Source: George (2012).

10.2.Cocoa Grinding and Processing

The concentration that has taken place over time in the cocoa trade and in the grinding sector are closely linked to each other, as most traders also have active operations as cocoa grinders. Cocoa grinders have strengthened their position in the market through vertical integration into chocolate processing, which, as a result, has also become more concentrated. Grinders have started liquid chocolate production activities and are increasingly supplying chocolate manufacturers. In the process, many corporate deals have taken place in the cocoa-processing and chocolate-processing industry. Many of the leading grinding companies are also important cocoa trading companies. For instance, in 1990 there were over forty grinders in Europe, but by 2000 this number had decreased to only nine (Musselli 2008). In 2012/2013, about 75 per cent of all grindings worldwide was carried out by just eight firms (see Table 2.7).

While vertical integration has taken place at the trading-grinding-

(George 2012)

processing part of the cocoa–chocolate value chain, the opposite has occurred at the down- stream side of the value chain. The chocolate manufacturing industry has outsourced certain manufacturing activities, such as the production of cocoa liquor, cocoa butter, or liquid chocolate (couverture chocolate). Due to the outsourcing of cocoa processing by some large chocolate manufacturers, some trading, grinding, and industrial-processing companies, such as Cargill and Barry Callebaut, successfully reinforced their position in the processing market²⁴, as they took over processing activities from the chocolate manufacturers (Cappelle 2008; Weiligmann et al. 2009).

Table 2.7 Grinding capacities across the cocoa processing industry as a share of total grindings in the year 2012/2013

Company	Share (in %)
Barry Callebaut	24
Cargill	17
Archer Daniels Midland (ADM)	13
Blommer	7
Olam	4
JB Foods Ltd	4
BT Cocoa	3
Ecom Agroindustrial Corp. Ltd.	3
Others	25

Source: Gayi (2018).²⁵

The changes are well illustrated by the three largest deals: those by *Cargill*, *ADM*, and *Barry Callebaut*, companies which are in the top four of the largest trading and grinding companies (see Tables 2.6 and 2.7).

Cargill, the multinational cocoa processor and trader, became a leading cocoa processor and supplier in the sector as of 1987 when it acquired General Cocoa Company Holland B.V. and Gerkens Cocoa products. After the takeover,

²⁴ For instance, Nestlé has subcontracted its cocoa processing to grinding companies such as Cargill, Petra Foods, and ADM.

²⁵ Gayi found his figures in data from Hardman and co (2014) and ICCO (2015): “Calculations of the shares are based on grinding capacities of cocoa processors (data from Hardman & Co, 2014) divided by the average global grindings of cocoa over the period 2011/12 -2013/14 (data from ICCO, 2015)”.

the company was active in cocoa trade, the manufacturing of semi-finished products, and the manufacturing of couverture chocolate, both in cocoa-producing and chocolate-consuming countries. Later on, in 2005, the company expanded its cocoa activities by buying facilities in Vietnam and by acquiring the German industrial chocolate facility, Schierstedter Schokoladenfabrik GmbH & Co. KG. In 2008, Cargill invested over 100 million US\$ for establishment of a new processing plant in Ghana. Today Cargill is even involved in the consumer market (Musselli 2008; Cargill 2011).

ADM entered the cocoa business in 1997 and has grown impressively since. In 2009, ADM expanded its global cocoa practices significantly through the acquisition of Schokinag-Schokolade-Industrie Herrmann GmbH & Co., a leading producer of cocoa intermediates. ADM is active in producing and consuming countries and is involved in the trade of cocoa as well as the production and trade of semi-finished products and the manufacturing of couverture chocolate. It also became more involved in the consumer market over time (Musselli 2008; Weiligmann et al. 2009; ADM 2014).

The 1996 merger of Callebaut, which produced couverture chocolate, and Barry, which had complementary activities in cocoa sourcing and processing firms, created the vertically integrated Barry Callebaut group. The firm also became involved in the production of consumer chocolate (Musselli 2008). In 2012, Barry Callebaut acquired the cocoa business from Petra Foods, then the world's number six in cocoa grinding (Table 2.7). Both companies are complimentary in terms of business, products, and geography (Barry Callebaut 2013).

These three companies are now among the largest firms both in cocoa trade, grinding, and processing, that is, in the entire 'middle segment' of the value chain. ADM, Cargill, and Barry Callebaut had, in 2008, a joint share of 41 per cent of world grindings. By 2012/2013 their share had increased to 54 per cent (see Table 2.7). The same three companies were also amongst the largest cocoa traders and together accounted for one-third (32 per cent) of the world's cocoa trade (see Table 2.6). Moreover, as these firms have been investing considerably in capacity expansion and new factories in the recent past, ICCO (2010) expects that their share will continue to expand in the future.

10.3. Chocolate Manufacturing

Today, the chocolate manufacturers can be divided into three broad types of manufacturers, based on size and business interests: first, the global confectioners; second, the producers of industrial chocolate (who moved into consumer markets); and third, the smaller artisanal chocolatiers and the gourmet chocolate processors (Musselli 2008).

First, the ‘global confectioners’ are a small group of large multinational firms that manufacture branded consumer goods and are active around the globe. Between the 1970s and 1990s more than 200 takeovers took place globally among the manufacturing companies, leading to only 17 firms that had a combined market share of about 50 per cent of the global chocolate market by 2001 (Dand 1999; Fold 2001). The top four companies had a joint market share of 26 per cent in 2001, which increased to 39 per cent by 2004, and to 48 per cent by 2016. The top four chocolate manufacturers in 2016 were Mars Inc. (with 14.4 per cent); Mondelez International Inc. (with 13.7 per cent), Nestlé SA (with 10.2 per cent) and Ferrero Group (with 9.5 per cent) (Table 2.8). The second largest company, Mondelez International Inc., was formed in 2009 by the merger of Cadbury and Kraft Foods Inc., which combined two leading chocolate confectioners in the market.

Table 2.8 The largest chocolate manufacturers in 2016 (company shares in % of world’s total production)

Company	Share in (%)
Mars Inc (US)	14.4
Mondelez International Inc (US)	13.7
Nestlé SA (Switzerland)	10.2
Ferrero Group (Italy)	9.5
Hershey Food Corp (Us)	7.2
Chocoladefabriken Lindt & Sprüngli AG (Switzerland)	5.1
Other	40.0

Source: “Leading chocolate companies worldwide 2016” on: *The Statistics Portal* www.statista.com (2018)

The second group we have already discussed: the large merchants of industrial chocolate, which are also active in upstream segments, such as cocoa processing and industrial chocolate manufacturing. Some are also present in the consumer section of the market. An example is Barry Callebaut, which acquired companies in the consumer segment to establish itself in the consumer market (Musselli 2008). Some became involved in (final) consumer markets because chocolate manufacturing companies are increasingly outsourcing certain manufacturing activities, to cut costs or to focus more on specific brands (ICCO 2007). To gain a global market position in a specific field for their brands requires increasing budgets for marketing and branding and for product development and innovation.²⁶ Companies do this by

²⁶ The major chocolate manufacturers invest, on average, 20 per cent of their total budgets on

outsourcing specific production activities to cut other costs (Weilgmann et al. 2009). Manufacturers not only subcontract grindings or the production of liquid chocolate to processors, but even the manufacturing of the final chocolate products. An example of the outsourcing of final products is Nestlé, which handed over Lion Bar production to Barry Callebaut (Franchise Help 2014).

The last group are the artisanal chocolatiers and gourmet chocolate processors, many of which are small and medium-sized confectionery companies. There is little data available about this group. Garrone, Pieters, and Swinnen (see Chapter 5, this volume) report that, in Belgium, more than 90 per cent of the chocolate companies are small scale: Fromm also argues that small artisanal producers remain important in the Swiss chocolate market (see Chapter 4, this volume).

11. The Second Chocolate Boom

Figure 2.1 clearly shows that cocoa production has increased exponentially since 1990. This growth in cocoa production follows a rapidly growing demand in consumer markets and the reduction of cocoa taxation in developing countries, in particular Africa (see section ‘Restructuring of the Cocoa–Chocolate Value Chain in Recent Years’). Table 2.9 illustrates how chocolate consumption has increased rapidly since 2004 (there is no representative consumer data before the year 2000, and after 2013 data was not available for all countries).²⁷

marketing and branding. In 2009 the annual marketing budget of the six largest companies amounted to about US\$86 million (Weilgmann et al. 2009).

²⁷ Cocoa and chocolate consumption is more difficult to measure than cocoa production because ‘consumption’ can refer to various intermediate or final products along the value chain, and chocolate is used in various final consumption products. For example, major cocoa grinding countries re-export much of their production of cocoa liquor, butter, cake, and powder. Another indicator that is often used to measure cocoa consumption at a country level is ‘apparent domestic cocoa consumption’, which is the amount of cocoa beans used for the confectionery of the final chocolate goods (food, cosmetics, etc.) that are actually consumed in a country or region (ICCO 2012) (see Poelmans and Swinnen 2015).

In Tables 2.9–2.13 we use data on ‘chocolate confectionery’ as data on ‘all chocolate manufacturing’—i.e. according to Caobisco ‘chocolate confectionery’ (on average 80 to 90% of the total) and ‘other chocolate products’ (10 to 20% of the total) are not available for all regions over a longer time frame. Caobisco defines ‘chocolate confectionery’ as: unfilled chocolate; filled tablets and bars; bonbons, pralines, and other chocolate confectionery; sugar confectionery containing cocoa; and white chocolate; and ‘other chocolate products’ as a.o. spreads containing cocoa and sweetened cocoa powder (preparations), ready for retail use (Caobisco 2013). Euromonitor further divides the ‘chocolate confectionery products’ by product type: countlines; tablets; bagged

Table 2.9 Chocolate confectionary retail consumption (in million tons and million US\$), between 2004 and 2018

Year	Volume (in million tons)	Value (in million US\$)
2004	4.8	52.0
2013	5.5	83.7
2018	5.6	82.9

Source: Euromonitor International (2019).

Note: Data for all countries was not available. Countries included here are: *for Western Europe:* Belgium, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, Turkey, UK; *for Eastern Europe:* Poland, Romania, Russia; *for North America:* USA, Canada; *for Latin America:* Brazil, Chile, Colombia, Peru; *for MEA:* Egypt, Morocco, South Africa, UAE and *Australia.*

Both retail volume and retail value have increased between 2004 and 2018. Although data was not available for all countries, the available data gives an indication of the evolution of chocolate confectionary retail consumption throughout time (Table 2.9, 2.10 and 2.11).

The growth in consumer markets has been particularly strong in emerging and (rapidly growing) developing countries. The growth in chocolate retail volume and value was the largest in Asia Pacific (+ 167 per cent in volume and + 369 per cent in value) and Latin America (+ 62 per cent in volume and + 184 per cent in value), followed by Middle East and Africa (+ 58 per cent in volume and + 92 per cent in value) and Australasia (+ 58 per cent in volume and + 83 per cent in value). In Europe, confectionary retail volume and value increased (+ 17 per cent in volume and + 37 per cent in value between 2004 and 2018), but there was stronger growth in Eastern Europe (+ 33 per cent and + 109 per cent respectively) than in Western Europe (+ 11 per cent and + 22 per cent respectively). North America had a negative growth in volume between 2004 and 2018 (-6 per cent) and a positive growth in value (+ 59 per cent).

straightlines; boxed assortments; seasonal chocolate; chocolate with toys; alfajores; and other chocolate products (Euromonitor International 2013a).

Table 2.10: Chocolate Confectionary Retail Consumption by Region (in 1000 tons and million US\$) and their respective shares of total volume/value in 2004, 2013 and 2018

Countries	2004				2013				2018				Volume growth 2004 - 2018 (%)	Value growth 2004 - 2018 (%)
	Volume (in 1000 tons)	Share (in %)	value (in million US\$)	Share (in %)	Volume (in 1000 tons)	Share (in %)	value (in million US\$)	Share (in %)	Volume (in 1000 tons)	Share (in %)	value (in million US\$)	Share (in %)		
World	4,770	100	52,011.61	100	5,472	100	83,743.64	100	5,597	100	82,936.33	100	+17	+59
Total Europe	2,606	55	32,722.95	63	3,016	55	47,590.08	57	3,056	55	44,803.10	54	+17	+37
<i>Western Europe</i>	1,870	39	27,207.39	52	2,021	37	34,384.80	41	2,080	37	33,284.52	40	+11	+22
<i>Eastern Europe</i>	736	15	5,515.56	11	996	18	13,205.28	16	977	17	11,518.58	14	+33	+109
North America	1,655	35	13,999.23	27	1,509	28	19,873.94	24	1,556	28	22,249.48	27	-6	+59
Latin America	213	4	1,757.16	3	376	7	6,756.95	8	344	6	4,987.98	6	+62	+184
Asia Pacific	158	3	1,524.92	3	373	7	5,850.65	7	422	8	7,147.88	9	+167	+369
Australia	73	2	1,228.65	2	99	2	2,301.48	3	116	2	2,253.57	3	+58	+83
Middle East and Africa	65	1	778.71	1	98	2	1,370.54	2	103	2	1,494.30	2	+58	+92

Note: Data for all countries was not available. Countries included here are: Western Europe: Belgium, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, Turkey, UK; Easter Europe: Poland, Romania, Russia; North America: USA, Canada; Latin America: Brazil, Chile, Colombia, Peru; Australia; MEA: Egypt, Morocco, South Africa, UAE.

Source: Euromonitor International (2019).

Table 2.11: Selected Countries Chocolate Confectionary Retail Consumption (in 1000 tons and million US\$) and their respective shares of total volume/value in 2004, 2013 and 2018

Countries	2004				2013				2018				Volume growth 2004 - 2018 (%)	Value growth 2004 - 2018 (%)
	Volume (in 1000 tons)	Share (in %)	value (in million US\$)	Share (in %)	Volume (in 1000 tons)	Share (in %)	value (in million US\$)	Share (in %)	Volume (in 1000 tons)	Share (in %)	value (in million US\$)	Share (in %)		
US	1,550.1	32.5	12,438.34	23.9	1,388.4	25.4	17,141.84	20.5	1,425.4	25.5	19,612.39	23.6	-8	58
Germany	719.9	15.1	7,547.88	14.5	656.9	12.0	8,280.30	9.9	655.6	11.7	8,652.50	10.4	-9	15
Russia	570.8	12.0	4,145.55	8.0	747.4	13.7	10,466.30	12.5	718.8	12.8	8,726.02	10.5	26	110
United Kingdom	389.7	8.2	8,046.75	15.5	475.7	8.7	9,567.44	11.4	479.0	8.6	8,672.72	10.5	23	8
France	251.5	5.3	4,377.95	8.4	274.5	5.0	5,926.08	7.1	278.0	5.0	6,010.80	7.2	11	37
Brazil	168.8	3.5	1,281.75	2.5	313.1	5.7	5,608.10	6.7	274.5	4.9	3,739.87	4.5	63	192
Poland	137.5	2.9	1,176.48	2.3	209.7	3.8	2,303.15	2.8	212.1	3.8	2,291.15	2.8	54	95
Italy	114.3	2.4	2,098.88	4.0	118.2	2.2	2,566.44	3.1	111.3	2.0	2,288.00	2.8	-3	9
Canada	104.5	2.2	1,560.89	3.0	121.0	2.2	2,732.10	3.3	130.2	2.3	2,637.09	3.2	25	69
Netherlands	80.8	1.7	794.00	1.5	83.6	1.5	1,080.16	1.3	83.8	1.5	1,023.47	1.2	4	29
Spain	76.3	1.6	926.65	1.8	91.3	1.7	1,291.61	1.5	102.8	1.8	1,371.72	1.7	35	48
Australia	73.1	1.5	1,228.65	2.4	99.1	1.8	2,301.48	2.7	115.7	2.1	2,253.57	2.7	58	83
Turkey	66.0	1.4	612.69	1.2	137.0	2.5	1,607.34	1.9	177.5	3.2	1,311.84	1.6	169	114
Switzerland	65.9	1.4	1,295.87	2.5	72.2	1.3	1,949.21	2.3	72.0	1.3	1,923.04	2.3	9	48
Belgium	58.8	1.2	702.69	1.4	58.4	1.1	963.77	1.2	59.9	1.1	942.38	1.1	2	34
China	58.3	1.2	683.16	1.3	130.3	2.4	2,895.21	3.5	125.9	2.2	3,305.58	4.0	116	384
Sweden	46.6	1.0	804.01	1.5	53.2	1.0	1,152.46	1.4	59.7	1.1	1,088.06	1.3	28	35
South Africa	37.9	0.8	504.03	1.0	48.4	0.9	647.82	0.8	48.2	0.9	761.20	0.9	27	51
Indonesia	36.2	0.8	315.77	0.6	78.4	1.4	1,007.90	1.2	84.0	1.5	919.11	1.1	132	191
India	31.2	0.1557	257.74	0.5	116.2	2.1	1,273.38	1.5	151.9	2.7	2,044.55	2.5	386	693
Romania	27.7	0.6	193.53	0.4	38.6	0.7	435.83	0.5	45.9	0.8	501.41	0.6	65	159

Chile	25.3	0.5	265.50	0.5	36.5	0.7	684.31	0.8	40.3	0.7	812.68	1.0	59	206
Philippines	19.3	0.4	127.11	0.2	25.9	0.5	313.29	0.4	33.7	0.6	375.53	0.5	75	195
Egypt	13.2	0.3	136.16	0.3	25.2	0.5	351.85	0.4	22.0	0.4	217.16	0.3	67	59
Colombia	10.2	0.2	123.56	0.2	12.6	0.2	259.87	0.3	13.8	0.2	224.76	0.3	36	82
Malaysia	9.5	0.2	94.52	0.2	13.7	0.3	198.09	0.2	16.1	0.3	278.93	0.3	70	195
Morocco	8.8	0.2	67.52	0.1	9.9	0.2	108.90	0.1	10.7	0.2	120.81	0.1	21	79
Peru	8.3	0.2	86.36	0.2	14.3	0.3	204.66	0.2	15.3	0.3	210.68	0.3	84	144
United Arab Emirates	5.3	0.1	71.00	0.1	14.8	0.3	261.97	0.3	22.1	0.4	395.13	0.5	314	457
Thailand	3.8	0.1	46.61	0.1	8.0	0.1	162.78	0.2	10.7	0.2	224.18	0.3	184	381

Source: Euromonitor International (2019).

Table 2.12 Chocolate confectionary consumption in kg/capita by region

	2004	2013	2018	Growth between 2004 and 2018 (in %)
	Volume (in kg/capita)	Volume (in kg/capita)	Volume (in kg/capita)	
Western Europe	4.50	4.61	4.62	+3
Eastern Europe	3.62	4.93	4.83	+34
North America	5.10	4.30	4.27	-16
Latin America	0.79	1.27	1.11	+40
Asia Pacific	0.06	0.12	0.13	+132
Australia	3.63	4.28	4.63	+27
Middle East and Africa	0.42	0.53	0.51	+20

Note: Data for all countries were not available. Countries included here are: Western Europe: Belgium, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, Turkey, UK; Eastern Europe: Poland, Romania, Russia; North America: USA, Canada; Latin America: Brazil, Chile, Colombia, Peru; Australia; MEA: Egypt, Morocco, South Africa, UAE.

Source: Euromonitor International (2019).

However, the rich countries are not only losing market share, their consumption is actually declining in volume. For example, the retail volume declined in Germany (-9 per cent) and the USA (-8 per cent). In contrast, emerging countries such as Brazil, Russia, India, and China (BRIC) saw rapid growth and increasing share in total retail. From these four, the growth in chocolate retail was especially strong in India (+ 386 per cent in volume and + 693 per cent in value) and China (+ 116 per cent in volume and + 384 per cent in value), followed by Brazil (+ 63 per cent in volume and + 192 per cent in value) and finally Russia (+ 26 per cent in volume and + 110 per cent in value). The main reason for the strong growth in the BRIC countries and also in the Middle East and Africa is strong economic growth, rising incomes, and a youthful population—as is discussed and analysed in greater detail in Chapters 19, 21 and 22 in Part 5 of this book.

These figures clearly show that a convergence is occurring, with chocolate consumption stagnating in richer countries and consumption growing fast in poorer countries. However, at this point, the consumption levels are still far apart (except for the growing countries in Eastern Europe).

In 2018, Eastern Europe, Western Europe, Australasia, and North America had similar chocolate consumption levels in kilogram per capita,

with 4.8, 4.6, 4.6 and 4.3 kg/capita respectively (Table 2.12). Switzerland is the country with the highest chocolate consumption per capita in 2017 (8.8 kg/capita), followed by Austria (8.1 kg/capita), Germany (7.9 kg/capita), the UK (7.6 kg/capita) and Sweden (6.6 kg/capita) (Table 2.13 and Figure 2.3). Consumption is much lower in the southern European countries like Greece (2.6 kg/capita), Italy (2.4 kg/capita), Spain (2.0 kg/capita) or Portugal (1.1 kg/capita). In Eastern Europe, the per capita consumption level increased from 3.6 kg per capita in 2004 to 4.8 kg per capita in 2018, but the other growing regions are still far behind. Despite strong growth, in China and India, chocolate consumption per capita was still much lower, at 0.1 kg per capita and 0.07 kg per capita in 2010 and 0.2 kg per capita and 0.1 kg per capita in 2014/2015 respectively.

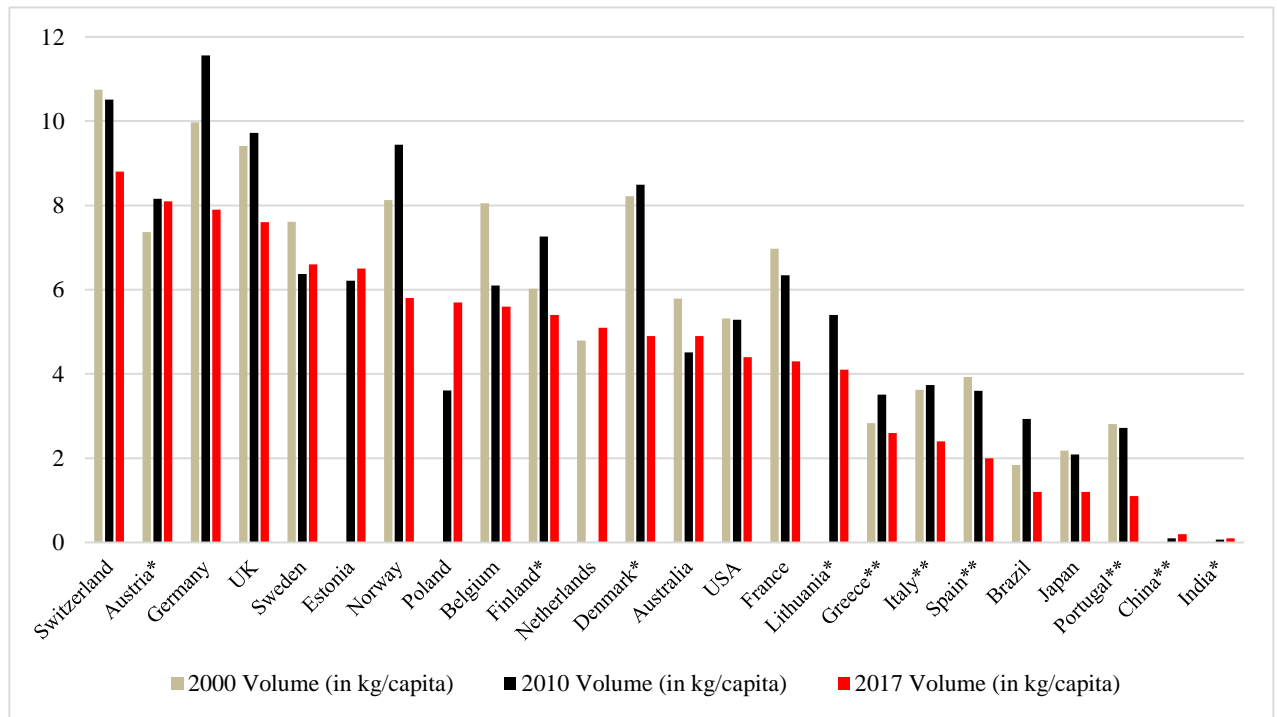
Table 2.13 Chocolate confectionary consumption in kg/capita in some selected countries

	2000 (kg/capita)	2010 (kg/capita)	2017 (kg/capita)	Growth between 2000 and 2010 (in %)	Growth between 2010 and 2017 (in %)	Growth between 2000 and 2017 (in %)
Germany	9.97	11.56	7.90	16	-32	-21
Switzerland	10.75	10.51	8.80	-2	-16	-18
UK	9.41	9.72	7.60	3	-22	-19
Norway	8.13	9.44	5.80	16	-39	-29
Denmark*	8.22	8.49	4.90	3	-42	-40
Austria*	7.37	8.16	8.10	11	-1	10
Finland*	6.02	7.26	5.40	21	-26	-10
Sweden	7.61	6.37	6.60	-16	4	-13
France	6.97	6.34	4.30	-9	-32	-38
Estonia	n.a.	6.21	6.50	/	/	/
Belgium	8.05	6.10	5.60	-24	-8	-30
Lithuania*	n.a.	5.40	4.10	/	-24	/
USA	5.32	5.29	4.40	-1	-17	-17
Australia	5.79	4.51	4.90	-22	9	-15
Italy**	3.62	3.74	2.40	3	-36	-34
Poland	n.a.	3.61	5.70	/	/	/
Spain**	3.93	3.60	2.00	-8	-44	-49
Greece**	2.83	3.51	2.60	24	-26	-8
Brazil	1.84	2.93	1.20	59	/	-35
Portugal**	2.81	2.72	1.10	-3	-60	-61
Japan	2.18	2.09	1.20	-4	/	/
Netherlands	4.79	n.a.	5.10	/	/	6
China**	n.a.	0.10	0.20	/	100	/
India*	n.a.	0.07	0.10	/	43	/

Note: Countries with * indicate 2014 data was used and ** indicate 2015 data was used as more recent data was not available.

Source: ICCO (2010, 2012), Caobisco (2013), Ascarelli (2015) and Statista (2018).

Figure 2.3 Chocolate consumption per capita in selected countries 2000, 2010 and 2017 (in kg per capita per year)



Note: For some countries (e.g. countries that only entered the EU after 2000 or developing countries, such as India and China) no data was available for the year 2000.

Source: ICCO (2010, 2012), Caobisco (2013), Ascarelli (2015) and Statista (2018).

10. Conclusion

This chapter has documented major changes in the cocoa–chocolate industry and value chain through history.

The cocoa plant originated around 3000 BC. It was a drink and a monetary medium of exchange in South and Central America under the Olmec, the Mayas, and Aztecs (3000 BC–AD 1500). After the Spanish discovery of the New World, the cultivation of cocoa beans and the consumption and production of drinkable chocolate spread over the world during the early modern times (1500–1800). In the Age of Enlightenment (eighteenth century) the popularity of the cocoa drink declined as it became linked to the clergy and elite, in contrast with other drinks of that time: coffee and tea. However, globalization and scientific discoveries from the sixteenth through to the nineteenth century transformed the cocoa and chocolate industry. Scientific discoveries and the Industrial Revolution in the nineteenth and twentieth centuries led to eatable chocolate, made

production possible on a larger scale and at lower cost, and raised incomes such that chocolate became also available for the common people. The twentieth century was characterized by a large increase in cocoa and chocolate production and consumption, and shifts in consumption patterns. Growth in the early twentieth century was concentrated mostly in North America and Western Europe, as a result of rapid income growth in these regions. The recent growth in consumption (in the 2000s) has been particularly strong in emerging and (rapidly growing) developing countries.

Today, most cocoa beans are produced in three regions: Africa, Asia, and South America, with eight countries (the Ivory Coast, Ghana, Indonesia, Cameroon, Nigeria, Brazil, Ecuador and Dominican Republic) that accounted together for 90 per cent of the world cocoa production. In past centuries, most cocoa beans were exported and processed into intermediate products in the developed world. However, by now almost half of all grindings is done in the cocoa-producing countries, which are gaining a larger part of the value of the finished product.

One of the key features of the cocoa chain is the growing domination of a few multinationals in trading, processing, and manufacturing activities. The production of finished chocolate products takes mostly place in the developed world and is done in a relatively few large companies and many small chocolatiers. In 2016, the largest four manufacturers— Mars Inc., Mondelez International Inc., Nestlé SA, and Ferrero Group—had a joint share of around 50 per cent of total world chocolate production.

There are many important issues for the future. One is the question of whether the rapid growth of chocolate consumption in emerging markets will lead to a global shortage of cocoa—and rising prices—an issue addressed by Christopher L. Gilbert (Chapter 16, this volume), and in Chapters 19–22 on emerging markets in Part 5 of the book.

Another global development is the spread of various standards on production of cocoa. Over time, non-governmental organizations (NGOs) launched initiatives such as Fairtrade and UTZ, but large commercial players are now also increasingly introducing such standards. These standards apply to various aspects of the cocoa production, including (child) labour use and environmental sustainability criteria. These issues are addressed in Chapters 11, 12, and 14.

Yet another important trend is the switch in consumer attitudes regarding the health impacts of chocolate. While, for much of history, chocolate (and cocoa drinks more generally) were considered a healthy food and a source of nutrition, in recent years growing chocolate consumption has become associated with health concerns—issues addressed in Chapters 7 and 8.

Finally, an interesting observation is that, through history, chocolate has also played a role which was not directly related to consumption. In the ancient American empires cocoa beans were used as currency. Later on, chocolate played an important role as presents and gifts—and some chocolates have been explicitly developed and designed for this.

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