THE FORMS OF INTERNATIONAL SPECIALIZATION AND ENSUING ECONOMIC FLOWS. CASE STUDY ON THE COCOA PRODUCTS

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Abstract
The development of the world economy is primarily determined by the process of international specialization. The production of the specialized economic branches is usually distinguished by high quality; therefore, it is demanded in the world market. Since each country specializes in the production of certain types of products and their volume exceeds the demand in the domestic market, the need to export them emerges. International specialization aims to adapt the national economic potential, the domestic economy to the requirements of the world market. Hence as result of such specialization, international trade flows take place, that strengthen the economic interdependencies between countries.
The global chocolate market size was valued at USD 130.56 billion and is considerably growing. The cocoa beans are the essential ingredient for chocolate, cocoa products and a wide range of other food products. Global cocoa production is expected to reach 4.8 million tons in the 2020/2021 crop year. Lately, the price of cocoa has been well over two U.S. dollars per kilogram.

Keywords: *international economic flows, international specialisation, cocoa world market, cocoa products, chocolate industry, traditional chocolate, artificial chocolate, intellectual property, product quality and safety regulations, the economics of chocolate*

1. Introduction

The Structure of the World Economy consists of The World Markets and The Subjects of the World Economy, which are the nation-states, transnational companies, etc.

One of the features of the World Economy is international specialization. Specialization refers to the tendency of countries to concentrate on the production of certain goods and services which they trade for other ones, rather than producing all goods on their own. Countries produce a surplus of the product in which they specialize and trade it for a different surplus good of another country. The specialization of countries in international trade reveals their comparative advantages and disadvantages. As a result of international specialization, international economic and trade flows occurs.

International trade plays an important role in every country's economy. The balance of trade, or the amount of imports versus exports, drives the evolution of the country's GDP and ultimately impacts the public's perception of the health of economy. More importantly, international trade opens up untapped markets for sellers and increases productivity in the home country as workers are employed to make the goods to be sold globally.

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The Gross Domestic Product is strongly impacted by international trade. If a country imports more than it exports, its GDP will likely decrease over time as the country becomes reliant on imported goods and loses the ability to employ its own citizens in the production of goods. The role of international trade in the economy is to find a balance between importing and exporting that keeps the country's economy strong and its standard of living high.

The objectives of this research are to see, based on a real example, notably chocolate and other cocoa products, how the nation-states and transnational companies producing cocoa products interact among themselves, and how the international economic flows of chocolate impact the economies of the states.

2. Summary literature review

This research is part of the economic literature on cocoa production. Therefore, it also targets the analysis of the factors determining the insufficient cocoa production and supply in the world market. In this regard, most of the research done takes into consideration the current conditions of farmers in the plantation such as agricultural technique and social development. We have sought to analyse the impact of cocoa production in the short and long run by investigating its historical, current, and forecasted supply trends.

To conduct our research, we relied on the works of well-known experts in the field such as Daniel A. Gross, Johan Swinnen, Tom Ravenscroft, Thomas A. Firey, the Moldovan author Ana Popa, and others.

3. Results and discussion

THE KEY SUBJECTS OF THE WORLD ECONOMY DEALING WITH COCOA PRODUCTS

The top four nation-states responsible for the production of chocolate are the United States, Germany, Switzerland, and Belgium. Western Europe, North America and Asia are the top 3 regions that account for over 70% of sales worldwide. The United States, Germany, Switzerland and Belgium are the top four countries responsible for the production of chocolate and account for nearly 65% of the total world chocolate production [9]. It is estimated that, while Western Europe accounts for approximately 35% of total world chocolate production, the U.S. accounts for an additional 30% [21]. Interestingly, none of the major producers of chocolate are major sources of cocoa, and none of the major cocoa-producing countries are major chocolate manufacturing centres.

1. **The United States** is one of the top producers of high-quality chocolates, with U.S. chocolate manufacturers bringing in over $20 billion annually in retail sales. The largest chocolate company in North America – and one of the most recognized chocolate brands worldwide—is the Hershey Foods Corporation, more commonly known as Hershey’s. The Hershey Company is an American multinational company and one of the largest chocolate manufacturers in the world. It also manufactures baked products, such as cookies and cakes, and sells beverages like milkshakes, and many more that are produced globally. In 2019 its revenue hit US$8.0 billion and its operating income - US$1.275 billion [11].
2. **German** chocolate manufacturers represent nearly a $10 billion per year industry. Stollwerck Chocolates Company is one of the most famous chocolate manufacturers in the country; it also has production plants in Belgium and Switzerland. In 2011 Stollwerck had five factories in Belgium, Germany and Switzerland and employed 1700 staff. Its annual production was around 100,000 tonnes of chocolate [10].
3. **Switzerland** is well-known for its chocolates and principal chocolate manufacturers. World-renowned chocolate brands that originated in Switzerland include Nestle, Toblerone, Lindt, and Sprungli. Switzerland also has the highest per capita rate of chocolate consumption in the

world. Total annual revenue from chocolate sales is estimated to be $14 billion. Nestlé S.A. is the largest food company in the world, measured by revenue and other metrics, since 2014. In 2018 its revenue hit CHF91.43 billion. It ranked No. 64 on the Fortune Global 500 in 2017 and No. 33 in the 2016 edition of the Forbes Global 2000 list of largest public companies [7].

4. **Belgium** is also world-renowned for its chocolates, and it is a major chocolate manufacturing centre. One of the most famous chocolate companies in the world, Godiva, makes its home in Brussels. Belgian chocolatiers generate annual sales of approximately $12 billion. Godiva owns and operates more than 600 shops in the United States, Canada, Europe, and Asia and is available via over 10,000 specialty retailers [5].

Some examples of Multi-National Companies in the chocolate industry are [22]:

Mondelēz International (USA) - one of the largest snack companies in the world with global net revenues of $25.9 billion and net earnings of $3.4 billion in 2018. Product Range: Oreo, belVita and LU biscuits; Cadbury Dairy Milk, Milka and Toblerone chocolate.

Ferrero TNC (Italy) - its roots are Italian and its hazelnuts Turkish, but Nutella gets its cocoa from Nigeria, its sugar from Brazil and its palm oil from Malaysia, as well as having factories in Australia, South America, Western Europe, Russia and Canada. Product Range: Ferrero Rocher, Raffaello, Mon Cheri, Kinder, Nutella.

Nestlé SA (Switzerland) - a Swiss multinational food and drink processing conglomerate corporation headquartered in Vevey, Vaud, Switzerland. It is the largest food company in the world, measured by revenue and other metrics, since 2014. Product Range: KitKat, Milkybar, Quality Street, Aero, Smarties, Garoto.

THE ECONOMICS OF CHOCOLATE

Cocoa and chocolate have a long history in Central America but a relatively short history in the rest of the world. “For thousands of years, tribes and empires in Central America produced cocoa and consumed drinks based on it. It was only when the Spanish arrived in those regions that the rest of the world learned about it. Initially, cocoa production stayed in the original production regions, but with the local population decimated by war and imported diseases, slave labour was imported from Africa.” [6].

The ‘First Incredible Chocolate Boom’ happened at the end of the 19th and early 20th century. The industrial revolution turned chocolate from a drink to a strong nourishment full of vitality, energy and raised the salaries of the destitutes. Consequently, chocolate consumption expanded quickly in Europe and North America.

As the ubiquity of chocolate developed, production has spread over the world to fulfil the expanding demand. Surprisingly, cocoa only arrived in West Africa within the early 20th century. But by the 1960s West Africa overwhelmed worldwide cocoa production, and in specific, Ghana and Ivory Coast have ended up the world’s driving cocoa producers and exporters.

Not incidentally, given the development within the cocoa trade and chocolate consumption, governments have mediated within the markets through various sorts of controls. The early directions (within the 16th-19th centuries) centred generally on extracting revenue from cocoa production and trade through, for instance, taxes on cocoa trade and the sales of monopoly rights for chocolate production [4].

Later controls have centred more on quality and safety. With the developing demand for chocolate in the 19th century, chocolate manufacturers substituted cocoa with cheaper raw materials, going from different starchy items and fats to harmful ingredients. Scientific inventions of the 18th and 19th centuries permitted way better testing of the chocolate ingredients. Public outrage against the use of unhealthy ingredients, led to a series of safety regulations on which specific ingredients were not allowed in chocolate – and in countries such as France and Belgium also in a legal definition of ‘chocolate’ [4].

At present, a few nations, such as Switzerland and Belgium are deemed to maintain prestigious traditions in chocolate production. Yet, perceptions are not always justified.

Until 1960, Belgium imported more chocolate than it traded. Since then its "Belgian chocolates" have prevailed in the world – whereas the world has taken over the Belgian chocolate (companies). Most "Belgian chocolates" are now owned by international holdings – and a sizeable amount is produced outside the country [4].

Besides, buyer impressions of 'quality' are strongly affected by their experiences with local chocolate – this comprise the smoothness of Swiss chocolate from long conching, the milkiness of British chocolate, and the inclination of American customers for chocolate that Europeans consider inferior.

The world is currently encountering a 'Second Awesome Chocolate Boom'. Quickly developing request is not coming from 'the North', but from rapidly rising nations, such as China, India, and Africa. The phenomenal economic expansion of the past decades, and the related urbanization have turned China and India into major markets for chocolate. While consumption is highest in China, and the growth is strong, the country with definitely the highest growth rates in chocolate consumption is India. In addition, significant African growth of the past 15 years is now also translating into growing chocolate consumption on the continent where most of the cocoa beans are produced [6].

FORMS OF INTERNATIONAL SPECIALIZATION AND INTERNATIONAL TRADE FLOWS CONCERNING CHOCOLATE AND OTHER COCOA PRODUCTS

Forms of international specialization				
Inter-sector:	**Inter-branch:**	**Intra-branch:**		**Intra-firm:**
• *agrarian products* (cocoa beans – Brazil, Nigeria, Indonesia, Cameroon, Ghana, Ecuador)	exchanging Oreo Biscuits (USA product) for Schogetten Chocolate (German product)	• *the vertical type:* exchanging Milk Chocolate Alenka (Russian product) for Ferrero Rocher (Italian product)	• *the horizontal type:* exchanging Milka Chocolate (American product) for Nestle Milk Chocolate (Switzerland product)	Manufacturing Merci Chocolate by the German MNC August Storck company; Manufacturing Côte d'Or Chocolate by the Belgian MNC Kraft Foods company.

Figure 1. *Forms of international specialization concerning chocolate and other cocoa products*

Source: elaborated by authors based on their own observations and analysis

Almost all of the world's cocoa is grown in developing countries and consumed by industrialized countries. The top four producers – Ivory Coast, Nigeria, Ghana and Indonesia— are all in the bottom half of nations by per-capita GDP.

Cacao trees, which produce the bean, grow only in hot and humid conditions. Most of the world's cacao comes from right along the equator; practically none comes from the United States. Yet the United States is one of the world's largest chocolate producers, using cocoa beans imported from Ivory Coast, Ghana, Indonesia, Trinidad, and elsewhere. Nine of the top ten countries ranked by chocolate consumed and produced are in Europe. Lower-cost imports allow domestic producers to be more productive, increasing GDP and domestic employment [20].

INTERNATIONAL KNOW-HOW AND INTELLECTUAL PROPERTY REGARDING CHOCOLATE PRODUCTS

KitKat Intellectual Property and Technical Know-How is defined by its shape trademark (four-fingered chocolate wafer bars), recipe, the red colour of packing, and other distinct copyrights [13].

Nestle, which owns *the KitKat brand*, had been arguing the case against the owners of rival Norwegian four-fingered chocolate bar *Kvikk Lunsj* since it filed a registration with the European Intellectual Property Office in 2002. This was appealed by Cadbury and a back and forth legal case began in 2007 [13].

This decision was confirmed by the European Court of Justice in Luxembourg in 2018, which deemed that the shape of the chocolate bar was not distinctive enough to amount to a European-wide trademark. Country specific trademarks for KitKat still exist in some European countries including Germany and Italy [13].

Another example of international know-how is the trademark SA «Bucuria», which is the visit card of Moldova. Today this is the largest enterprise producing confectionery in the republic. For more than six decades the company SA «Bucuria» gives joy to the children and grown-ups, totally corresponding to the motto «Life is sweeter with us…».

The invariably high quality, the natural verified ingredients, and the widest assortment of production – these are the main components of the success of SA «Bucuria», which made the company famous not only in its country but also far away from its borders. The huge variety of denominations of candies, chocolate, marshmallow, marmalade, biscuits, many other sweets produced at SA «Bucuria» have long ago become, together with the Moldavian wines, a particular symbol of Moldova. And today, when out of the production lines of SA «Bucuria» around 37 tons of confectionery are received daily, it is difficult to believe that the history of the «sweet legend» of Moldova began in the far year 1946 from the association of several small manufactories [18].

IMPACT OF CHOCOLATE UPON ECONOMIC PERFORMANCE OF COUNTRIES

With several large multinational chocolate manufacturers in Italy, the country ranks as Europe's second-largest chocolate producer. Only 1.4% of imported cocoa beans are re-exported by Italy, while the remaining amount is processed domestically [2].

Italy's chocolate exports are estimated at around 346 thousand tonnes in 2019. That is 8.6% of the total European export volume and ranks Italy as the fifth-largest chocolate exporter in Europe. Between 2015 and 2019, Italy's exports increased in volume at an average annual rate of 6.9%. Ferrero, Elah Dufour Group, Barry Callebaut and Perugina are examples of companies with manufacturing facilities in Italy [2].

<table>
<tr><th colspan="6">Chocolate in Italy (year 2019)</th></tr>
<tr><th>Exports</th><th>Top Destination</th><th>Fastest Growing Market</th><th>Imports</th><th>Top Origin</th><th>Fastest Growing Origin</th></tr>
<tr><td>$2.13B
World RNK 3/187
RNK 51/1216</td><td>$383M
France</td><td>$10M
United Kingdom</td><td>$632M
World RNK 10/223
RNK 165/1215</td><td>$246M
Germany</td><td>$26.1M
Poland</td></tr>
<tr><th colspan="3">Economic Complexity of Italy</th><th colspan="3">Product Complexity in Chocolate</th></tr>
<tr><td colspan="3">1.4
RNK 17/157</td><td colspan="3">-0.0051
RNK 548/1029</td></tr>
</table>

Figure 2. *Main performance indicators of Chocolate Manufacturing Industry in Italy*

Source: elaborated by authors based on Italian chocolate market indexes, country's net profit and expenses [2]

China is one of the fastest-growing markets for chocolates in the world. Industry estimates indicate that the chocolate market's turnover in China will reach US$3.65 billion by 2022. Italian chocolate makers have tapped into this opportunity as Europe's largest supplier of chocolate to the Chinese market, with almost 11 thousand tonnes in 2019. Belgian chocolate makers are in second place, with 8 thousand tonnes. Italian chocolate producer Ferrero is the second-largest player in the Chinese chocolate market, after Mars [2].

In general, the market for certified chocolates is smaller in Southern Europe than in Northern Europe. But Italian consumers are showing increasing interest in sustainably sourced products.

The Italian industry for Fairtrade cocoa used an estimated 4,353 tonnes of Fairtrade-certified cocoa beans in 2018, marking a steep increase of 101% when compared to 2017. The decision of Coop Italia to only sell Fairtrade-certified chocolates illustrates this growth. The retail sales value of all Fairtrade-certified products in Italy reached €145 billion in 2018, showing an average annual increase of 13% since 2014 [2].

The organic food market in Italy is also growing. The popularity of organic certification for cocoa usually follows the general market developments for organic products. Italy is the third-largest European market for organic food, with organic retail sales reaching nearly €3.5 billion in 2018, only behind Germany and France. Between 2014 and 2018, the Italian organic market grew by 13% each year on average [2].

Italian chocolate confectionery company ICAM is a pioneer in the organic market and one of the largest global manufacturers of organic chocolate, owning premium organic chocolate brands like Vanini. Chocolate products certified as both Fairtrade and organic are also very common in Italy. Examples include the chocolate products of Otto Chocolates and Alce Nero [2].

The increasing importance of certification to promote sustainability in Italy provides an interesting entry point to exporters that have significant volumes and a wide assortment of certified cocoa. As such, promoting the sustainable and ethical aspects of your production process is becoming more and more important, for instance through certification. Examples of successful cocoa exporting companies that provide information on their sustainable production practices and certifications include CABRUCA (Brazil), Ecookim (Ivory Coast), and Grupo CONACADO (Dominican Republic) [2].

Following the drop in chocolate consumption in Switzerland over the past ten years, there were signs of stabilization in 2019. Despite continuing pressure from imports, more than 200,000 metric tons of chocolate were produced in Switzerland for the first time last year thanks to demand from abroad. The associated economies of scale are also important within Switzerland [22].

After declining significantly in previous years, domestic consumption bottomed out in 2019. The growth in export business enabled the production of Swiss chocolate to rise by 3.8% to around 200,000 metric tons, increasing sales by 2.2% to almost CHF 1.79 billion [22].

Per capita consumption in Switzerland is stabilizing. Following the decline in domestic consumption and sales of Swiss chocolate in previous years, the downward trend halted last year. Domestic sales of Swiss chocolate rose by 0.8%, increasing the associated revenues by 1.2%. The proportion of imported chocolate in domestic consumption remained at 41%. Annual per capita consumption in Switzerland also remained virtually unchanged, at 10.4 kilograms [22].

The export share of total production by Swiss chocolate manufacturers increased again and stood at 73.7% last year (2018: 72.5%). The sales volume achieved through exports increased by 5% to about 147,600 metric tons. Export sales rose by 3% and topped CHF 1 billion for the very first time. This growth was largely based on exports to countries outside the European Union. High growth rates were recorded in markets such as Canada, the US, China, the Middle East and Singapore. Nevertheless, the EU remains Switzerland's most important sales market [22].

Swiss chocolate is not only a pleasure that is popular all over the world. It is also an energy-rich and long-lasting food that is a typical component of emergency supplies. The growth in chocolate exports enables economies of scale, which also have a positive impact on the supply to the domestic market. The corresponding significance is evident in the current situation. [22]

Bucuria, Moldova's national chocolate factory shop that offers a variety of sweets from candies, chocolate, marmalade, jellies etc., export cocoa products to Russia, Romania, USA, Canada, Israel, Serbia, Italy, Spain, China, Azerbaijan, etc. “The Net Profit of Moldova's biggest confectionery producer Bucuria rose 3.2% last year to 28 million lei ($1.6 million/1.03 million euro).” [15]

Tudor Rotaru, owner of *Rifero*, a dried fruit and chocolate production line in Ialoveni, the Republic of Moldova, reported that he is now exporting sweets to Slovenia, Romania, Ireland and other markets, growing his sales from 20,000 lei in 2014 to 10 million lei in 2017 [14].

The share of Moldovan domestic exports of Chocolate and other food preparations containing cocoa to Russia represented 1,4% in the total domestic exports in year 2019 (23 million US$) [1], [17].

4. Conclusions

To conclude, there are 2 fundamental processes that determine the evolution of the world economy: world economic circular flow and international labour division, which generates international specialization and international cooperation. In its turn, international specialization is a form of division of labour between the countries, in which the increase in the concentration of homogeneous production is based on the progressive differentiation of the national production.

Prominent key market players in the global chocolate market include mainly Multi-National Companies such as Nestle, Barry Callebaut, The Hershey Company, Lindt & Sprungli AG, The Australian Carob Co, Ferrero Group, Mars, Incorporated, Meiji Holdings Co., Ltd., Arcor, and Mondelez International.

The number of players in the chocolate market is large and growing with the opportunity to generate significant revenues because of growing demand. The players in the global Chocolate market are implementing various growth strategies to gain a competitive advantage over competitors in this market.

Traditional chocolate accounted for the largest share of 99.4% of chocolate production in 2019. This can be attributed to wider penetration, popularity, and easy availability of cocoa as compared to carob, which is the raw material for artificial chocolate. Milk chocolate is the dominant variant among various traditional chocolates as it enjoys the first-mover advantage in the market [19].

Therefore, due to international specialization and international economic flows of chocolate and other cocoa products, the global chocolate market is expected to grow at a Compound Annual Growth Rate of 4.78% over the forecast period to reach a total market size of US$182.090 billion by 2025, increasing from US$137.599 billion in 2019 [19].

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