

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Economics**



**Bachelor Thesis**

**Foreign Trade of Colombia**

**Case study of coffee export**

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## BACHELOR THESIS ASSIGNMENT

Petr Čepelka

Business Administration

Thesis title

**Foreign Trade of Colombia – Case study of coffee export**

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### Objectives of thesis

The aim of my bachelor thesis is to introduce the main elements of international trade and its theories, emphasizing on how international trade is important especially for developing country such as Colombia. The first portion of the paper includes theoretical background on the fundamental factors which frame the international market. The primary purpose of the second part is to express the importance of the world coffee industry on the population in less developing countries.

### Methodology

Comparative and descriptive methods will be used in the thesis. In the first part of my thesis I use secondary data collection from books, newspapers, magazines, internet, etc. In the practical part I will mainly use descriptive statistics that will be implemented into graphs and statistical tables.

## The proposed extent of the thesis

35 – 40 pages

## Keywords

International trade, Coffee, Export, WTO, Colombia

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## Recommended information sources

GANDOLFO, G. *International finance and open-economy macroeconomics*. Berlin: Springer, 2002. ISBN 3-540-43459-3.

MACHKOVÁ, H. *Mezinárodní marketing*. Praha: Grada, 2006. ISBN 80-247-1678-.

MAITAH, M. – ČESKÁ ZEMĚDĚLSKÁ UNIVERZITA V PRAZE. KATEDRA EKONOMIKY. *Macroeconomics : issues and exercises*. V Praze: Česká zemědělská univerzita, Provozně ekonomická fakulta, 2017. ISBN 978-80-213-2748-1.

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### **Declaration**

I declare that I have worked on my bachelor thesis titled "Foreing Trade of Colombia – Case study of coffee export" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 14<sup>th</sup> March 2019

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# **Foreign Trade of Colombia – Case study of coffee export**

## **Abstract**

The aim of my bachelor thesis is to introduce the main elements of international trade and its theories, emphasizing on how international trade is important especially for developing country such as Colombia.

The first portion of the paper includes theoretical background on the fundamental factors which frame the international market. Moreover, this study explains the brief introduction to the World Trade Organization and trade theories as well. The primary purpose of the second part is to express the importance of the world coffee industry on the population in less developing countries. This paper provides an in-depth knowledge about coffee development and analyses the positive impacts that trading coffee offers.

Finally, it studies the current risks and implements an approach to overcome these challenges in the future.

**Keywords:** International trade, Coffee, Export, WTO, Colombia.

# **Zahraniční obchod Kolumbie – Případová studie vývozu kávy**

## **Abstrakt**

Cílem této bakalářské práce je vysvětlit a analyzovat hlavní pilíře mezinárodního obchodu a primárně poukázat na důležitost zahraničního obchodu s kávou v rozvojových zemích jako je Kolumbie.

První polovina práce zahrnuje teoretickou část se základními principy v mezinárodním obchodě. V práci je vysvětlena historie a význam Světové Obchodní Organizace, která patří k důležitým součástí zahraničního obchodu. Primárním cílem druhé části je analyzovat jak ovlivňuje zahraniční obchod s kávou ekonomiku v Kolumbi. Práce také obsahuje historický vývoj a důležité milníky v kavovém průmyslu.

Nicméně i kávový sektor čelí mnoha rizikům, které v budoucnosti ovlivní celosvětový obchod s kávou. I těmto rizikům se tato práce věnuje a poskytuje doporučení jak těmto rizikům čelit či předejít.

**Klíčová slova:** Mezinárodní obchod, Káva, Export, WTO, Kolumbie

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# 1 Introduction

International trade plays a significant role in the world economy, especially in these days is a role of international trade crucial. Almost every company in the world is somehow involved in foreign trade. Through world trade people, companies, countries are able to exchange goods, services, and facilities among each other. Well known American Economist Paul Samuelson claimed: *“Foreign Trade offers a Consumption possibility frontier that can give us more of all goods than can own domestic production possibility frontier”*. There is always a need for because nations have different efficiency in producing different goods. To compensate what they are not able to produce, they have to engage with other countries. In other words, not all countries do have an opportunity to produce oil nor coffee. International trade has occurred since the earliest civilizations, however, just in recent years, foreign trade has become a significant portion of GDP devoted to Export and Import.

It has been observed that international trade has a significant influence on the economic growth of a country. Being able to open the economy and trade with other countries may lead to higher economic growth such as China and India in recent years. Scientist and economists came up with two approaches on how to view foreign trade. One of the society expresses that developing countries that have followed trade liberalization policies have obtained favourable effects of globalization. On the other hand, the other group claims that international trade is responsible for unfavourable changes in developing countries. This is one of the fundamental aims of WTO, to come up with a large variety of provisions which help developing countries with opening their economies. This is the case of Colombia as well which face some challenges with international trade.

Thanks to international trade, Colombia is able to import and export commodities with other countries. The main non- agricultural products that are exported from Colombia are petroleum, crude, coal. Among agriculture commodities, coffee is the leading element. The coffee sector that is not only an essential column and powerful driving force in the economy but also a guarantee of social stability and peace. Therefore, Colombia has been the third biggest producers of coffee in the world. Over than 2 million people are directly and non-directly engaged by coffee production, mainly people who live

in rural areas where agriculture represents the only option of income. Although, in these days and in the near future the whole coffee industry will face big challenges due to many factors that will be explained. These challenges may cause harm to families and the economy in Colombia as well.

## **2 Objectives and Methodology**

### **2.1 Objectives**

The aim of my bachelor thesis is to introduce the main elements of international trade and its theories, emphasizing on how international trade is important especially for developing country such as Colombia. The first portion of the paper includes theoretical background on the fundamental factors which frame the international market. The primary purpose of the second part is to express the importance of the world coffee industry on the population in less developing countries.

### **2.2 Methodology**

Comparative and descriptive methods will be used in the thesis. In the first part of my thesis I use secondary data collection from books, newspapers, magazines, internet, etc. In the practical part I will mainly use descriptive statistics that will be implemented into graphs and statistical tables.

## **3 Literature Review**

### **3.1 International trade**

International trade is the field where microeconomics models trying to understand the international economy. Microeconomics models include demand and supply analysis of international market, firms and consumer's behavior. (Suranovic, 2012, p.8)

International trade is essentially changing commodities, inputs and technologies that promote welfare in two ways. It creates a bigger market of the country's output beyond national borders and often ensure better prices through export. Import is another way how to make available commodities, inputs and technologies that are not available in the country. However, sometimes these sources are available but only at higher prices, thus taking customers a higher level of satisfaction. (Krugman, 2012)

We can explain international trade in many ways as well as we are a part of international trade almost every day. Even just if you buy usual things such as fruit, French wine, clothes, a foreign brand of cars etc. Let's consider that all these items have come from another country; therefore, we have become part of international trade.

#### **3.1.1 Purpose of international trade**

Because every country is different from each other; therefore, we need international trade. For instance, many countries do not have resources such as oil, in consequence, countries import oil, because oil has become a necessary part of our lives. So, in the modern world, we cannot find any country that is completely self- sufficient. As professor Krugman emphasises one of the fundamental principles in international trade is that the country should buy goods from countries that have the lowest prices and sell their goods to the country that has the highest price. This is beneficial for developing countries as well, in this case, they can use their resources for export. Therefore, they can import machinery or technologies. Trading on the international market gives an opportunity to buy goods that are not available in their own country. (Krugman, 2012)

International trade has a positively influenced the economic growth in many ways. Professor Krugman express these points which have a positive impact on growth.

- The open market allows that even small entrepreneurs may have access to new technologies. So, they can maintain and improve company productivity. This is an especially important element for developing countries that do not have effectivity due to technologies.
- Developing countries have bigger trade protectionism compare to developed countries. These countries are in a good way with getting benefits that open trade offers.
- Especially products that are demanding on labour are made in countries as China, India, China and Bangladesh that have the advantage because of people. Then products as clothes or shoes are exported to more developed countries. (Krugman, 2012)

Professor of economics Douglas A. Irwin in his article about A Brief History of International Trade Policy emphasises that: “Economists have likened free trade to technological progress: although some narrow interests may be harmed, the overall benefits to society are substantial”. (ECONLIB, 2001)

Many economists look at international trade as something bad or negative for developing countries. They express their concerns about unfavourable changes in economics. On the other hand, the other group of economics claim there is no denying that international trade is beneficial for all countries. They try to show the example of India and China which are aware how to handle and manage open market. (Krugman, 2012)

### **3.1.2 Trade theories**

#### **Mercantilism**

Mercantilism is considered as the first reasonable systematic body of international trade. It is dated since the end of the 16<sup>th</sup> century until the second half of the 18<sup>th</sup> century. Mercantilist argued that the main objective in international trade is a favourable balance of trade. (ECONLIB, 2001) This theory was based on increasing wealth in a country through the volume of the currency. They argued that active trade balance leads to increasing treasure in the country’s stock. What mercantilists said was that if you want to get richer

you have to abuse another country. Thus monarch should support export; nevertheless, diminish import. (NEUMAN, 2011)

Douglas says: “export of raw material was harmful, on the other hand, export of manufactured goods was very beneficial“. In other words, import of raw material was considered as beneficial move, because the material that has to be transformed into a new form will create new jobs in the country. Although, material that is already assembled was considered as a damaging strategy. This concept will never work, because if all countries try to follow this strategy at the same time. Not every nation can just export manufactured goods and just import raw materials. That is why this concept was discourse by Adam Smith later on. (ECONLIB, 2001)

### Wealth of Nations

The main breakthrough has come with Scottish Philosopher Adam Smith that he believed that trade may be considered as desirable. The Adam's book *An Inquiry into the Nature and Causes of the Wealth of Nations*, change the approach to the whole economy.

Adam Smith was a big opponent to Mercantilism theory. Smith argued that: “The great object” of mercantilism was “to diminish as much as possible the importation of foreign goods for home consumption, and to increase as much as possible the exportation of the produce of domestic industry.” (Smith Adam, 2001) Smith found out that a trade is not a zero sum game, moreover, international market is beneficial for all countries that get involved in a trade. (Neuman, 2011)

Smith emphasized that trade is depended on specialization and division of labour. One of the most famous and crucial Smith's input was the principle of absolute advantage that was introduced in his book.



## Absolute Advantage

Author and philosopher Adam Smith stated: *“If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it of them with some part of the produce of our own industry, employed in a way in which we have some advantage”*. (Smith, 2001)

Gillespie explains Absolute advantage in his book Foundations of Economics as once one country can produce a product using fewer resources to obtain it. Therefore, the country that needs less resources is more efficient to other country. As well as country should be focused on producing products where have lower production costs, if we compare it to another country. Even having an absolute advantage in all products country might still trade because it can be beneficial due to differences in comparative advantage. (Andrew Gillespie, 2016, p. 586)

**Table 1: Absolute advantage**

	A piece of bread	A bottle of water
Country 1	10	20
Country 2	5	30

Source: Mezinárodní ekonomie, Pavel Neumann

Let's assume that we have country 1 and country 2. Producing a piece of bread costs 10 units in country 1, and 20 units to produce a bottle of water. We have the same example on the other side. When country 2 wants to make a piece of bread it costs 5 units and 30 units to produce a bottle of water. The chart shows that country 2 has an absolute advantage at producing a piece of bread, because 5 units to produce is needed. Likewise, country 1 has an absolute advantage if water is produced. Based on principle of an absolute advantage country 1 should be focused on a production linked to water. Conversely, country number 2 may concentrate on bread.

## Comparative Advantage

This theory was developed by David Ricardo who claimed that if one country is more efficient in all products than another country; hence, this country has an absolute advantage. However, it does not mean that the country that has an absolute advantage

should use just their own products. On the other hand, even for the country that has absolute advantages is trading beneficial in some way. There always be some industry where another country will have lower opportunity costs and therefore comparative advantage. (Gillespie, 2016)

Table 2: Comparative advantage

Commodities	Unit costs of production in terms of labour	
	In England	In Portugal
Clothes	4	6
Wine	8	10

Source: Gandolfo, G. International Trade Theory and Policy, p. 11

If England wants to produce clothes it costs them 4 units compared to 6 units in Portugal. As well as, producing wine in England costs 8 units of costs compared to 10 units in Portugal. Therefore, we can claim that England has absolute advantages in both stocks. Although, Portugal does not have any absolute advantage it does not mean that there is no chance for international trade. It is still possible that Portugal will be able to trade to do a comparative advantage. To find out we have to calculate it as follows: the respective price of clothes is determined by wine production  $4/8$  in England,  $6/10$  in Portugal. As a result, we obtained that clothes production is cheaper in England; however, wine production is relatively cheaper in Portugal. Hence, Portugal should be focused on wine production and England on clothes production.

### 3.2 Opportunity cost

Is the highest valued alternative given up when selecting an action. For example, the opportunity cost of studying an hour is whatever the highest valued alternative would have been for the hour spent studying. (Maitah, 2009)

### 3.3 WTO

After World War Two the United States initiated found General Agreement on Tariffs and Trade (GATT), which quickly become one of the most important trade agreement. The major countries set up GATT as a reaction to Great Depression in 1930. The main aim of

GATT was to decrease the numbers of tariffs that were created due to World War Two. “Since this contract started industrial tariffs dropped from 40 to 5 percent”, says professor Douglas in his article about International Trade Agreements. (ECONLIB, 2018)

On 1 January 1995 World Trade Organization was created to enforce GATT and other international agreements. Membership in WTO already declared 164 countries across the world, according to WTO statement. The main goal of World Trade Organization is to help the trading industry to become fair, free and predictable. As well as, it tries to resolve trade tensions between nations. (WTO,2016)

### **3.4 GDP**

Gross domestic product is the total money value of all final goods and services produced within a nation’s border during a year. (Maitah, 2009)

#### **3.4.1 GDP per capita**

Is an approximation of the value of goods produced per person in the country, equal to the country’s GDP divided by the total number of people in the country. (Maitah, 2009)

### **3.5 Export**

Economics Andrew Gillespie claims: “*the value of a country’s exports measures the value of the good and services that it sells abroad. In the case of goods, these may actually be transported abroad. ... Exports are an injection into economy and are an important element of aggregate demand*”.

Export may depend on

- Ease of access to markets
- The quality of the goods and services
- Protectionism
- Exchange rates
- Customer preferences
- Income levels abroad (Gillespie, 2016, p. 585)

#### 3.5.1.1 Ease of access to markets

Countries often try to trade their goods with countries that are close to them. These countries have similar languages; moreover, they are usually culturally close to each other. So, products and services may better fit to people with almost the same cultural values, habits, and policies. (Gillespie, 2016, p. 585)

#### 3.5.1.2 Protectionism

Protectionism occurs when a government tries to protect firms on the local market. Government has a few restrictions on how to help to domestic firms. We consider four usual approaches – an outright ban, quotas, voluntary export restraints and a tariff. In some scenarios, political situation might lead to a complete ban, that is called embargo. Once other country governments introduce some restrictions, then it may lead to reducing export of another country. (O’Sullivan, 2016, p. 39)

#### 3.5.1.3 The quality of the goods and services

Level of investments in technology, the training of staff, investment in research and development, domestic competition has a big impact on quality of products. Once companies at domestic market feel pressure from competition they start working even harder. Usually it leads to better services and good as well. If quality of goods gets better, then companies have a bigger chance to export. Not just export but have a big role on international market. (Gillespie, 2016, p. 585)

#### 3.5.1.4 Exchange rates

Exchange rates can be understood as: An exchange rate is the price of a nation’s currency in terms of another currency. (INVESTOPEDIA)

To conduct international transactions between different countries, it is essential to exchange one currency for another. Exchange rate has a direct influence on goods purchased on world markets. (O’Sullivan, 2018, p. 398)

### 3.5.1.5 Customer preferences

According to David Weedmark, customer preferences is: “defined as the subjective tastes of individual consumers, measured by their satisfaction with those items after they’ve purchased them. This satisfaction is often referred to as utility”. (BIZFLUENT, 2018)

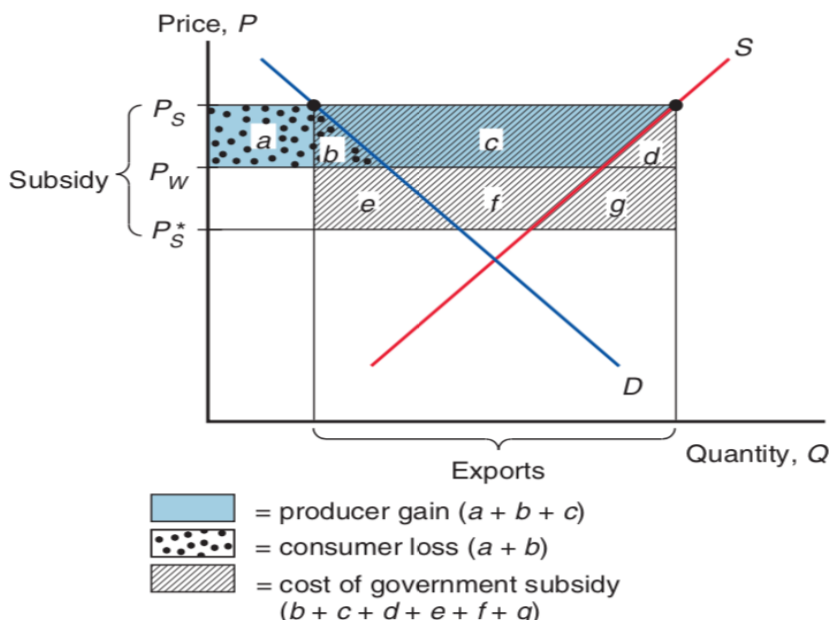
### 3.5.1.6 Income levels abroad

If income in other countries is high, then we can expect higher potential demand for products. With more disposable income people buy more products and services. Income plays a crucial role in term of export. (Gillespie, 2016)

### 3.5.1.7 Export subsidies

Basically, subsidy is a sum of money that state gives to people in the certain industry. Keeping prices of products or services lower than it would have normally been. That is one of the goals of subsidies. Once the government offers some export subsidy shippers will export goods which the domestic price exceeds the foreign price. The amount that is exceeded is the amount of subsidy.

**Figure 1: Export subsidies**



Source: KRUMAN, 2012

Price in exporting country will rise from  $P_w$  to  $P_s$ , although, the importing country drops price from  $P_w$  to  $P_s$ , the price is less than the subsidy. Customers in exporting country

are hurt, but on the other side producers gain due to money that gain from state support. Government losses as well because of money in form of subsidies. People loss in the area A and B, the firms gain in the area a,b and c, subsidies area is b,c,d,e,f, and g. Therefore we can say net welfare loss is b,d,e,f and g. Of these, *b* and *d* represent consumption and production distortion losses of the same kind that a tariff produces.

(Krugman, 2012, p. 235)

### **3.6 Import**

Imports are withdrawal and reduce the level of the aggregate demand. The quantity of import good lays factors lik the exchange rate, preferences etc. But more importantly, import is linked with domestic income. More income people have more they would spend and increase demand for goods. (Gillespie, 2016)

### **3.7 Balance of trade**

Is the difference between the value of what we export and what we import. If the value of what we export is higher than value of what we import there is balance-of- trade surplus. If value of import exceed value on import, then there is a balance-of-trade deficit.

(Maitah, 2009)

### **3.8 Definition of risk**

Regarding Robert Mckellar: *“Risk can be defined as potential harm or hazard. More precisely, risk refers to a potential event or condition which, if realised, would cause harm or damage to a business”*. (Robert Mckellar, 2010) In common usage, as a nation we see the risk as something that is unknown. When we say risk people immediately think about something negative. They relate risk with negative outcomes more than with positive ones. Loss, injury or unwelcome situation is often related to risk. Pedestrian has two options at a traffic light. Be in a hurry and save some time, it means going across the street. Although red light on traffic light and get hit by car or waited but be safe. There are two outcomes that occur one is positive and one negative. The first objective relates to a positive result saving time on the other hand second one leads to a negative outcome being hit by a car.

(T. Flouris & A. Yilmaz, 2017)

### 3.8.1 Risks in the international trade

Every future company that wants to produce anything on the local market or international market will face some form of risk. A negative risk might be defined as danger or warning to the company; otherwise, positive risk might be seen as an opportunity. (Boghean, 2015) That is why the business is always connected with some risk which can affect results of business. It is important to know that some risks are negative but some of them may be positive on business and economy as well. Giving up on international trade just because the company is afraid of uncertainty will lead to that company will not use their whole potential. Hence, the company have to analyse and find out if is it worthy for the company to go on international market where is a bigger potential for demand. (Machkova, 2014)

Therefore, awareness of risk should be in managers' awareness. Risk should be treated as a necessary part of all companies, because the main goal is not to get rid of a risk but manage it. (Beans, 2010) Risk is consider as regular part of every company. In order to be successful and sustainable company with positive results, large companies discover an approach on how to handle, work and manage risk. Risk is divided into two parts: macro and micro risk. According to their scope, impacts can change. (T. Flouris & A. Yilmaz, 2017)

Among macro risks belong

- Political risk
- Exchange risk
- Credit risk
- Transport risk
- Market risk
- Cultural risk

Political risk

Is that being significant factor in international business since the end of World War Two. Many objections that we face in international trade now are not new. They have been with us for decades.

## Exchange risk

According to Sandler: “*exchange risk is a financial risk posed by exposure to unanticipated changes in the change rate between two currencies*”.

Time to time currencies of some countries fluctuates and they can lead to unexpected gains or losses. Particular company neither government can do some steps to protect themselves again losses. Exchange rate risk is divided into three groups (Sandler, 2014)

## Transport risk

Trading over sea or due to long distance between countries that want to make a deal between them. Goods are transported via air, shipped or transported by a car. Therefore, products are exposed to many potential threats. On the way to final destination they may get lost, damaged or delayed. (T. Flouris & A. Yilmaz, 2017)

## Market risk

Market risk stands on short-term movement of market prices. Stock prices, interest rates, foreign exchange rates, commodity prices or credit spreads are foundation for market risk. Market risk can be affected by many elements, for instance, lower countries or region profit, lower demand for certain type of goods. Very strong competition has entered international market, change in household's desire etc. Market risk may have a big impact on many elements in economy such as change in prices, change in costs etc. All these things will affect the economy; therefore, government neither company have to have a plan for how to manage this risk. A strong tool of how to deal with that is through strategic marketing. (Machkova, 2015)

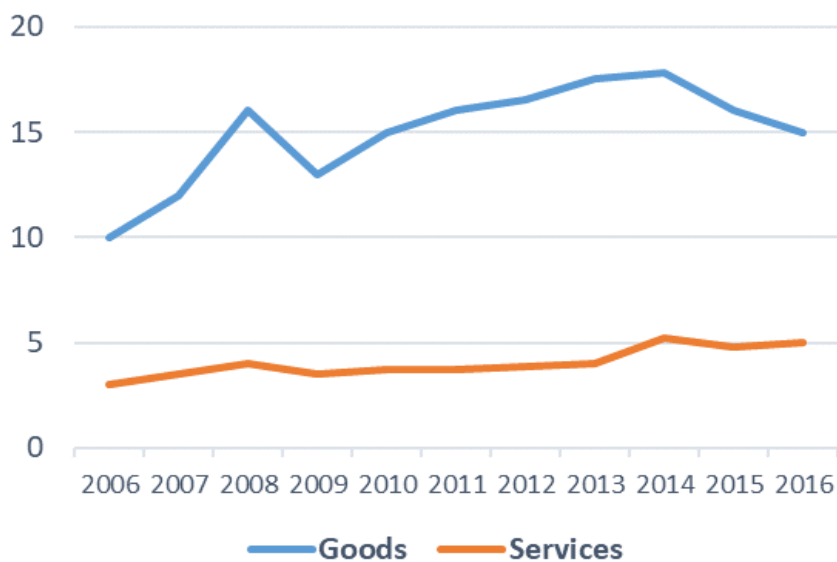


## 4 Practical Part

### 4.1 World trade

International trade largely relates to physical goods. Although, increasing, trade in services accounts for a much lower share. In 2017, world merchandise trade was 17.73 trillion US dollar, that is a big increase compared to approximately 16 trillion US dollar in 2016. Regarding to world commercial services export grew by 8 percent reaching 5.28 trillion US dollar. In 2017, the strongest growth in world was estimated since 2011.

**Figure 2: Trade of Goods and Services**  
(In Trillion US Dollar)



Source: Created by author based on World Trade Organization data

According to World Trade Organization, merchandise trade growth in 2017 was up sharply from 2016 due to world growth in GDP at market exchange rates rose to 3.0 per cent from 2.3 per cent the previous year. (WTO, 2018)

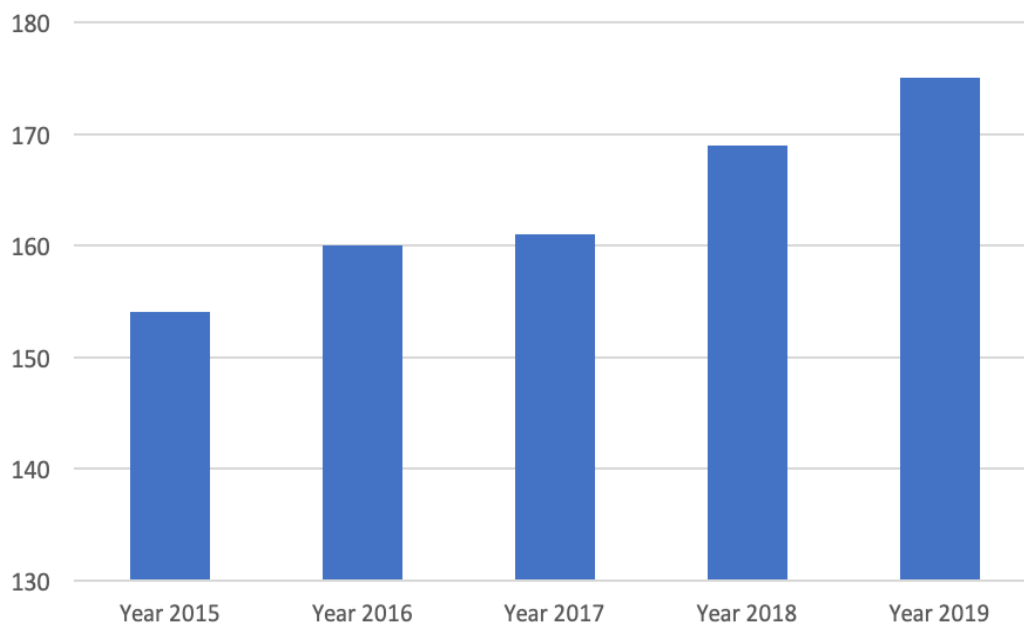
#### 4.1.1 Coffee market

After crude oil is coffee second most traded commodity in the world. Coffee has a big impact on 20-25 million families across the world, more than 50 nations produce or are kind of included of coffee chain. Regarding some estimations approximately about 100 million people are directly affected economically by the coffee trade. Especially people from developing countries where coffee trade plays a crucial role that has a big impact on

their lives. Most of the world's coffee is produced by smallholders, mainly in Africa and Latin America where coffee beans are harvested on family's fields, that are just a few hectares big. (WB, 2004)

Following figure 3 express overall production in the last five years. From the figure we can observe an increasing trend in production coffee, that probably will continue. In 2017 world production was estimated slightly over 160 million bags (each bag 60kg), moreover, economists believe the number will be increasing every year.

**Figure 3: World coffee production**  
(Million 60kg bags)



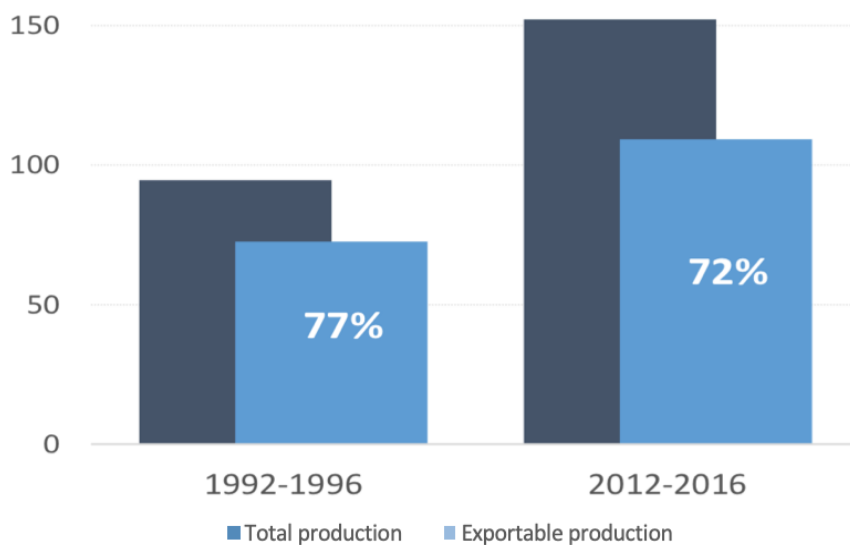
Source: ICO, International Coffee Organization

World coffee production is forecast at a record 174.5 million bags in 2019, this is up to 15.6 million bags from previous year and global consumption forecast at record 163.2 million bags. (WB, 2004)

## History of Coffee trade

Regarding to ICO, coffee market has been increasing in the last 20 years. Obviously, main producing countries consume coffee, but their main goal is to sell coffee beans abroad. Hence, coffee as a commodity is the most traded agriculture product with total value of US\$19 billion in 2016. (ICO, 2018)

**Figure 4: Share of exportable production in total production**  
(Million 60kg bags)



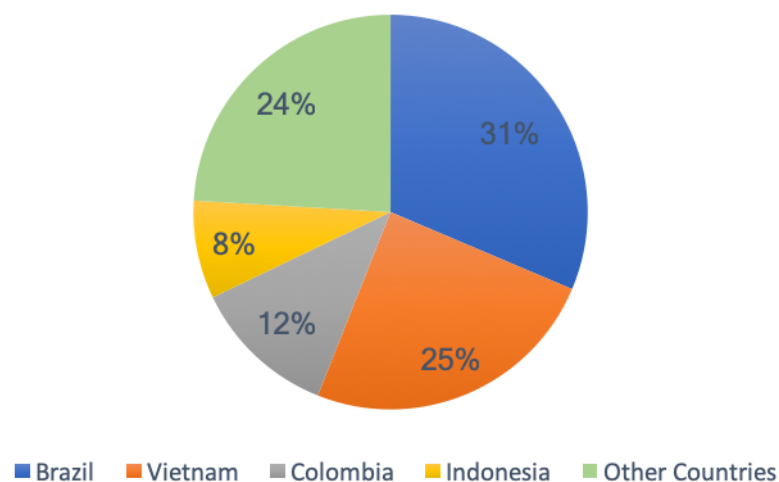
Source: ICO, International Coffee Organization

For instance, between 1992-1996 world production was estimated at 94.6 million bags on average. For 2002-2016 is estimation close to 160 million bags on average. Due to declining prices in the 1950's was created five-year International Coffee Agreement (ICA) that created quota that allowed to withdraw any coffee that exceed their own quotas. One of the aims of ICA was to engaged people to consume more coffee and try to stabilize prices. In that time the USA consumed 58 percent of world's production and after almost 40 years of being member of ICA decided to leave and do not support other countries through the agreement. As a consequence, prices radically dropped and had a negative effect on a gross national product that fell about 50 percent, in exporting countries. (STANFORD)

#### 4.1.2 Coffee producers

Over 100 million people are directly involved in coffee industry. Regarding to USDA data Brazil, Vietnam and Columbia produced slightly over 60 percent of world supply. This trend is likely to increase unless other countries start producing significantly more. (USDA, 2018) In the past, the majority of the world market was supported by Latin America. Conversely, in these days one of the most important sources of coffee production is Asia. Especially Vietnam that stands for 25 percent of whole production as is described in figure number 5.

Figure 5: Global coffee market in %



Source: Created by author based on United States Department of Agriculture

Brazil is known as the biggest producer in coffee industry for many years with 31 percent of whole market. Otherwise, we see Vietnam that becomes the key player on the market not that long ago. Their coffee industry is mainly based on Robusta. Coffee beans may be divided into two types. One of them is Arabica, that is called as premium or better quality coffee typical for Africa and Latin America. Arabica is considered as more flavourful and mild type, therefore, higher price on the market. Later on we will explain what are the special conditions that are necessary to be able to harvest good quality Arabica. On the other side Robusta, that is known as cheaper and easily harvested coffee. Typical for Brazil and Vietnam.

A couple years ago Arabica did not have a major position on the world market, especially because of the higher price, but in these days otherwise. (FORTUNE, 2002) In the following table 3 we can see main producers of Robusta coffee on the world market.

**Table 3: Top 5 biggest producers of Robusta coffee**  
(Thousands 60kg bags)

<b>Country</b>	<b>2012/2013</b>	<b>2013/2014</b>	<b>2014/2015</b>	<b>2015/2016</b>	<b>2016/2017</b>	<b>2017/2018</b>	<b>2018/2019</b>
<i>Vietnam</i>	25,600	28,658	26,350	27,830	25,600	28,000	29,000
<i>Brazil</i>	15,500	15,400	17,000	13,300	10,500	12,400	16,500
<i>Indonesia</i>	9,900	10,000	9,200	10,600	9,300	9,400	9,700
<i>Others</i>	7,686	7,159	8,048	7,894	7,171	7,345	7,575
<i>India</i>	3,660	3,372	3,810	4,075	3,617	3,683	3,700
<i>Uganda</i>	2,800	3,000	2,800	2,900	4,000	3,600	4,000
<b>Total:</b>	<b>65,146</b>	<b>67,589</b>	<b>67,208</b>	<b>66,599</b>	<b>60,188</b>	<b>64,428</b>	<b>70,475</b>

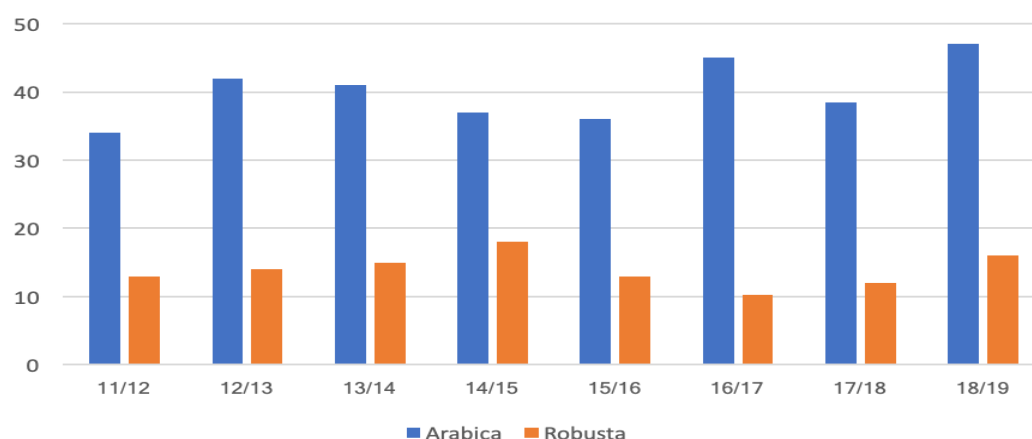
Source: Created by author based on United States Department of Agriculture

Vietnam along with Brazil are having approximately over 60% of Robusta coffee through seven last years. Regarding to ICO these numbers will be increasing. Notably in Vietnam next year Robusta production should increase by 600 000 bags to a record 29.9 million bags, due to better climate conditions and demand. (USDA, 2018)

Although, Brazil produced 10 500 million 60 kg bags in 2016/2017 this number is unequal to production of Arabica coffee that is produced in Brazil .

Brazil has been a leader in producing coffee for decades, therefore, analysis of table six portion of Arabica coffee compare to Robusta is significant. Vietnam and Brazil have been significant suppliers of Robusta coffee. Between 2012-2016 Arabica coffee represented 62 percent of global export, remaining was supplied mostly from Vietnam and Brazil in Robusta form. (ICO, 2018)

**Figure 6: Brazil production of coffee**  
(Million 60 kg bags)



Source: ICO, International Coffee Organization

Even Robusta coffee is an important part of coffee industry compare to Arabica coffee production and consumption as well is Robusta so far behind. As we can analyse from coming table three.

**Table 4: Top 5 Arabica producers**  
(Thousands 60kg bags)

Country	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
<i>Brazil</i>	42,100	41,800	37,300	36,100	45,600	38,500	46,900
<i>Colombia</i>	9,927	12,075	13,300	14,000	14,600	13,825	14,300
<i>Ethiopia</i>	6,500	6,345	6,475	6,510	6,943	7,055	7,100
<i>Honduras</i>	4,725	4,400	5,100	5,300	7,510	7,600	7,600
<i>Others</i>	25,320	23,595	21,533	20,930	22,748	23,099	23,718
<i>Peru</i>	4,300	4,250	2,900	3,500	4,225	4,375	4,400
<b>Total:</b>	<b>92,872</b>	<b>92,465</b>	<b>86,608</b>	<b>86,340</b>	<b>101,626</b>	<b>94,454</b>	<b>104,018</b>

Source: ICO, International Coffee Organization

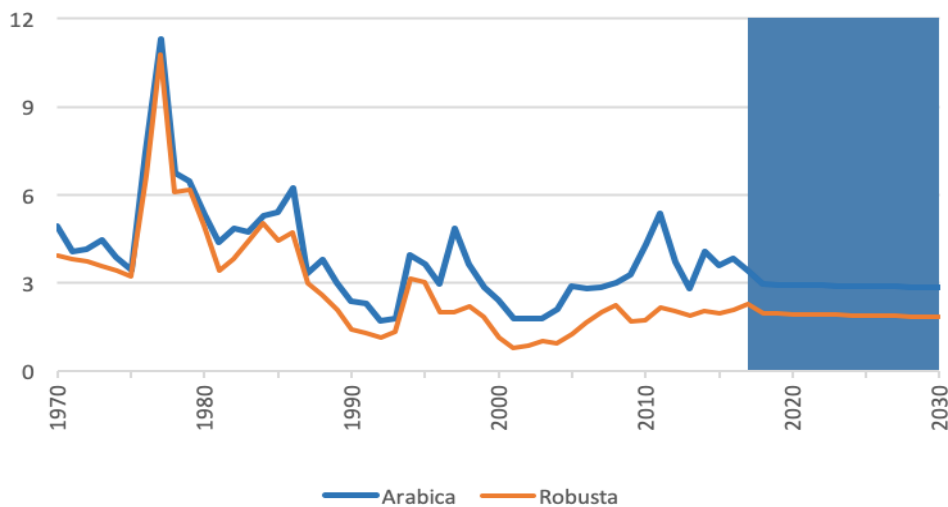
That represents Arabica production over the world. Arabica biggest producer is Brazil that is the leader of production for decades. In 2016/2017 Columbia reached a peak with

14 600 000 of 60kg bags. Forecast is nearly flat at 14.3 million bags although output remains strong on favourable growing conditions. (USDA, 2018)

### 4.1.3 Prices on international market

In the figure 7 we can observe changes in coffee prices almost over six decades. Level of prices has been changing constantly. In the middle of the nineteenth century, the world's coffee came from one species – Arabica coffee. Getting closer to the end of the nineteenth century large – scale problem occurred in Asia that was hit by leaf rust disease, which whipped whole Arabia coffee region. As a consequence, Liberica coffee was introduced on the market as a new species that should be immune to coffee leaf but failed to meet the taste requirements by the consumer. In 1879 Robusta coffee was invented as less demanding to cultivate. (KEW, 2019)

**Figure 7: Annual constant prices US dollar/kg**



Source: The World Bank, World Data Bank

Historically, coffee reached a peak in 1977, when the price was \$ 11.3 per kg. Hence, extensive defrost in Brazil in 1975, coffee supplies across the world were devastated and coffee became very expensive to buy. Between 1990 and 2000 Vietnamese planted more than million acres of plan the crop. As a result, Vietnam becomes second biggest producer in the world, so Columbia was shifted on the third position. Since 1999 the world market was supplied by Vietnam's cheaper Robusta coffee. As a consequence, in Africa and Latin

America many farmers were forced to closed their farms, or to change their agricultural aim on corn or another crop, because of the cheap supply from Vietnam. (FORTUNE, 2002) In January 2019, actual price was about \$2.83 per kg and slightly increasing. (YCHARTS, 2019)

## **4.2 Colombia**

### **4.2.1 Colombia coffee history**

One of the first sights of commercial coffee production is dated in 1835, since that coffee industry has transformed whole countries economy. Between 1910 and 1930 coffee become in board economy activity, therefore, Colombia was called as coffee economy. In 1960 coffee industry reached the limits due to low productivity and obviously technologies, that people did not have. To achieve even bigger profitability farmers saw the potential in quality that may be improved, because of limited landscape.

(MPRA, 2011)

Recently Columbia is known as the fourth biggest economy in Latin America with approximately 49 million inhabitants and steady growth in recent years. (WTO, 2017) In the last decades, Colombia becomes third largest economy in South America. One of the reasons is a big range of sources and good climate conditions to produce many agriculture commodities. Among 563 000 families that producing coffee is this industry consider as an important part of culture. Most of the Columbia coffee we can find in small farms that are typical for developing countries. 95 percent of these small farms do not have bigger harvested land than 5 acres on average. Mostly all of them are managed by families that are dedicated and committed to their product. (CAFEDECOLOMBIA, 2010)

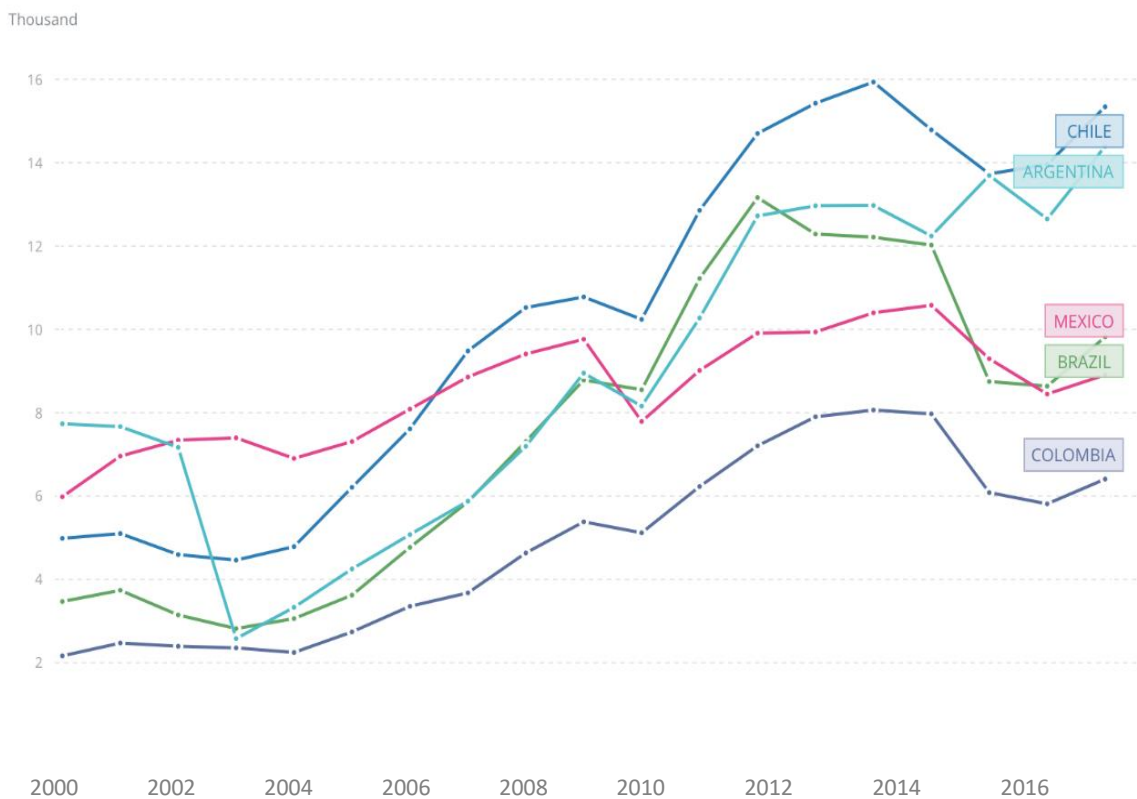
### **4.2.2 Economy**

Colombia has been a member of WTO since April 1995 and member of GATT since 1981. In Columbia government implements macroeconomic policy that was able to maintain a growth rate, which is above average for Latin America. After countries as Peru and Mexico, Colombia achieved the third-highest GDP growth rate with 9.4% unemployment in 2017. Columbia was responsible for 0.21 percent of share in world total export, which was represented as 37 800 million US dollar in 2017. Although, government's efforts to diversity export with over 4,800 products, agriculture is extremely important for income to the economy. However, it remains heavily dependent of petroleum products, that



accounted for approximately 40 percent of total export. Due to the big dependency on raw materials government is trying to promote exports of services and non-traditional manufactured products. (WTO, 2018) In 2017, GDP is estimated to have grown by 1.8 percent. To compare other economies with Columbia we can see on figure 8, that express GDP per capita among main economies in Latin America.

**Figure 8: GDP per capita**



Source: The World Bank, World Data Bank

Although, GDP was recorded at 7531 US dollars in 2016. This trend is likely to increase in Colombia due to better tax reform that should improve revenue collection, also decrease lowering of the profits to 33 percent by 2019. In addition, coffee stands for almost seven percent of agriculture export. Coffee was responsible for 2 463 million US dollar into the economy in Columbia in 2016. (WTO,2018)

Columbia's main trading partners are the United States, the European Union, China, Mexico and Brazil. Columbia has been doing big progress to achieve better economics results, however, their current account balance is in deficit. The income deficit is mainly

because of payments abroad related to mining-energy sector. In 2017, income deficit stood at 3.3 percent compare to 4.3 percent in 2016. Decreasing of import goods is the reason that income deficit has been decreasing, according to World Trade Organization. Columbia as a member of WTO has an open investment regime. Private investments are welcome almost in every sector in the country. Foreign investors may set up business with help commercial companies and may have subsidiaries in the country. No need any special approval except mining. Since 2011 government in Columbia has been trying to decrease number of tariffs that have a negative impact on economy. (WTO, 2018)

### **4.2.3 Comparative advantage**

#### Climate

Being able to produce coffee requires a lot of factors that have to be obtained. One of the best places on the earth where these conditions are available is Columbia. Specific range of altitude is crucial to harvested. Usually, from 1.400 meters to 2.000 meters above the sea level we can find family coffee farms. (CAFEDECOLOMBIA, 2010) As well as, rain pattern along with right temperature within a day is crucial. There are two typical seasons dry and wet, so winter are dry making ideal habitats for coffee plant. Soil

Flavour is based on location where coffee beans come from. Such in Columbia where is soil called volcanic soil, therefore, coffee should be characterized as fruity neither as chocolate flavour. Soil is important for bigger trees that are protecting actual small coffee trees. (AUKIA,2017)

#### Labour

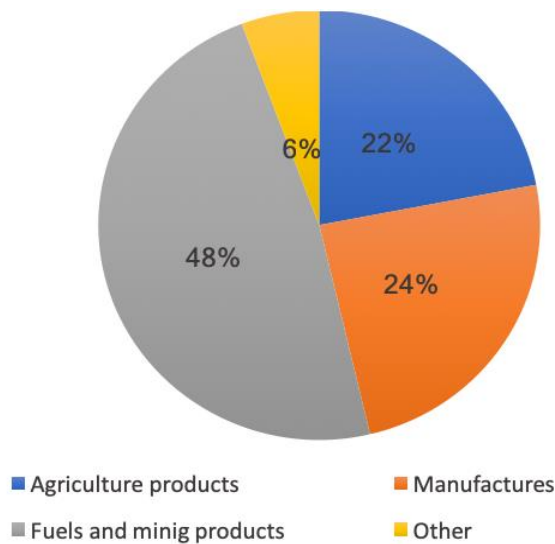
Labour is often considered as an advantage especially in developing countries, where people do not have a chance to get more paid compare to developed countries. Even though, in developed countries we can think about labour as comparative advantage. For instance, in Columbia average salary is less than half time the global average. In 2018, the national minimum wage remained fixed at 262.9 US dollar per month., that is 3,155 dollars per year, considering 12 payments per year. Comparing to year 2013 when minimum wage in the country was fixe dat 332.8 US dollar per month. In the long term, economists believe that wages should be increasing. Comparing Colombia wages with other countires that are based in South America and produce coffee such as Brazil and Chile. For instance,

in 2018 minimum wage in Brazil was accounted at 228.4 US dollar and in Chile 448.6 US dollar per month. Therefore, Colombia may be consider as relatively cheap comapare to other countries in Latin America. (COUNTRY ECONOMY, 2018)

#### 4.2.4 Export in Colombia

In Columbia, agriculture sector is an extremely important socio-economic factor that covers over 3.5 million job places in the country. From the following figure 9 we can observe three main industries that are the most important in Columbia’s export.

**Figure 9: Columbia's export breakdown in %**



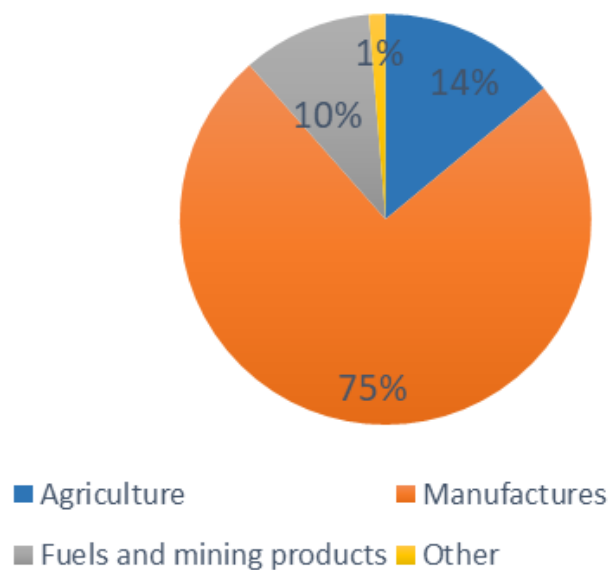
Source: Created by author based on World Trade Organization data

The figure 9 express the importance of agriculture (crop and livestock included) that represents 22 percent of whole export. In other words every fifth nation work is in agriculture sector, so country depends highly on agriculture. Columbia has a relatively high degree of food sufficiency an estimated 85 percent of internal demand for food in the country. As well as, agriculture is consider as a crucial source of earnings for the country. In 2016, the contribution from agriculture was 6 701 million US dollar. In a term of whole export especially coffee is one of the foundation of export in the country representing 6.9 percent of whole export. Value that coffee trade brought to the countries bouget in 2016 was approximately about 2.463 million US dollar, that is significant source of income, that has a direct influence on economic situation. (WTO, 20)

#### 4.2.5 Import

Import is an essential part of whole process of coffee. Being able to harvest, transport and finally export coffee beans importing of merchandise is crucial. Some of the countries may look as self-sufficient at everything. On contrary, these countries may produce whatever they want, but they will not achieve the same economic goals as if they import goods that are relatively cheaper to buy than produce in a specific country. In our case, Colombia is highly dependent on goods from other countries too.

**Figure 10: Breakdown of import in % 2016**



Source: Created by author based on World Trade Organization data

Figure 10 express the importance of manufactures that are crucial for the country. Approximately 75 percent of whole import is manufactures followed by maize, wheat, soya-bean oil and meslin in agriculture sector. In 2016, the main country that imported into Colombia was the USA with almost 27 percent of whole import. On the second place was China with 19 percent followed by EU that stand for 14 percent. Among the most imported merchandise were petroleum products, motor vehicles and aircraft. (WTO, 2017)

### **4.3 Impact of coffee industry on well being in Colombia**

The relevance of the sector can be expressed through figures as export, employment, GDP and production value, but it may be presented as opportunity cost. In other words, what would happen if coffee industry slows down or disappeared, due to climate changes. Coffee industry is not just a big input into the economy, but also strong pillar of stability in the country. In 2013, about 800 000 were direct jobs mainly in rural areas and about another 800 000 jobs were represented at marketing, transportation, threshing, exportation etc. For instance coffee industry generated 3.5 times more jobs than cultivating rice, corn and potatoes together. This is why growing coffee is strong driving force that reduces poverty in rural population. In 2013, overall value of the harvest was estimated slightly over 1 billion US dollar that were redistributed as income between farmers. (FEDERACION, 2013)

#### **4.3.1 Colombia coffee export**

As a result of trading coffee internationally Colombia needed someone who will represent national's interests. Every country that was able to harvest coffee had a big competition in the international market. Colombia government had a significant interest in exporting by reasons of revenue that this trade delivers. Additionally, in 1927 Coffee Growers Federation (FCN) was created as non-profit trade organization. This organization was design to defend farmers rights and shape the vision on international trade. FCN also supports farmers in diverse areas such as research and development, technical assistance to coffee growers, tries launch benefit programs that help whole community and their environment. (CAFEDECOLOMBIA, 2010)

Table 5 describes top ten countries that are major players among exporting countries of coffee in the world.

**Table 5: Top 10 exporting countries**  
(Thousands 60kg bags)

<i>Country</i>	<b>2014/2015</b>	<b>2015/2016</b>	<b>2016/2017</b>	<b>2017/2018</b>	<i>Total</i>
<i>Brazil</i>	36,573	35,543	33,081	30,450	<b>135,647</b>
<i>Vietnam</i>	21,530	29,500	27,550	27,900	<b>106,480</b>
<i>Colombia</i>	12,420	12,390	13,755	12,715	<b>51,280</b>
<i>Indonesia</i>	8,720	9,896	8,174	8,010	<b>34,800</b>
<i>Honduras</i>	4,760	5,000	7,290	7,200	<b>24,250</b>
<i>India</i>	4,894	5,693	6,158	6,224	<b>22,969</b>
<i>Uganda</i>	3,400	3,500	4,600	4,500	<b>16,000</b>
<i>Ethiopia</i>	3,500	3,405	3,853	3,950	<b>14,708</b>
<i>Peru</i>	2,750	3,300	4,025	4,185	<b>14,260</b>
<i>Guatemala</i>	3,070	3,044	3,330	3,555	<b>12,999</b>
<b>Total:</b>	<b>101,617</b>	<b>111,271</b>	<b>111,816</b>	<b>108,689</b>	<b>433,393</b>

Source: Created by author based on United States Department of Agriculture

Columbia coffee export reached a value at 12 390 000 of 60 kg bags in 2016/2017.

Over the past 4 years Columbia generates approximately about 12 percent of world export, that is represented in 51 280 000 of 60 kg bags. More than 420 000 hectares have been renovate since the program started in 2002. That is almost half of the coffee area that may be harvested, moreover, the government's goal is to be able to renovated at least 90 000 farmer's land, express the USDA coffee world market report. (USDA, 2018)

### **4.3.2 Opportunity cost**

Hypothetically, if coffee industry disappears it will be an unwelcome boom on Colombia economy. Regarding estimations the government's expenditures for supporting farmer's families will cost 256 million of US dollar per year, in addition to that there will be another cost such as health and child support as well. Additionally, in the worst case if whole families would decide to immigrate into the cities, its will rapidly raise poverty and unemployment figures. A brief review of these figures emphasize that coffee sector is the leader in national economy, affecting national peace and stability essentially in not urban areas in Colombia. (FEDERACION, 2013)

## **4.4 The future risks of Columbia coffee industry**

Background of coffee development tells us that coffee industry is flexible to our needs. If we as nation grow coffee production grow too. Although, many sciences are aware that this trend is not sustainable, unless, we change some conditions that have an effect on growth. So far whole market has been depended on two species Arabica and Robusta. (KEW, 2019) Despite importance of Arabica there are some treats that may have significant consequences on world coffee chain. One of the biggest challenges is climate change, deforestation and pests along with diseases. (MOAT, 2018)

### **4.4.1 Climate change**

One of the main challenges all nations across the world is climate change, which has been discussed often. Although, not that often as it should be discussed. Royal Botanic Gardens research reveals that 60 percent of all wild coffee species are under threat of extinction. The part of their research was conducted in Ethiopia where the number of locations where Arabica grows will be decreased by 85 percent in 2080. Moreover, research express that up to 60 percent of production area could become unsuitable for coffee farming before the end of this century. Especially for Ethiopia it may be a crucial problem due to their big dependency on coffee export that was counted as 33 percent of whole export in the country. Moreover, coffee industry is backbone for Ethiopia's economy providing, over than 30 percent of export earnings and

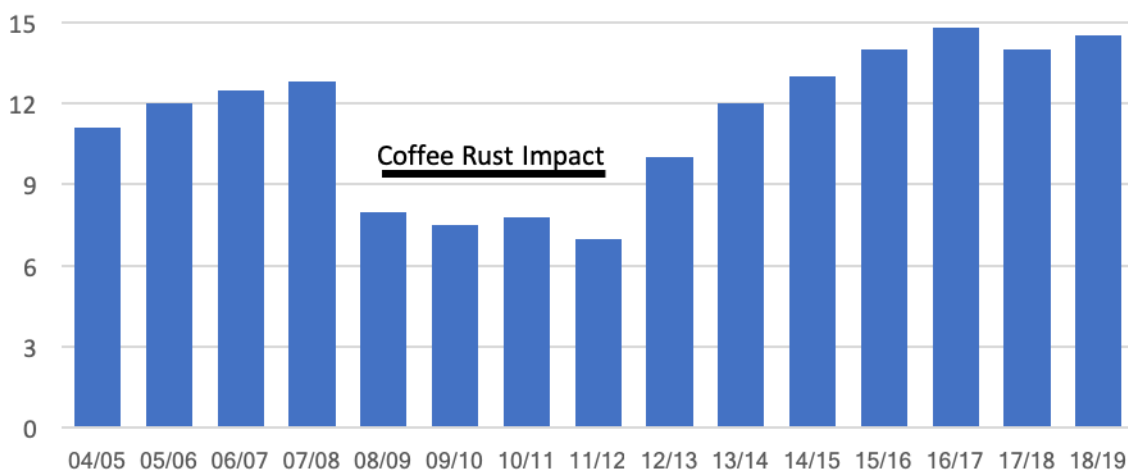
more than 15 million people are engaged by the industry. (KEW, 2019) As well as, Columbia has been facing climate changes over decades. Declared optimal range of temperature for Arabica is 18-21°C as an average temperature across the year. Some locations have already a higher mean temperature at 24-25°C such as, Northern Brazil. On the other hand in the regions where the temperature falls under 17-18°C growth is also depressed. According to Intergovernmental Panel on Climate Change just in last 100 years, a global temperature has increased by 0.74°C a global temperature will increase something between 1.8°C to 4°C by the end of twenty first century. Coffee farmers across the world are already suffering due to climate change. Unfortunately, forecast do not say otherwise, so we can expect that this trend will continue. (DAVIS, 2012) Especially climate changes have an influence on many other fields that harm coffee plants such as pests and diseases. Just due to climate changes the Intergovernmental Panel on Climate change has predicted a 10-20 percent decrease in overall crop yields by 2050. (PERFECTDAILYGRIND, 2017)



#### 4.4.2 Pests and diseases

Arabica compare to Robusta is more sensitive to all variety of infections and Columbia is the second biggest producer of Arabica after Brazil. In 2008 to 2011 Latin America was attacked by a leaf disease, that caused deep casualties on continent production.

**Figure 11: Columbia's production**  
(Million 60 kilogram Bags)



Source: Created by author based on World Trade Organization data

In overall, a decrease by 16 percent for 2012-2013, but mainly Columbia did suffer the most on average 31 percent during the epidemic years. This decline on production had a strong social impact on over 500 000 families. These people are strongly dependent on income from coffee, because they are not self-sufficient for food, so they did not have access to food. Due to coffee rust, over 420 000 hectares have been replaced with rust-resistant varieties. Pest and other diseases will always be an issue not just for coffee farmers, but for farmers across the world. In more developed countries farmers use chemicals and other fertilizers that may seem expensive for rural farmers in the country. However, this is one of the approach how to decrease chances to be attacked by diseases. Secondly, Colombia goverment has to continue with upgrading farmers land, so their production may be sustainable, regardless of increasing temperature. (AVELINO, 2015)

#### **4.4.3 Lack of investments**

Both terms education and finance will become even more important in coffee industry. Education in term how to best use the soil and regenerate crops should help coffee industry in the future. Especially in Columbia where 95 percent of coffee farms have less than 5 hectares and these small farms represent 70 percent of national production. (PERFECTDAILYGRIND, 2017) *“If every tree produced to its full potential, we could probably double or even triple the global volume produced”*, says coffee trader Will Hobby in his article about challenges in global coffee industry. Scientists are concerned that lack of labour may be the problem in the future. Children of farmers often choose to migrate to the city to find better opportunities. In most places farmers have difficulties to find pickers to harvest coffee beans. The salary of pickers is based on volume that they collect and usually picking is seasonal work, although labor makes 50-60 percent of the cost of coffee production in Latin America. It means that people after harvesting have to find another job, so they rather go to the city to find a year time job. It may see coherent that people prefer to be employed whole year. (PERFECTDAILYGRIND, 2017)

## 5 Results and Discussion

South America is seen as a market with tremendous potential. On this continent, many countries are called developing countries. These countries still have a long way to go to get closer to Europe or America's level of living, although many of them have been making progress in the past few decades. A couple examples of these countries are Chile and Colombia, where the standard of living has been increasing. Due to optimum climate and soil conditions, Latin America has been a very important player in the international market. Coffee is the commodity that is doing significantly well in Brazil, Colombia and Honduras. It is the second most traded commodity, however, there are some areas that possibly could have a crucial impact on the extinction of coffee plants.

This thesis has already expressed unique conditions that are crucial for harvesting coffee beans. There is a range of challenges and potential risks that already have or will have an unwanted influence on coffee plants across the world. Among these risks are climate change, that is then closely linked with an increasing numbers of pests and diseases, and the lack of investments.

The number one question is how to stop or at least slow down increasing temperatures due to climate change across the world. One of my proposals is to stop deforestation of rainforests. This is happening especially in less developing countries in South America where rainforests are getting destroyed due to the production of palm oil, cocoa and the harvesting of wood. All these factors may look like short term inconveniences, however, in the long term they will not only harm the coffee industry, but will effect the whole world. Moreover, pests and diseases are linked with warmer temperatures so in the future we can expect more pests and a wider variety of viruses, unless scientists develop new types of fertilizers that would be more effective against new diseases. Moreover, I suggest the development of a hardier plant that would be less vulnerable to higher temperatures, as well as diseases.

Secondly, one of the most critical areas in why the coffee industry suffers is due to lack of investments. This is mainly the problem in Colombia, as well as the African country of Ethiopia, where coffee is harvested by local farmers in rural areas. Recommendations are

obvious that their government should have a higher support of education not only in the rural areas, but across the country. If people have the opportunity to study or seek knowledge from agriculture experts and scientists, it may lead to a higher production of beans and possibly improve the quality of the bean. The results would be a higher income for the farmer.

Lastly, my main proposal is to widely share the origin of coffee beans. Organizations such as Fair Trade or Cafe De Colombia, should be more active at informing the public about growing and harvesting coffee beans. As here in Europe, I believe the general public do not have any idea what the conditions were that are behind a cup of coffee. Every coffee customer should have knowledge about the conditions of coffee that is presented on the European market. Based on this knowledge, each of us should be able to decide who will we support; the big corporations that just buy large amounts of coffee beans from Brazil or Vietnam and that are harvested on massive fields, or if we decided to support families that are directly related to their coffee beans that are harvested in small family fields.

## 6 Conclusion

The analysis has shown the importance of foreign trade that is necessary in today's world. The country has to open the economy if it wants to become a rich country. Although, international trade has been considered as a controversial term. Although, this paper emphasizes benefits and advantages that are closely linked with foreign trade. Especially benefits on GDP in and even on secure stability in Colombia.

Colombia has been dependent on import and export mainly with the United States of America. Thanks to trading Colombia is a third largest coffee exporter in the world and second-largest producer and exporter one of the most flavorful Arabica coffee, that is distributed across whole world. To help developed and open economies, the WTO was established in 1995, since then we can observe significant progress in developing countries such as China, India.

This the paper has pointed out how international trade affects employment, stability and economy in Colombia. Without opening their economy Colombia will not be able to compete with other countries in South America. Due to, international trade, Colombia was able to export 80 per cent of the whole production. Undoubtedly, this 80 per cent has been a significant source of income in Colombia.

In addition, Colombia should continue with applying innovations that may be crucial for existing coffee industry in the future. The paper expresses the challenges that Colombia faces and provides the approaches to these challenges overcome and increase their cultivation.

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