Czech University of Life Sciences Prague

Faculty of Economics and Management

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Diploma Thesis

Foreign Trade in Syria - Case Study of Iron and steel trade

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

DIPLOMA THESIS ASSIGNMENT

B.Sc. Waseem Hossni

Economics and
Management Economics
and Management

Thesis title

Foreign Trade in Syria – Case Study of Iron and steel trade

Objectives of thesis

The main aim of the thesis is to Discuss the foreign Trade of steel in Syria.
To explain the relation between some of the macroeconomic variables with the Iron and steel market. The goal of the thesis will be to find a correlation between the variables mentioned above to create new indicators connects them together to facilitate the vision of the Iron and steel trade.

Methodology

a number of methodological approaches will be used for achieving this research. A theoretical overview will be applied to investigate the foreign trade aspects and cover steel concept and trade. Statistical analysis will be used to figure out the recent dynamic of Syria's economy and Syria's foreign trade reaching the steel and iron sector. Regression analysis will be used as a tool allows us to correlate between economic variables and steel trade.

The proposed extent of the thesis

40 – 60 pages

Keywords

foreign trade, international trade, iron and steel market, economy of Syria, regression analysis, import.

Recommended information sources

Akyuz, Y., 2003. Developing Countries and World Trade: Performance and Prospects. Zed
    Books. ISBN 1-84277-410-7

Fish, P. (1995). The International Steel Trade. Woodhead Publishing. ISBN:1-85573-100-2

SURANOVIC, S., 2010. International Trade: Theory and Policy, Version 1.0. 5 p. ISBN: 978-1-
936126-45-3.

Expected date of thesis defense

2019/20 SS – FEM

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13. 3. 2020

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Declaration

I declare that I have worked on my diploma thesis "Foreign Trade in Syria –Study case of iron and steel trade" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on _____ .

Acknowledgment

First of all, I would like to express my fully sincere gratitude to my supervisor doc. Ing Mansoor Maitah Ph.D. et Ph.D. who supported me to finalize this thesis from scratch till the end. He provided me all advices and recommendations I need to finish this work. I am thankful for him for the opportunity I have under his supervision, I really appreciate his patience and kindness. Also, I would like to thank all the academic staff who taught me at this university and provide me with the knowledge, this precious asset I will carry on for the whole of my life. And the thank also for the administrative staff for making the educational process smooth and productive. Also I cannot forget to thank my family for their support, all the friends and people who I have met throw my study at this university and left me with a positive impressions on my life. Thanks for the love you spread.

Foreign Trade in Syria - Case Study of Iron and steel trade

Abstract

Syria was suffering from a massive conflict over the last years, this conflict originates big destruction. This conflict started lately to subsidence, keeping questions about the coming reconstruction era, what I see as an opportunity to do my thesis about the main materials for constructions witch are the Iron and Steel.

The trade balance in Syria is more preponderant to Import due to the import of the manufactured goods, Steel and Iron definitely at the top of the list. Many changes happened lately in the trade partners as a result of the sanction can affect the trade trends and tendencies regarding many materials.

The imported steel and iron are the basic resources to meet the demand in the domestic market and there are many factors affecting these materials worth studying.

A good knowledge could be gained from this study about international trade explaining the main points should be known. Also a sufficient explanation to the steel and iron basic concept will have a good part in the literature review to make the practical part familiar.

The practical part will go deeply connecting both the international trade with Iron and steel for the specific case of Syrian iron and steel trade by presenting in figures the connectivity of these two topics. These data will cover the period between 2003 and 2017, and I would like to mention that I choose this period because it is combining between the two different eras in Syria (before the conflict and after the conflict) to make the sample more comprehensive and have more accurate results.

The Hypothesis has been tested in the practical part using the regression analysis had the result of existing relationship between Steel import as the dependent variable with (GDP growth, steel production, population, and exchange rate) as the independent variables. As a result, we had a model can explain the steel and iron market in Syria and shows the relation between the real values and the anticipated values from this model. This model will help in the future to have more understating from a national or an investment point of view.

 Keywords: foreign trade, international trade, iron and steel market, economy of Syria, regression analysis, import.

Zahraniční obchod v Sýrii - případová studie obchodu se železem a ocelí

Abstrakt

Sýrie v posledních letech trpěla masivním konfliktem, tento konflikt má za následek velké zničení. Tento konflikt začal v poslední době ustupovat a udržoval otázky o době rekonstrukce, což považuji za příležitost k provedení mé disertační práce o hlavních materiálech pro stavby, které jsou železo a ocel.

Obchodní bilance v Sýrii převažuje dovoz z důvodu dovozu průmyslového zboží, ocel a železo rozhodně na prvním místě seznamu. Dovážená ocel a železo jsou základní zdroje, které uspokojí poptávku na domácím trhu, a existuje mnoho faktorů ovlivňujících tyto materiály, které stojí za studium.

Z této studie by mohly být získány dobré znalosti o mezinárodním obchodu, přičemž by měly být známy hlavní body. Dostatečné vysvětlení základního konceptu ocel a železo bude mít dobrou roli v přezkumu literatury, aby byla praktická část seznámena.

Praktická část bude podrobně propojovat mezinárodní obchod se železem a ocelí v konkrétním případě syrského obchodu se železem a ocelí a na obrázcích představí propojení těchto dvou témat. Tyto údaje se budou vztahovat na období od roku 2003 do roku 2017 a rád bych zmínil, že jsem si vybral toto období, protože kombinováním dvou různých období v Sýrii (před konfliktem a po konfliktu) je vzorek komplexnější a má přesnější výsledky.

Hypotéza byla v praktické části testována pomocí regresní analýzy, která měla za následek existující vztah mezi dovozem oceli jako závislou proměnnou s (růst GDP, výroba oceli, populace a směnný kurz) jako nezávislé proměnné. Výsledkem bylo, že jsme měli model, který dokáže vysvětlit trh s ocelí a železem v Sýrii a ukazuje vztah mezi skutečnými hodnotami a očekávanými hodnotami z tohoto modelu. Tento model v budoucnu pomůže zintenzivnit podceňování z národního nebo investičního hlediska.

Klíčová slova: zahraniční obchod, mezinárodní obchod, trh železa a oceli, ekonomika Sýrie, regresní analýza, dovoz.

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List of abbreviation

CBSSY – Central Bureau of Statistics in Syria.

CIS – Commonwealth of In dependent States.

DFI – Direct Foreign Investment.

EU – European Union.

GDP – Gross Domestic Product.

GNI – Gross National Product.

GB – Great Britain.

IMTS – International Merchandise Trade Statistics.

NAFTA – North American Free Trade Agreement.

OECD – Organization for Economic Co-operation and Development.

SCP – Syrian Central Bank.

SYP – Syrian Pound.

USA - United stated of America.

USD – United states American Dollar.

WPI – Wholesale Price Index.

WTO – World Trade Organization.

WSA – World Steel Association.

1- Introduction

Civilization is the bright side of the human being, it was through the history a discriminating indicator of nations development and superiority. It reflects a group of intellectual development, cultural development and economic development in the nations behavior and dealing with various issues of life between each other's.

Trade between nations is helping to improve the civilization, and a big prove for that is the silk road where nations along the way of this road witnessed a high level of supremacy among others. My country Syria were one of them, evidences from ancient civilizations built their still existing and can say all of that.

Building and Architecture are traits of the civilization were helping people to show their improvement and were major factor in the nations race. This factor was shaping through the history from a basic tools and equipment in an evolutional way that can't be expected to happen to corresponds with each era requirements.

Constructions and structures are considering among the faces of civilization, and they reflect an economic development and affected by and economic factors. In the recent era the steel and iron become very important and major items in this process. Steel and Iron are very important materials in our modern days we can find them everywhere we look or touch.

Syria my country has many changes in the recent modern history, the last conflict caused a big destruction in buildings and infrastructure. The importance of the international trade becomes important to supply many materials due to lack in production. This raised in my head the idea of combining the study of International trade for steel and iron. Syria has a central location connecting three continents together this location can be employed in a good way in international trade and especially the trade of this materials.

In this master thesis foreign trade performance for Syria will be analyzed with more concentrating on the iron and steel trade. It is interesting topic for me to investigate the factors affecting the foreign steel and iron trade in Syria, since I know from previous job experience that the steel and iron trade in Syria is very important topic and has major role in people's life and reflect many economic indicators.

2- Objectives and methodology

2.1- Objectives:

The main aim of the thesis is to discuss the international trade in Syria and more deeply the foreign iron and steel trade in the country during 2003 to 2017, also to analyze the relation between some variables reflecting the economic situation view in Syria.

Sub objectives are having overview of the international trade globally, investigate about the steel and iron as an important material and the basic concepts about its trade globally, find out the essential changes over the time period and try to analyze it. Finally examine factors which might influence steel import.

The goal of the thesis is to use the correlation between these variables reflecting the economic situation in Syria (GDP growth rate, exchange rate, steel production, population and total imports) with the steel and iron import to facilitate the vision of the steel and iron import in the country and make it easy to expect the quantities needed for the future depends on the predicted other variables.

Hypothesis: The mentioned above variables have an important effect on the steel and iron import that would create a model helps us to expect the value of this dependent variable.

2.2- Methodology:

A number of methodological approaches will be used for doing this research. I will discuss a theoretical overview about the concept of international trade in general explaining the main ideas about foreign trade could come to the reader mind, as well showing my gathered information and deductions about the trade of steel and iron.

For practical part I will use quantitative research method to gather my data for the variables of (GDP growth rate, steel import, population, total imports, exchange rate, and steel import) for Syria for the years of 2003 to 2017.

The specific tool will be used to prove weather my hypothesis is right or wrong will be the Linear regression analysis for the gathered data. To figure out the factors are affecting the steel and iron import in Syria.

3- International trade:

3.1.- International trade overview:

All countries need goods and services to meet the needs of their people. Production of goods and services requires resources. Each country has only limited resources, and no doubt there is no country can produce all the goods and services it needs. It must buy from other countries what it cannot produce or produce less than its requirements. Likewise, goods are sold to other countries in excess quantities. India also buys and sells from other countries various types of goods and services.

Generally, no country is self-sufficient. It must depend on other countries to import goods that are not available with it or are available in insufficient quantities. Likewise, it can export goods, which are in excess quantity and that are in high demand abroad.

International trade basically express trade between the two or more countries; it involves different currencies of different countries. It is regulated by laws, rules and regulations of the concerned countries, thus, International trade is considered complex concept. International trade is not different in principle from domestic trade, as the motives and behavior of the parties involved in the trade do not change substantially, regardless of whether or not cross-border trade is. The main difference is that international trade is usually more expensive than domestic trade.

The reason is that borders usually impose additional costs such as tariffs, time costs due to delays in boundaries and costs associated with differences between countries such as language, legal system or culture. International trade consists of export trade that involves the sale of goods and services to other countries, and import trade that consists of purchases from other countries (Batiz, et, al, 2003).

Nowadays we all notice if someone visits a supermarket that can purchase various products from different countries: Ecuadorian Banana, Brazilian coffee, French cheese and so on. It can be a simple example for foreign trade and how it looks like today. Foreign trade provides us opportunities to have several options for both services and goods which may not be available in a domestic country. Moreover, customer can buy a better product/service for valuable price (Suranovic, 2010).

Foreign trade can be expressed as the exchange of goods and services between many countries as the domestic customer will have more opportunities to purchase different types of products and services. In addition, Adam Smith and David Ricardo also recognized the importance of foreign trade. Because of international trade, consumers can always pick up the best products for themselves. For example, they may have an opportunity to compare sports shoes that are produced in America with those made in China. Moreover, a comparison of wise value and wise quality can be made.

* International Trade operation:

That is pointed by the activities more into the internationalization of business comprising activities of foreign trade in a limited sense, with a direct reference to the operations of export and import, operations of export-import and transit in this model will be combined together. The parties have distinct, even opposite interests, but they agree to coordinate them in order to conclude a deal believed to be mutually beneficial. even if the relationship between the two partners could be for the long term or maybe the transactions concluded for the long term, the main pan for this transactions will be definitely for the short term (Davis, 2015)

Figure 1: World Exports in goods and services during 1970-2015 (in USD)
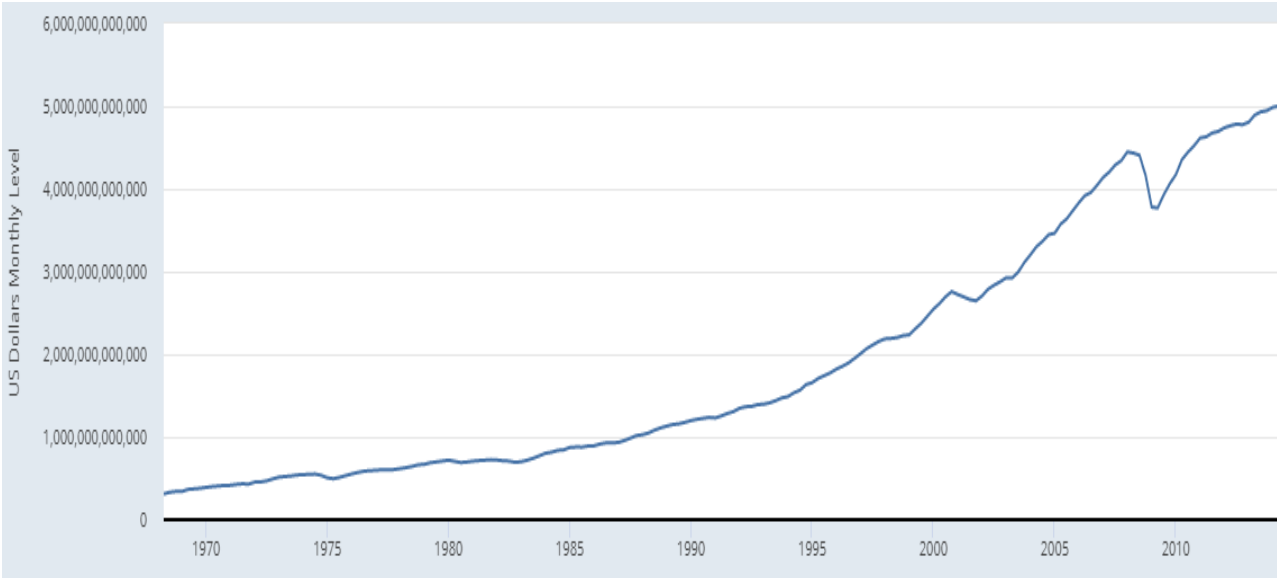
Source: (Arcelormittal, 2015)

* Strategic alliances:

It has many other definitions such "competitive alliances" or "global strategic alliances, in a broad sense all express the same meaning of cooperation between parties (mainly companies) from different countries to be partners paying attention to the techniques of international transfer of resources. The strategic alliance could only be sharing one of the production elements while the rest kept independent for each party, the goal will be targeted to achieve in the is common and working together forward to achieve.

The reason for a company to start an alliance is it expand into a new market, or to improve a product line, or develop a competitive advantage to ski a competitor. This partnership will allow the tow partners to work toward a common goal to bring common benefits for them.

The benefit of strategic alliance is to have the possibility to share the resources that one of the firms possesses, and may this will lead to an organic profit. Speaking about disadvantages, that each firm could bring risk to another firm's line or aim, or to be dependent on another, the collaboration disturbance can lead to endangering the authenticity of the company. Going to the advantages we can denote that firms don't need to merge any capital or production resources, build up more strong relationship with both firms' connections (Seinhilber, 2008).

* The direct foreign investments:

It is the kind of investment running in one country ant controlled entirely from another business or entity located outside the country, the difference between the direct foreign investments and the foreign portfolio investment is the notion of direct control. Types of DFI:
- In terms of shape:
As building a network of subsidiaries abroad, the investor may either: Create an entirely new one, with new product installed and appoint new employees. This is called the establishment of foreign direct investment. Obtaining a pre-existing foreign entity through acquisition, transfer of ownership, or cross-border mergers and acquisitions.
- From a strategic point of view:
Horizontal foreign direct investment: It is investment in all branches that produce goods similar to the parent company. This type of foreign direct investment to facilitate the access of investors to external markets or to overcome some factors (such as customs barriers, transport costs) that

affect the competitiveness of exports, and investors prefer to repeat all stages of production at the target site.

Vertical or vertical direct foreign investment: It is investment in the various stages of designing, producing, and marketing its products through implementing production in different countries and through subsidiary companies. This is to take advantage of the differences in factor costs between countries (Mikesell, 2013).

When the value-added activities of the parent company are implemented phase by stage in a vertical manner in the host country, the investment is vertical.

Figure 2: Net foreign Direct Investment by country during 1985 – 2018 (in USD)
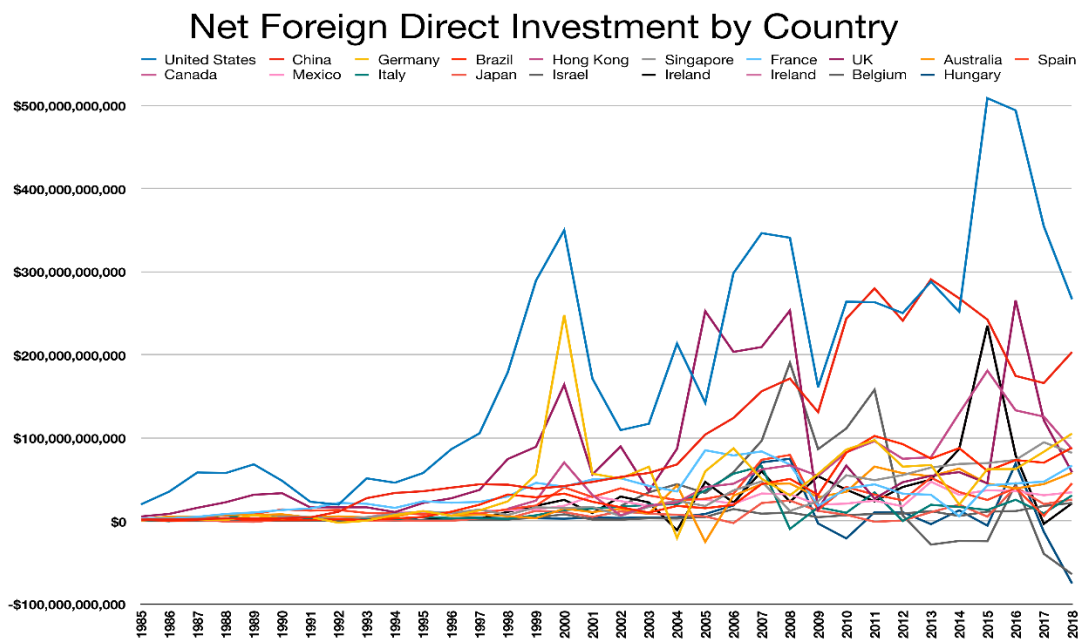
Source: World bank, 2019

3.2- Theories of international trade:

As many Scientifics and economics thinkers have many and different new ideas and theories about international trade, still all those theories are around the three basic classic theories.

Mercantilism

As the trader in the trading of goods is trying everything to earn from his rival as much of their profit, so the state, according to the concept of mercantilism, must have the profit to its side.

It was one of the oldest economic thinking started in the sixteenth century, it appears at the same time the idea of capitalist production. Available quantities of precious metals in countries are the main idea to focus on obtaining them being achieved on the basis of boosting exports and restricting imports. We should highlight that the time of this theory appearing, monarchies were in power in most countries, so mercantilism seemed to represent sound economic thinking based on two clauses: those precious metals were to made up the wealth, the profit was gained from foreign trade money made from this metals. From these perspectives, mercantilists constantly demanded the intervention of the state in trade relations with the foreign partners, the objective being that the trade balance to be in surplus (Reinert, 2009).

We can say that the mercantilist current is considered elegant in our days also, in countries such as Japan, France and USA. Current met basically in sectors which have lost their comparative advantage, for example in the agricultural sector.

The theory of absolute advantage in international trade:

Adam Smith in his book "Wealth of Nations" indicated where there are made numerous theoretical generalizations on prices, incomes and value. In his theories, the foundations of the classical liberal school have existed. Although the authorities' interest in increasing national welfare seemed difficult to prove, the Scottish economist, also called the market economy, he has shown that the mercantilist philosophy contributes to weakening the bases of economic development, reduces the wealth of a country even if some groups of interests have gained.

If a foreign country is able to provide our goods cheaper than we produce, it is better to buy them from that country, along with part of the product of our activity, and to use them in a way that can bring us some benefit (Smith, 2017).

For more understanding, I will take the fictional example of Argentina vs China in the production of coffee and garments. Argentina requires 32 hours to produce a bag of coffee while China requires 58 hours to do the same. China requires 11 hours to produce a bolt of clothing while Argentina requires 37 hours to do the same. On the light of the number of working hours required by each country to produce these goods as a homogenous source, Argentina has the Absolute Advantage of producing coffee while from the other hand China has the Absolute Advantage in producing garments.

The theory of relative advantage or comparative costs of production

Since the absolute advantage didn't answer many questions, an economist appears at the beginning of 19th century his name is David Ricardo. He developed the theory of comparative advantage, continuing the road started by Adam Smith. This new stage of economic imposed the development of a new era of the international trade.

It takes into account the concept of the cost for the opportunity countries or states or even firms has in his book "On the principles of political Economy and Taxation" he came through the idea of cost adding that between countries that there does not always occur equivalent exchange.

In international trade, one party should have an absolute advantage for each. The theory focuses on the point of specializing in the good with a lower amount of work at the national level can make countries win (Ricardo, 2004)

Going more particular into the labor as a production factor, this theory was appreciated by the countries that have an advantage in this factor, and the opposite from countries with less advantage, J. M. Keynes shows that free trade may lead in addition to the export of goods to the export of unemployment.

In easy words, if we are producing a good at a high cost compared with another country so it is better for us to import this good rather than producing it. The suggestion from the economic theory that if countries apply the principle of comparative advantage, co-production will be increased compared to outputs that will be produced if countries try to achieve self-sufficiency and allocate resources to produce both commodities (Ricardo, 2004).

It means that if a country produces the good for which it has a comparative advantage over another country and trades with the other country for the goods it has the comparative advantage in, total potential consumption in both countries can be increased beyond what is possible without trade.

3.3- Foreign trade role in economy:

World trade to world GDP ratio increased from 19% in 1970 to 48% in 2015. International trade represents a major player in the economy of each country, it allows the population to have their needs and get their requirement. Since it is the exchange of goods and services it reflects the development of each nation and simulates the level of the civilizations they have.

Back thousands year, it still the same idea, where there is a foreign trade it is a sign of civilization many examples through the history, Silk road, Phoenicians shipping fleet power as an example for our modern days the use of raw materials reflects the importance of the foreign trade, that many countries have these materials in much more than they need to use, so they can trade with other countries and get benefits from that.

More choices for consumers also among the role of international trade, a driving factor behind the trade is giving the consumer greater choices of differential products, more choices for the customers mean two things, offering the verities of all goods based on the different prices and qualities from one side, and based on uniqueness from another hand (Hirschman, 1980).

Example for that: a customer from Thailand, the international trade offers for this customer to have the rice from Vietnam even Thailand is producing rice, and let him also to have a luxury bag from Italy even if Thailand also producing and even exporting bags to the world, so this offers for them to have not only their needs but also more varieties of goods even for luxury seekers.

Also, the International trade gives more efficiency for the economy of scale and specialization, in the modern economy it doesn't really matter what countries are specializing in, the important thing is to pursue the specialization to make companies benefit for the economies of scale that outbalance most of the other economies factors.

For high value-added products the international trade allowed the companies to split the production process into a multinational level, some products have two multinational country-based, some even more and more (Helpman, 1999).

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3.4- Structure of world trade

In a broad way of speaking, we can say that trade structure includes foreign trade commodity structure, foreign trade mode structure, foreign trade pattern structure and so on. Going more specific we can identify it is the portion of imports and exports for the whole world trade, the distributions in types of commodities and services with geographically the portion of each state, country or territory (Thompson, 2006).

Many studies recently in the last few years focused on the impact of the opener of trade on income levels and on other factors like economic growth. International trade relations existed in the old past, politically, culturally, agriculturally and economically as well, but there is a wave of many new countries entered the club of the international trade big players recently only because of the automotive industry, so we have to admit that a big change in the structure is happening and still happening, this makes some factors affect such raw materials become lower and lower, raising other sectors impact in the structure (Thompson, 2006)

Specializing in one country, a specific product can be purchased at low cost and good quality. It enables them to use resources effectively to produce goods. In a country, goods that are not easy to use or that cannot be produced are bought from the global market. Exchanges are carried out in bulk and through international exchanges. The global market consists of a mixture of commodities, labor and capital Foreign exchange markets. International trade takes place in global markets, which are the pool of foreign trade for all countries. It consists of world-class exports and imports, which are called the value-based ratio of the trade balance.

The global market is the total of all countries working together to meet the demand for imports. Developed countries are dominated by developed market and participate in the finished products which are more that 70 % of the world exports, from the other hand developing countries basically focusing on exports of raw materials and labor as a second factor. So the big influence on national markets comes from the huge potential of the global market (Thompson, 2006).

The statistics from the World Bank show that global import was 16.1 trillion USD in 2017, and 17.8 trillion USD for the exports, the numbers show about a 10% increase from 2016.

Figure 3: World Import and Export during 2007-2017
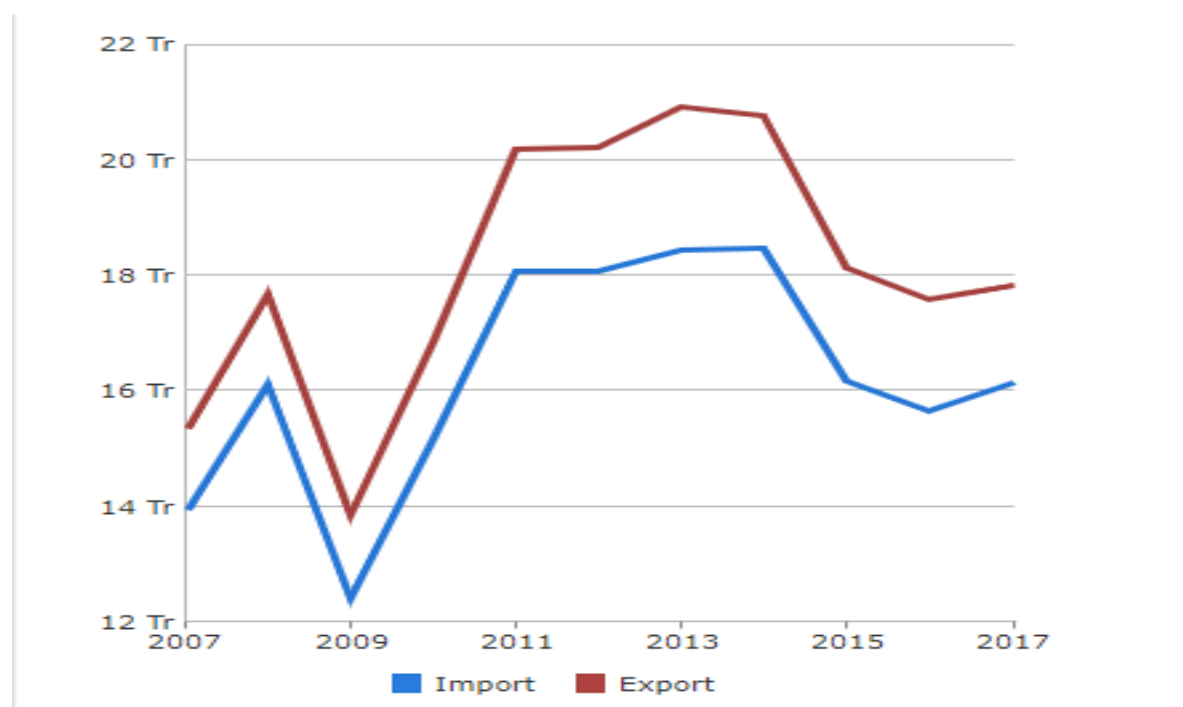
Patterns of trade: it gives an overview of types of products traded and the countries involved I trading. Any change or shift in the economic environment or the trade policies or the macroeconomic factors in any of the trading country will reflect on this pattern,

From a geographic aspect, it is important to clarify that from what I studied I understand that countries do not trade with each other mostly the businesses, firms, and consumers who engage in this investment.

After the second world war, a big jump happened in the economy in general specifically the structure acquires many changes. The regional trading blocks were remarkable in the modern history, countries in the club have privileged easy trade without barriers with the countries in the same block while erect barriers to trade with non-members, this has had a big impact on the international trade pattern, members on blocks like NAFTA, European Union has led to trade creation while countries out of this blocks were suffering (Reinert, 2009).

Manufactured goods leadership is moving slowly from the developed country into developing countries, many advanced economic countries experienced industrialization, while the advantage for them switched to commercial and financial services and all services in general.

Many former communist countries have the opportunity after collapsing of the Soviet Union to develop some industries or services or join some economic blocks after they open up to the world having the advantage from the low labor cost relatively, this gives them the opportunity to raise their shares of the world trade (Batiz, 2003).

It is well known that countries with less distance are willing to collaborate in businesses more than countries with far distance and this is what called gravity theory, it leads to many economic unions and this is actually explaining why mostly the unions, unities or federations are getting more successful than others.

Usually, the most developed countries export more valuable products, cars, and electronics as an example and importing less valuable products like raw materials and primary products like food, coffee sugar, and bulk iron, coal ,,,,,etc. Blocks like European Union dominate the world export by value, the greatest volume of trade occurs between developed countries, rich countries and especially the industrial giants Japan Germany, GB, etc. (Agosin, et, al. 2003).

The Figure 6 below shows the value of international trade in goods and services in 2018 for some selected countries, it is noticeable from the diagrams that EU has the most valuable traded goods and services by about 5550 Billion USD for total exports and imports, it worth to mention that exports are more than imports that almost equal to the USA imports while the USA exports are less that EU'S. USA total imports and exports are about 4700 billion USD. China occupied the third place. Other countries as individuals are far away in the list.

Figure 4: Value of international trade in goods and services 2018

Value of international trade in goods and services, selected countries, 2018
(billion EUR)
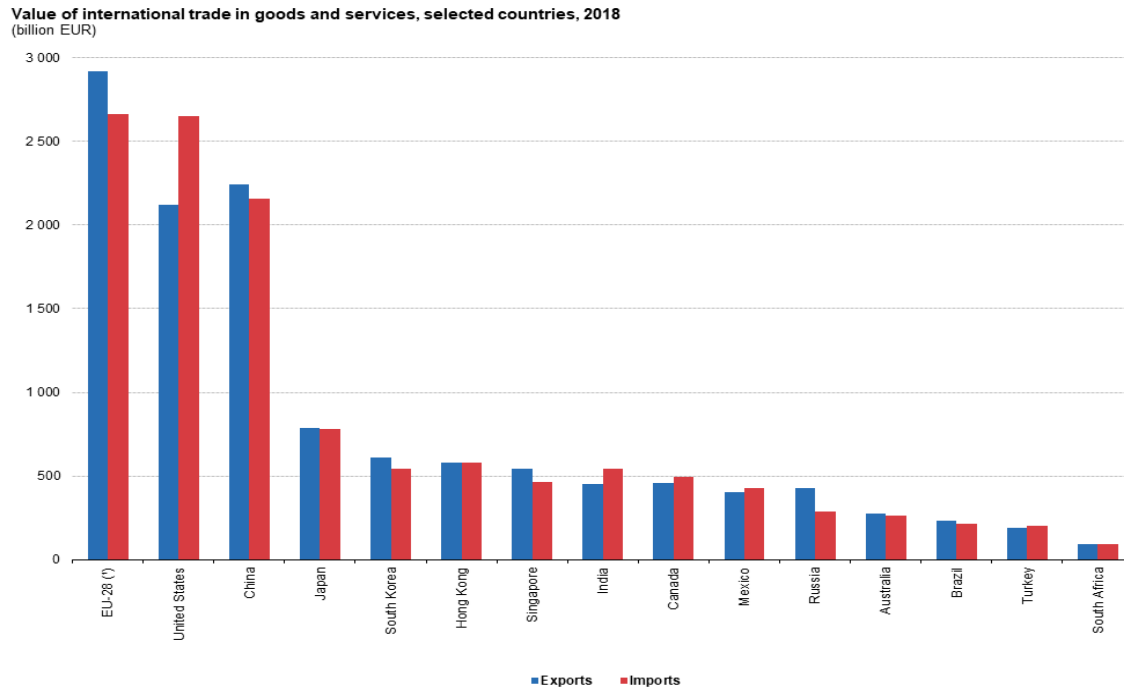
Source: (Eurostat, 2019)

Over the years all the developing countries have more share in international trade, in the last few years the term "south-south trade" raised up express the strong relationship between economies of the southern part of the world who has more shared in the manufactured products and the trade structure overall. in 2017 the growth in merchandise recorded the highest for Asia by 8.1 % from 2016, commonwealth recorded the 2nd highest by 7.8% middle east came last by -2.2 %. When speaking about Asia we are speaking about three of the most dynamic emerging economies: China, India and South Korea. China scored a huge improvement in the world trade raising its figures as below (WTO 2018).

Table1: China Exports and imports and change between 2000 – 2017.

year	Exports (billion USD)	Imports (billion USD)	Trade balance (billion USD)
2000	249.2	225.1	24.1
2017	2279.2	2109	489.2
Change %	915	937	2042

Source: own calculation based on information from WTO

From a commodity aspect: Related to the source or the type of structure of the pattern of international trade, we can start to identify two basic sources or components that make the purpose of international trade they are goods and services.

International trade in merchandiser is a buy and sell, exchange or transaction in the ownership of tangible physical assets or items, it is exchanged across national borders and international coordination of production implied through multinational firms. Gathering the data for trading through borders is easy from both sides customers' documents, reports on the national or the firm levels. But the multinational firms have a harder way to gather the data as it is collecting from the surveys in the level of intrafirm or through the customs declaration that include specific information about parts ownership (Suranovic, 2010).

IMTS shows that Following declines in 2016, as we will see in Figure 5 below, the value of world merchandise increased by 11% in 2017 derived mainly by increasing 28% increase in exports of fuels and mining products it may be due to rise in oil prices in 2017 comparing to 2016. manufactured products increased by 8% and still the main component of the exports in the international trade structure, with 2% of manufactured iron and steel export, also 8% for agricultural products increase. Despite the increases for all major values remained below the recorded level for 2014.

Figure 5. Exports of world merchandise by major product groups 2017
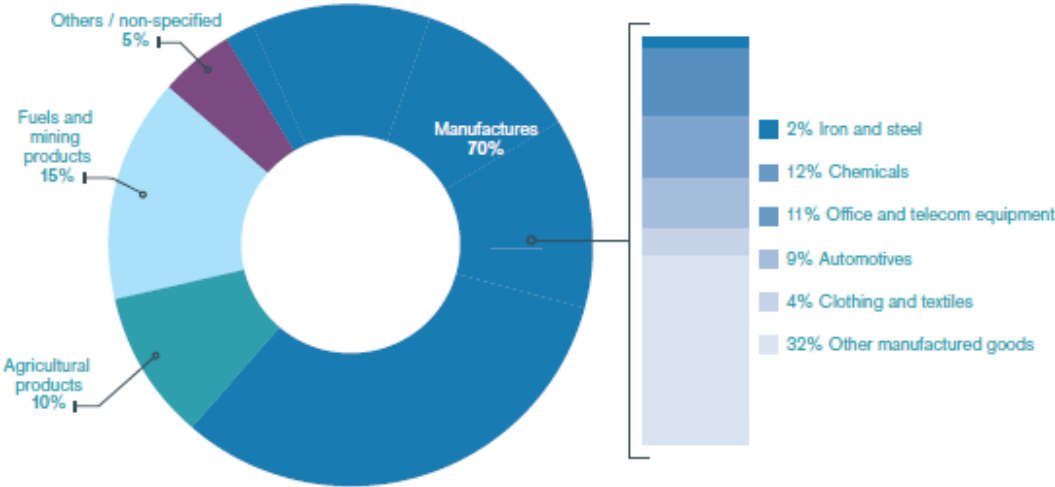
Source: world trade, 2017

Since my study is regarding one of the manufactured goods we can see that EU still the largest exporters of manufactured goods in 2017 with a value of 4.67 trillion USD with a recorded increase of 9% yearly with about 39% share of the world exports of manufactured goods. Regarding the goods mentioned previously China reached 2.13 trillion USD with 8% more than 2016.

Trade in services:

Now it is time to mention some information about an essential fraction of the international trade, specially these days, it is the trade in services. The growth in the sector specially the last recent decades and I can be more specific about the last two decades indicates to high quality data on international trade in services (WTO, 2018).

World trade in services has increased rapidly since 1980, in an intensive way. In the figure below we will notice that the whole world recorded 8% in exports increasing comparing with the previous year, Africa and middle east imports remains less than their exports the highest increasing portion was CIS countries.

Figure 6: World trade in commercial services by region 2017 (annual change from 2016 in percentage)
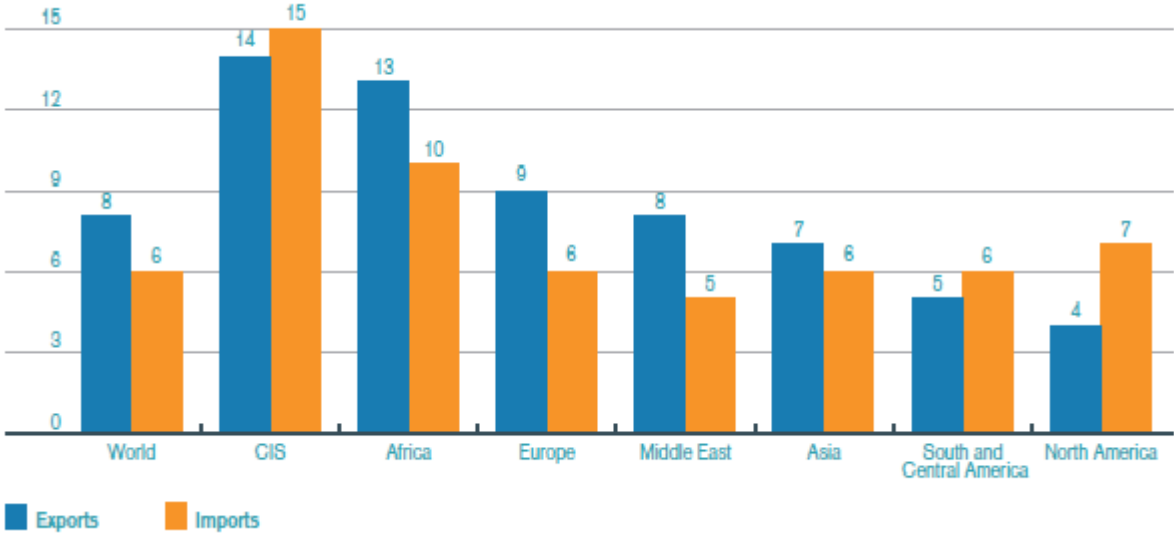
Source: (WTO 2018)

Service sector trade, in 2017 services calculated about 75 percent of GDP, 80 percent of employment and two-thirds of FDI inflows in OECD countries. Since my research is about one of the goods trade I will not go deep into the role of the service trade itself but I will try to focus on the role of enabling conditions for manufacturing and sequentially import and foreign trade (OECD, 2018).

Services are a diverse range of intangible products and activities that sometimes are hard to separate from goods when it comes as one package with merchandise as a supporting service for an initial product. Services properties that it can't be stored it should be served once produced, so it is produced to order or demand of specific type of consumers. Examples of services are too much to count, banking services, touristic, transporting, education, health care, insurance, consulting, accounting, digital services, etc.

Until 2002 international trade in services considered typically trade between one resident a country with another person not resident since many services needed to be ordered after move one of the two parties one time at least to another party residence to contract the deal.

As a result of its nature, the services trade was not easy to measure and during my search, I found that OECD developed an indicator to measure the district on the services sector and how does it affect many different sectors of life related to foreign trade, this indicators name is STRI services trade restrictiveness index. The strong effect on services exports explained by a negative relationship between this indicator and sector performance indices. Regarding that suppliers are less competitive abroad as a result, a negative relationship also found between the STRI and imports, exports and and intra-industry trade in the sector of manufactured goods (OECD, 2018)

The world has witnessed a surge in cross border data. The transformation in the digital world has reduced the cost of other shapes of trading and make it easier, international trade legislation facing many challenges regarding the fast spread of digitalization not regarding managing the disruption but also ensuring the inclusively benefits for governments (Lewis, et, al. 2018).

Basically no specific recognized definition for the digital trade, we can recognize that not all digital trade can be digitally delivered, for instant buying an E-book is traded and bought digitally, paid the same as well, but delivered as copied version physically.

The flow of digital information around the world more increased more than double only between 2013 and 2015, another sign also is that in 2016 companies and individuals around the world sent 20 times more data across borders than they did in 2008.

There are already signs of the economic value of the new shape of globalization, this era of data has added value slightly more than 2.7 Trillin USD to the global trade in goods (Lewis, et, al. 2018).

3.5- Factors that affect foreign trade:

Factors affecting international trade are varied and some of them are relatively related:

Impact of inflation: As inflation is when we are paying more than before for the same goods or services, it affects imports and exports basically through the influence on the exchange rate, so it is related normally with the strength of the currency. Most commonly indices to be used in the inflation measurement is the Whole Sale Price Index it is defined as an index that measures and tracks the change of goods' prices before reaching the last consumer sold as bulk and traded between businesses it is reflected on Inflation as below:

$$Inflation\ rate\ (\%) = \frac{\text{WPI (A)} - WPI(B)}{12\ \text{(for months)}} X\ 100$$

Where WPI (A) Wholesale price index at the beginning of the year

WPI (B) Wholesale price index at the end of the year.

High inflation in the domestic country means domestics produced goods are more expensive than foreigners, so domestics will have higher inflation ends up with buying foreign goods. And Foreigners spend less on domestic products, the result imports exceed exports for domestic country, finally, we will have a deficit in the Balance of Payments (WTO, 2013).

Exchange rate: The exchange rate defined as the price of one currency in terms of another currency fluctuating usually depends on the demand for this currency. Higher demand for a country's currency leads to a rise in the price of this currency. Because of the big and major impact of the exchange rate on international trade, world trade we can see many examples in history prove this theory. Rising the value of a country's currency leads to a decreasing in the account balance as imports are increasing and exports are decreasing. Exports will be expensive

to be bought from foreign countries when a currency appreciates, so than the demand for products will decrease (International Monetary Fund, 1984)

Impact of gross national income GNI:

GNI is the total domestic and foreign produces alleged by residents of a country inside and outside the country. It is consisting of gross domestic product GDP plus factor incomes earned by foreign residents subtract income earned in the country from foreigners.

$$GNI = GDP + (Income\ earded\ from\ citizens\ abroad -$$
$$Income\ remitted\ by\ foreigners\ inside\ the\ country)$$

Where also $GDP = C + I + G + X$

(C): consumption, (I): business investment, (G): government spending, (X): exports – imports.

If the GNI level for a country increases higher than other countries the current account expected to decrease, as the GNI increases the consumption expected to increase what most likely means higher demand for foreign goods and exports as a consequence (The balance, 2019)

Impact of government restriction (Internal and external): normally government imposes these restrictions on certain products on a different level to protect local producers, for safety reasons, for health reasons or to apply political sanctions. International trade restricted from the government by applying some tools like tax imposed by the importing company when an imported good cross the borders named Tariff, payment by a government to a domestic producer up to the quantity called Subsidy, and imposing the limit on the imported quantity called Quota (International Monetary Fund, 1984).

Competitiveness: It is really hard maintaining current firms' market position with this growing in a correlation between market and competition. Defining the term, competitiveness is a measurement of a relative ability of different countries to provide different products or services. It takes into account the cost of employment, government regulations, efficiency and readiness to run a business. By tending to gain a higher level of international trade from enterprises we can see the impact of competitiveness. (James, 2014).

Globalization: by using this term we are describing a general tendency for national economies to become more integrated with each other, because of the combination of advanced communication technologies, increased capital flows, reduction of trade barriers and logistic technologies. It is considered the trend that raises the international trade portion in the economy over the last three decades. Geographic location: it has a big impact on the trade position of the territory of the country, related to how close to vendors and customers, how reachable to the transportation system. (James, 2014).

Demography of the country: the population has a critical impact over the history, rapidly increasing in population comes with increases in demand mostly not meeting with producers' expectations leads to import increasing in the developing countries, since most of the developed countries are not having the same conditions we cannot judge the impact of rapid increase. (James, 2014).

4- Iron and steel:

4.1- Iron and steel specifiers, historical review:

When investigating the Iron and steel sector and its particularities, it is first of all worth basically defining and understanding the key theoretical aspects related to the whole sector, and explaining the main terms to be subsequently used and more deeply investigated in the thesis.

If we think about most common elements in earth crust it comes fourth, in metals it comes second, it is used from about 7000 years, one of the strongest metals to depends on and cheapest as well, it is the iron. It is an essential element for humans we need it daily, about 14 Mg from iron is a normal person recommended daily average. Itself the word iron comes from Anglo Saxon word Iren means holy metal. It is transforming to be Steel even much stronger and harder element has a major role in the industrial revolution, Burj Khalifah, the Statue of Liberty and many famous buildings and statues were formed or structured basically from this element. It is an influential indicator in the world's economy, it is the beginning of many industrial changes and the title of global revolutions. (Bhadeshia, et.al, 2017)

So basically what we use from steel and iron comes from what called Ores found in nature, Ores are rocky minerals formed naturally in many shapes each one contains different amount or

percentage of iron, I will later highlight the operation of manufacturing the iron and steel from its raw shape (Miodwonik, 2014).

Historically, archaeologists found that 7000 years ago Ancient Egyptians used meteorites residues to make artifacts. In Iraq and Syria, there were many evidences that people used iron smelting, in this era iron was as ceremonial metal, it was about eight-time expensive than gold so it was not used in everyday life as discovered Assyrian writings said. Between 1300 and 1200 BC the iron started to be cheaper as more and more people can extract. As we mentioned before making steel occurs by adding carbon to iron, probably that happened by accident so far there is no incident recorded, what is clear that human started to do about 1000 BC thereat was the start of the iron era and the end of the bronze era were iron replaced bronze in daily use (Becker 2017).

Until the year of 1708 iron was restricted to small scale smelting of iron ores and was used only for some secondary industries, some accessories, fighting weapons since it was smelting by using charcoal what was destroying huge areas of forest for fuel since 1500, so legislation in the UK banned harvesting of trees for charcoal in additional it was not providing the proper heat for smelting the iron. After that, they start to use coal but the result was very poor quality.

The milestone in the iron industry was the invention of the Darby family in England, they develop a method to use not coal but coke to make the cast iron. Coke was smelting with limestone and iron ore. The newest notion was that controlling the percentage of iron ore is not controlling the heating level but also control its properties and the degree of hardness, widely this considered the heart of the English Industrial Revolution and of the main reasons kept the UK on the leader nations till now (Burgayev, 2001)

The year 1856 was another important year in the history of the iron and steel where Henry Bessemer announced the oxygen converter, a basic but can be very big oxygen stove can convert iron to steel in very huge commercial quantities. After that another furnace was developed by brothers Siemens it was the electric one, then and recently still used the modern basic oxygen (Burgayev, 2001).

Figure 7: share of world iron ore production 2018

Shares of world iron ore output

- Australia (34%)
- Other (22%)
- Brazil (19%)
- China (16%)
- India (5%)
- Russia (4%)
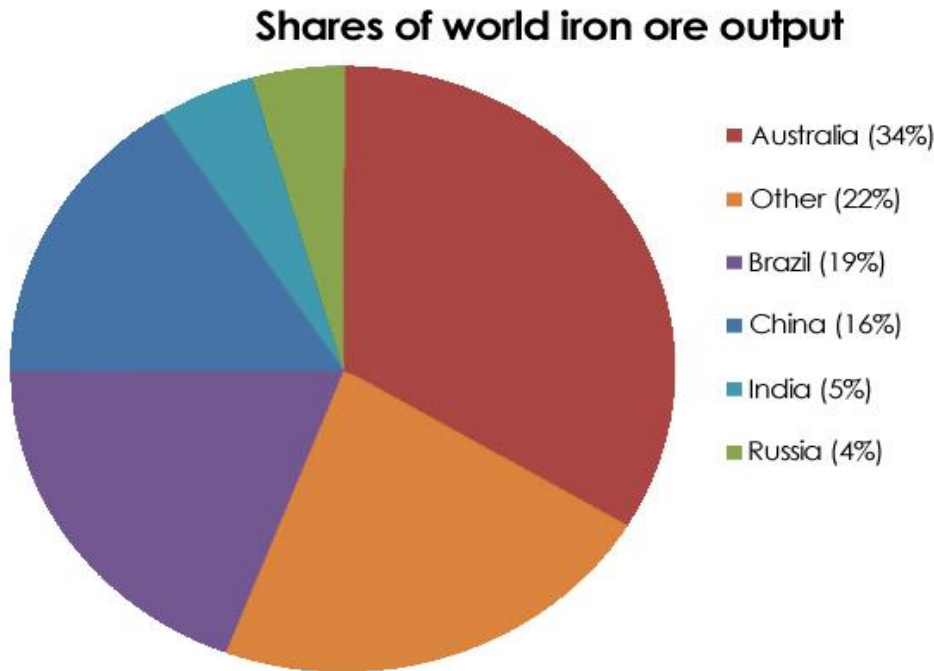
Source: (World Steel Association 2019)

4.2- Types of Iron and steel

When speaking about Iron we might all think that it is this hard strong and hard metal can be reliable to hold buildings shapes space rockets, etc. but that is not pure right cause what we are thinking about is not pure iron. What we think about actually the iron alloys combined with carbon and other metals. Pure iron is a white silver element easy to work and shape by normal hummer. Pure iron always combines easily with oxygen forming oxides elements –that is what we call rust in unformed daily life-, in nature this oxides combination called ore and that consequently, we cannot perceive pure iron in nature. Generally speaking, iron divided into two groups known as ferrous and ferric or iron II and iron III, they have different chemical properties I will not touch since it is not our major topic (Burgayev, et, al, 2001)

As I mentioned before different ore contains a different portion of iron, pure iron soft, so much of the iron we use every day are iron alloys mixed with other elements especially carbon to shape a stronger product. Steel is an alloy of iron contains up to about 2 percent of carbon while iron

forms contain 2-4 percent. Thousands of different kinds of iron and steel can be shaped only by change the percentage very slightly. In general, less carbon leads to a softer product.

Some examples for types will be mentioned below:

Pig iron: a very basic raw iron produced in the form of chunky molded blocks. It is made by heating and iron ore in a blast furnace. The furnace is an industrial fireplace shaped like a cylinder with a huge draft of hot air called "blasts". This Furnace operates continuously for years of time without being switched off. Ore reacts chemically with coke stealing the oxygen from it and leaving a pure liquid iron, while limestone's role in this operation is to remove the other parts of the rocky ore like clay and sand. The result is a mixture of 90-95% iron, 3-4% carbon and other elements like phosphorus, silicon. and manganese (Lu, 2015)

Cast iron: it is simply pig liquid iron that has been poured into a mold and allowed to cool and harden to form a finished structure shape like gear, pipe, or big girder for a bridge, so basically it contain the same percentage of pig iron what makes it very brittle and hard. The shortcoming of the cast iron is: a- It rusts very easily due to containing small percentage of oxygen, b- it is very hard and tough to shape it again even under heating due to a high percentage of carbon. the statue of freedom in New York, is made from this product (Bhardaj, 2014)

Wrought Iron: It was one of the most produced and used iron in the mid of the 19th century before they mastered the steel. It is an iron alloy with a lower carbon content to produce it after smelting the pig iron and before cooling it they have to add some leftover waste. It is softer than cast iron and much less tough, so heating it and changing its shape is relatively easy. It is also less prone to rusting from cast Iron due to lower oxygen percentage (Lu, 2015).

Types of steel:

Carefully speaking, steel is another type of iron alloy, the main difference the lower of carbon percentage the steel has. It is such an amazingly useful material called "son of iron", there are literally thousands of steel types, each is formed or designed by specialists to suit a particular job under very accurate conditions. I will mention four groups of steel as scientists generally measured.

Carbon steel: it frames the majority of steel produced each day, what called carbo steel, it contains much less than 2 percent carbon, broadly we can say that steel groups with 1-2 % carbon are called high carbon steel and it head to be hard while steel with less than 1 % is softer

known as low carbon steel like wrought iron, car bodies, and warship hulls as it comes to engine parts and steel cans are made of carbon steel.

Tool steel: made from iron and carbon as well but with some elements such as nickel, tungsten, and molybdenum to give extra resistance to wear with hardness, this type of steel used especially for machinery and machines parts due to the hardness properties it has. Tool steel made by toughened up process called tempering, in this process steel first heated to a high temperature then cooled very quickly after that once more heated to a lower temperature (Bhardwaj, 2014)

Stainless steel: medical instruments, household cutlery, most of your indoor daily used steel are mostly stainless steel. It contains a high proportion of chromium and nickel, gives it the resistance to corrosion and many other chemical reactions, it is easy to polish, sterilize and clean. (Lu, 2015).

Alloy steel: the same as applied for stainless steel, on and iron with other elements such a copper, chromium manganese, silicon, vanadium, and nickel. This alloy steel's extra elements make the difference by providing additional features and improve the properties of the normal carbon steel. it makes it stronger and harder as well solid and long life element (Bhardwaj, 2014).

4.3- Steel and iron making process and forming:

Basically there are four major ways to produce the steel and iron from its raw shape:

Basic oxygen process (POB): The ore in this process placed in a giant egg-shaped container open from the top called furnace of basic oxygen which is similar to an ordinary blast furnace, after that it is rotated into one side only to pour off the finished product. The air draft used is replaced with an injection of pure oxygen through a pipe called a lance. The idea firstly invented by sir Henry Bessemer in 1855 (Bhadeshia, et.al, 2017).

Open Heath process (regenerative open hearth): also a giant fireplace in which iron ore, or even scrap steel are burned with limestone until they fuse together. More iron ore to be added the unwanted carbon combined more with oxygen, the defilements are removed as slag and the mixture turns into molten steel. In this process, skilled workers are preferred due to the many

processes of cooling and heating many times, till they have the right percentage of carbon (Bhadeshia, et. al, 2017).

Electric furnace process: the idea of this way is to keep the process in a totally close furnace, it uses electric furnace within it there are electric arcs to melt ore iron. Since they are much controllable, it is used to make higher specification alloys (Burgayev, et. al, 2001)

Melting scrap: it is the easiest way and the cheapest to do since you have the final product scrapped all you need to do is melting it and shape it or form it in the shape you want.

Figure 8: Steel production process for the main four ways.
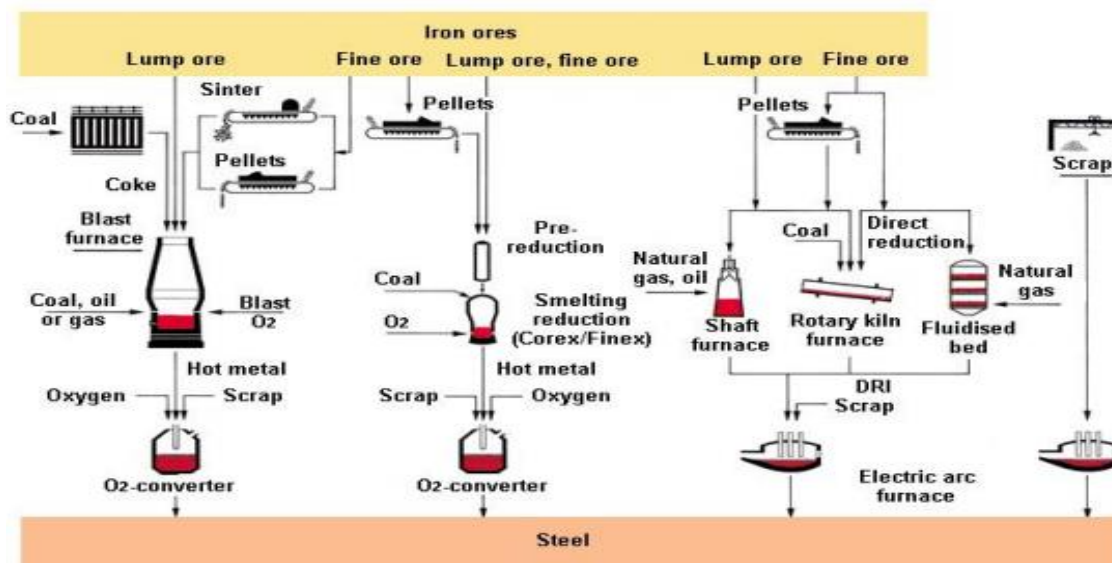
Source: (Degner et al., 2008)

Steel forming and casting:

Steel forming was a relatively small job but for skillful workers since steel was not this popular metal and has several difficulties in producing. All this changed after Bessemer's age as I wasn't to call what was a change as u mentioned before in the steel history. Large volumes start to be produced in the shape of an ingot with about seven tons' weight. The ingot was stripped from the mold, reheated and then resized by hot rolling, the result is steel billets of 3-4 meters long bars and later to other shapes in final production.

The billets production was an obligatory step before having the final product, this was popular until 1960 when United Steel Company started for the first time using the continuous casting. 2%

35

was the percentage for continuous steel produced compared with all steel production, in 1970 it was 5% raising to 64% in 1990. Until today the raw steel as billets bar still been in the trade for different reasons like prices special standard of using from many customers. The continuous casting was the reason for a new type of steel plant so-called "mini-mill" (Bhardaj, 2014)

Here I will mention some of the final and semifinal steel products:

 Plates, hot rolled coils, picked hot rolled coils, cold rolled coils, finished cold rolled coil, hot dip galvanized steel, electro galvanized steel, rebar, sections, UO pipe (big industrial sizes), welded pipe, seamless tube, wire rods, tinplate, tin free, engineering steel and Organic coated (Arcelormittal 2015).

4.4- The major application of steel

A I mentioned previously in paragraph the uses of each one of the most popular steel products, I will indicate briefly the importance of steel use, and how it is overlaps each sector of our daily life.

Figure 9: World steel uses by sector year 2018

Industries that use the most steel

Buildings and infrastructure **50%**

Mechanical equipment **16%**

Automotive **13%**

Metal products **11%**

Shipping, rail and transport **5%**

Electrical equipment **3%**

Domestic appliances **2%**
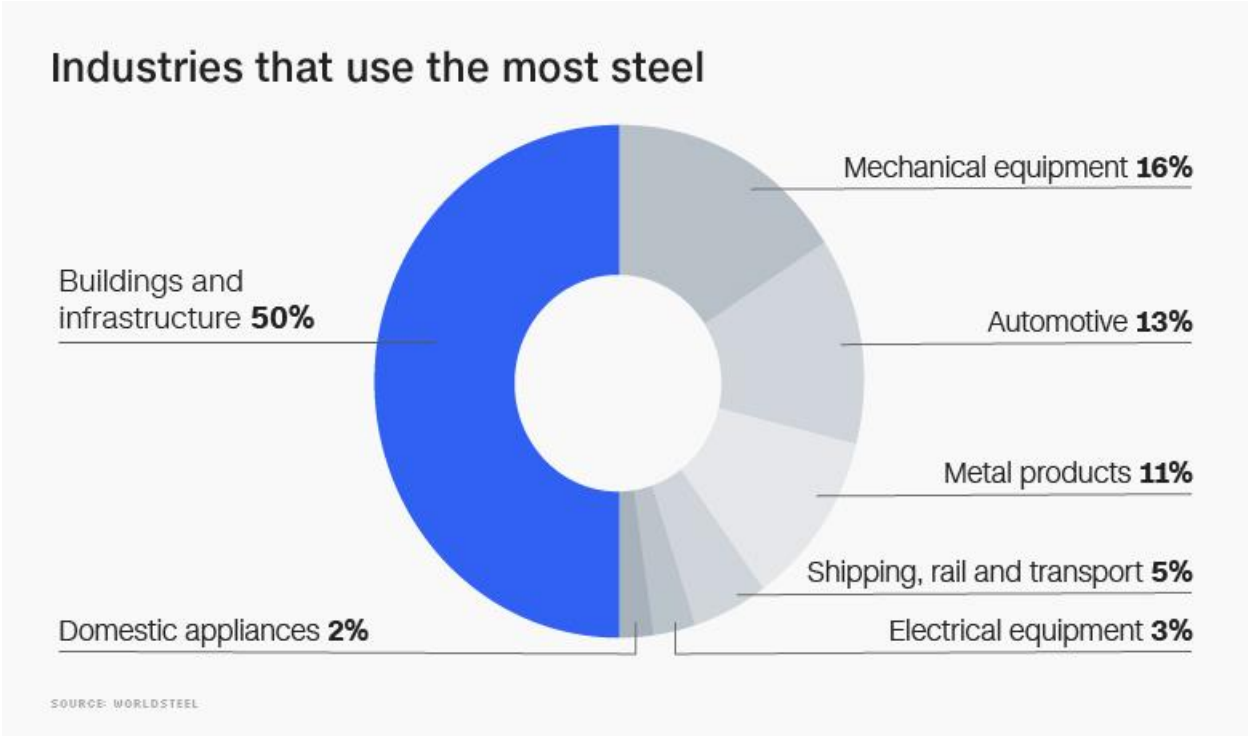
SOURCE: WORLDSTEEL

Source: worldsteel.org

From figure – we can see that constructing, building and infrastructure which includes products such beams and pipelines determine half of the steel uses globally, steel of various types can be designed to meet the unique requirements of any individual infrastructure projects, allowing it to be incorporated into components in any kind of environment.

We can notice that the mechanical equipment comes 2nd by 16% like tractors, bulldozers, machinery that makes cranes, car parts, hammers and shovels, all the big factories forming machinery as well as those make the steel itself into the products I explained previously (Bell, 20)

This third greatest use of steel is on average about 950 kg of steel used to make a single car, according to the WSA. About a third of that is used in the body structure and exteriors. Advanced high strength steels which are lighter in the weight than traditional steels and are made using complex process reaches about 60% of the modern body structure of the car.

Metal products take 4th place covering various consumer products such as packaging for food and drinks, razors and furniture (Llewellyn, et.al, 1998).

5th, we are speaking about other transportations mainly ships trains and train cars, some parts of planes are almost all made of steel. specially shipping sector that carries 90% of global cargo, beside that 17 million ship's containers are made of steel. steel show up in trains, wheels, axels bearings and motors, airplanes' engines and landing gear.

Electrical equipment involves applications in the production and distribution of electricity. That means transformers have a magnetic steel core, generators, electric motors, steel-reinforced cables (Llewellyn, et.al, 1998).

According to the American Iron and Steel Association, an average size fridge contains 37 KG of steel. clothes washer, dryer, oven, coffee machine, including the body and motors all those home appliances take 2% of the world use, by average about 75% of those products are steel.

4.5- Steel global market: key trends and tendencies:

Understanding the overall structure, general situation and trends in the global steel market is a major task within the framework of this paper, I deduced from my readings regarding my topic that it should allow understanding the practical situation in the steel market in Syria.

4.5.1- worldwide steel production:

As we can see from figure 10 below, steel production increased at a spectacular rate within the last 70 years. The period after the second world war has witnessed a boom in the steel and iron industry due to surpassing the economic rescission during the war and to build up the destroyed cities and infrastructures. that will be similar to my study in the matter of destruction that happened in Syria.

The era between 1970 and 1991 includes not this special economic events, the world was gaining the positive results of the after second world war era and start to be saturated of steel production, the FDP was growing steadily in this time (Fish, 1995)

By the year 1991 after the Soviet Union collapsed when the economy started to open up, steel production raised slightly, but significantly after 2000 due to the strong economic performance worldwide especially china. In 2014 World steel output exceeded the 1 Billion MT from 750 Million only eight years previously driven by prospering growth in the far east and India. In 2007 world steel production was 1.3 Billion MT (Hudson, et.al, 2017)

In rates from 1991 to 1995, it was 0.5% declined growth in production, followed by 2.4 % positive growth until 2000. Then the big acceleration growth of 6.2% happened between 2000 and 2005, and a more 8.3% stunning increase only within two years between 2005 and 2007.

The world steel industry slowdown from 2007 to 2009 to be about 1300 MT because of the economic recession especially it was very related to the real-estate sector which is in a very close correlation with construction and automatically steel sector (world steel Association, 2016)

Figure 10: crude steel production globally in Million MT 1950 - 2018
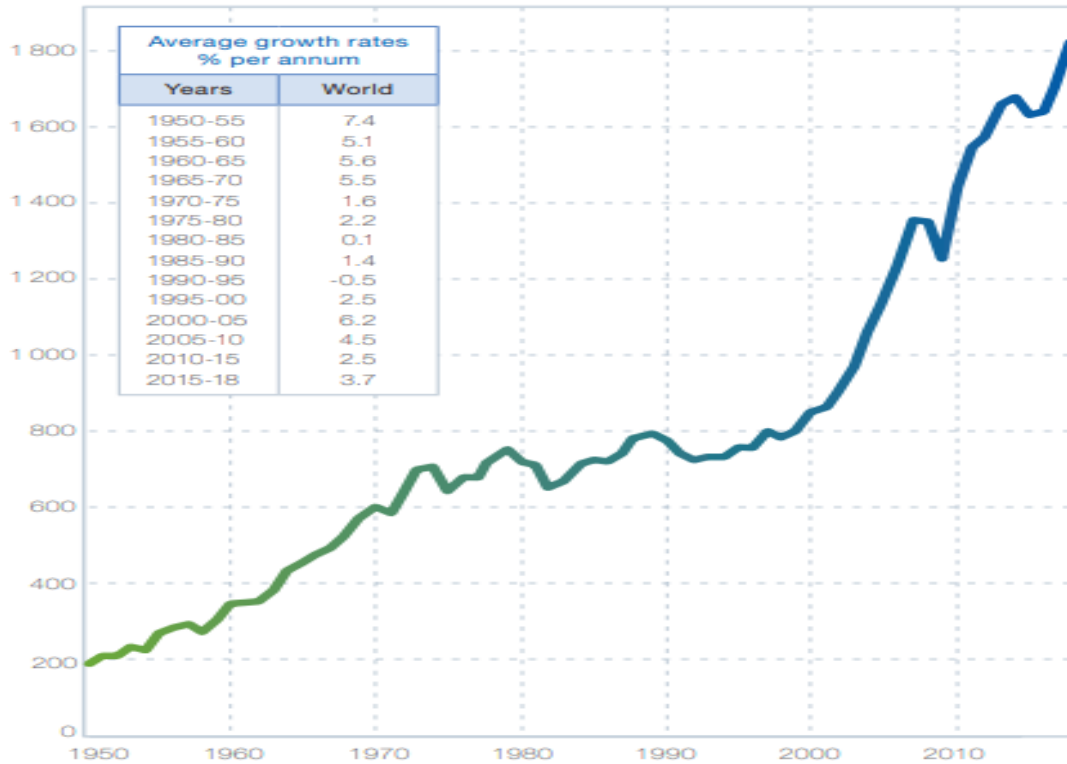
Source: (World Steel Association, 2019)

In 1900 the USA was producing 37% of the world's steel, but with centralized investment by china and the industrial development after the world war in Asia, by 2017 China alone account 50% of world steel production with about 24% for Europe including the (post-Soviet Union) and whole North America down to 6%. One of the reasons to shift the industry from North America was the efficient Chinese doing in melting the scrap with as mentioned before in my study o because it is considered the easiest and cheapest way to form the steel (World Steel Association, 2019).

Table2: World crude steel production development 2016 - 2017

	Level, thousand mmt			% change, year-on-year		
	Dec 2017	2016	2017	Dec 2017	2016	2017 / 2016
EU	13 958	162 136	168 740	8.3	-2.4	4.1
Other Europe	3 493	35 919	40 621	12.3	5.6	13.1
CIS	8 425	101 928	101 957	-4.2	0.5	0.0
North America	9 504	110 624	115 955	5.1	-0.3	4.8
South America	3 865	40 220	43 728	24.5	-8.4	8.7
Africa	1 187	11 669	13 519	18.4	-4.9	15.9
Middle East	2 698	29 025	32 449	7.6	7.6	11.8
Asia, of which:	92 875	1 107 912	1 165 112	1.0	1.6	5.2
China	66 151	804 803	845 030	0.4	0.8	5.0
Oceania	538	5 837	5 985	5.0	2.1	2.5
World	136 543	1 605 270	1 688 065	2.8	0.8	5.2

Source: (World Steel Association, 2019).

Table 2 above illustrates the production maintained its momentum in 2017 about 5.2% expansion. Regionally EU expressed 4.1 % yearly growth in 2017 explained by 2.6% contracted increase in UK steel output, 14.8% for Poland as a clear momentum.

CIS region expressed 0% growth with a big difference in members score, 6.4% falling for Ukraine flowing the political conflict there. 13.1 % growth for Turkish following the big step in scrap melting that attracts many scrap sellers in the region. Russia production increases by a modest 1.3% for the whole of 2017 due to wrong timing to glean the production for this year (Balan, et.al, 2016)

Asia, in general, gained the same as global score with 5.2% growth, separately china scores 5.0%, Korea 3.7%. India stayed in progress with about 6.2% presenting solid steel production strength.

South America witnessed a rebounding from the previous decline in the industry. 8.7% was a brilliant percentage in 2017, following the experience of the biggest two economics' recovery in

steel production Argentina with 12.1% and Brazil 9.9% growth in 2017, Venezuela sanctions has an impact to drop down the production 15%.

Speaking about the Middle East increasing 11.8% in production was a good score led by Iran with 21.4%. in opposite Saudi Arabia decreased by 12.7.

Africa scored 15.9% represented by 35% growth in Egypt happening because of the strong local housing needs and the developing in local producers' industry.

4.5.2- Worldwide steel consumption:

Figure 11: Global steel consumption 2010 - 2017
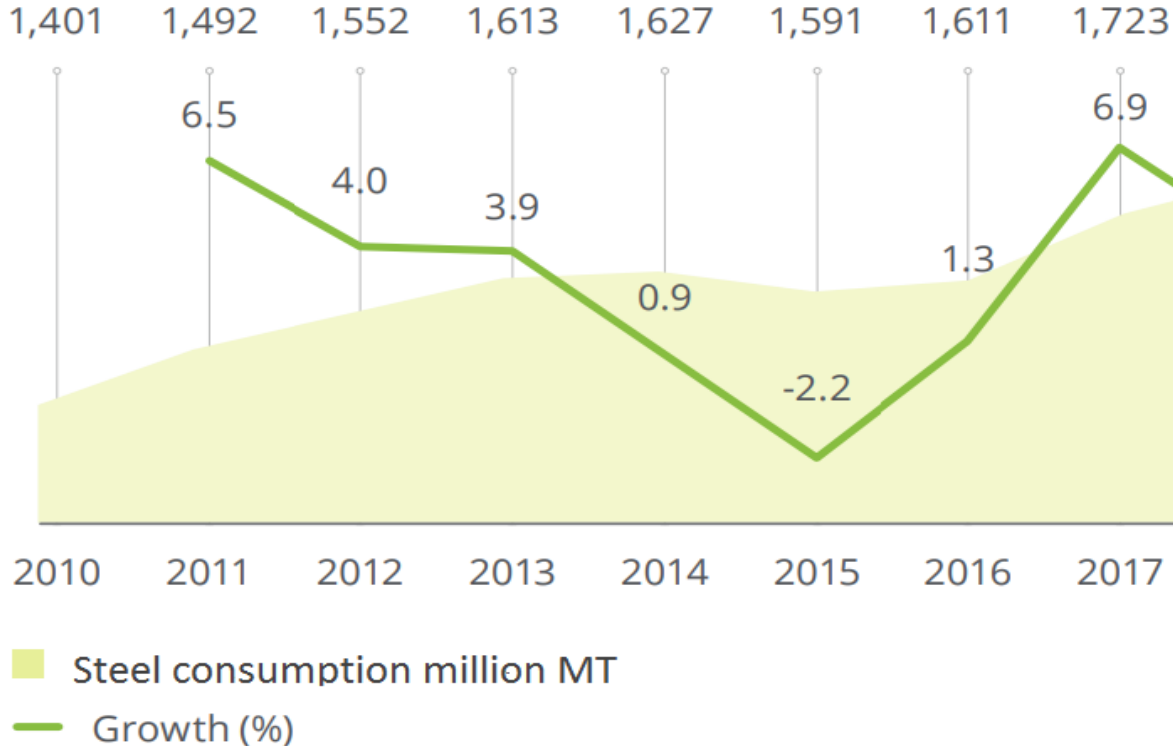
Source: (Deloitte, 2019)

The figure above shows that consumption in 2011 increased by 6.5%, the regions that performed better than the world average was Asia overall and the Commonwealth of Independent States (CIS) by 9.1% and 11.3% respectively, than the growth were increasing digressively. The consumption fallen down in 2015 for the reason that local consumption has fallen down in china as a result of the Chinese macroeconomic situation while it was shifting from being investment-

oriented into consumption-oriented, production exceeds consumption in 2015 by 125 million tons (Vernimmen, et.al, 2019).

Figure 12: Steel consumption by region percentage from globally for 2007 and 2017
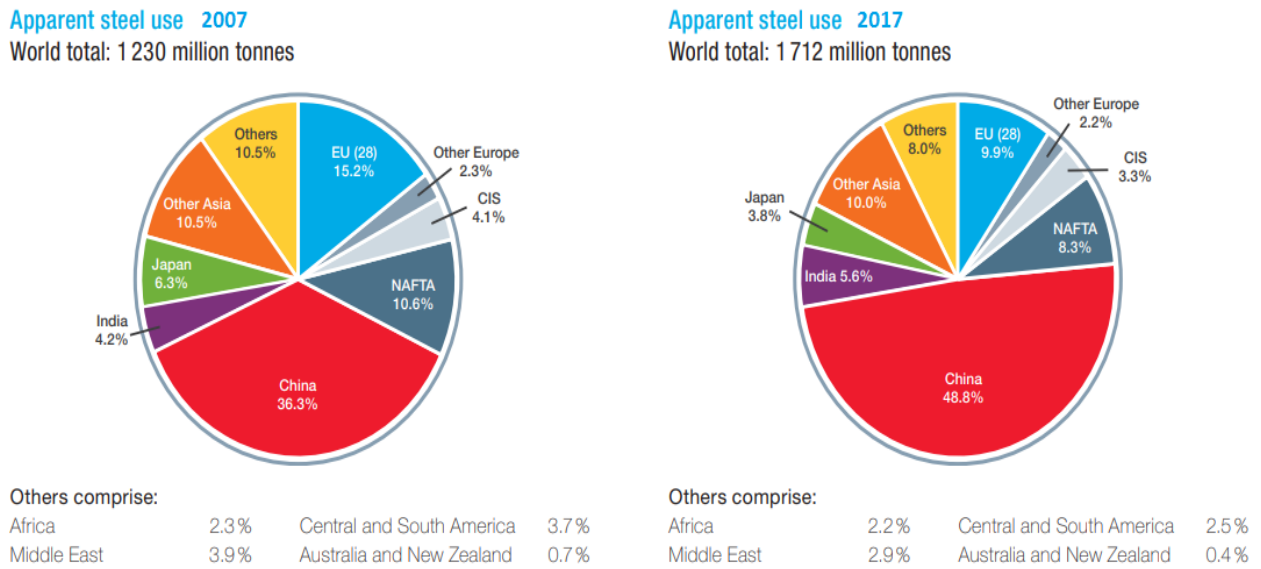
Source: (World Steel Association, 2018)

Figure 12 above illustrates the bigger portion of consumption is going to China, that s briefly explains the decreasing in most of the other regions' portions, due to the fast economic growth in China which is accelerated so fast compared with steady stable economic growth all over the world, except India in their turn also increased their shares in global consumption. So China obsessed the decline for almost all other regions portion within 10 years.

explained by GDP growth in 2017. The construction sector remained the key to overall steel demand as it accounts for two-thirds of the whole consumption in the country. Growing consumption comes from growing demand supported by government rewards in 2016 were a sign of this growth in 2017.

EU: the union lost about 35% of its consumption from 2007 to 2017. Even a strong market for automotive in 2016 gives the boost for increasing consumption in 2017 since the Automotive

sector accounts for 20% for all steel consumption in the region, besides unemployment declining which encourages more construction and home appliances production.

Japan's steel demand for finished steel products leads to a 1.9% growth in 2017 to have a portion of global consumption of 3.8%. While Korea steel consumption increased by 1.2 % in 2017 up to investing in the housing sector according.

while NAFTA had a steady growth of 2% in 2017due to good performing of the construction sector in the USA and Auto sales also is contributing to the growth of steel demand.

Figure 13: Steel consumption per capita for some countries 2013

	Steel consumed (kg per capita)	Car exports ($ billion)
South Korea	1,057.4	44.3
Taiwan	793.4	9.8
Czech Republic	546.8	15.3
Japan	516.4	92
China	515.1	4.6
Germany	460.2	148.7
US	300.2	57.1
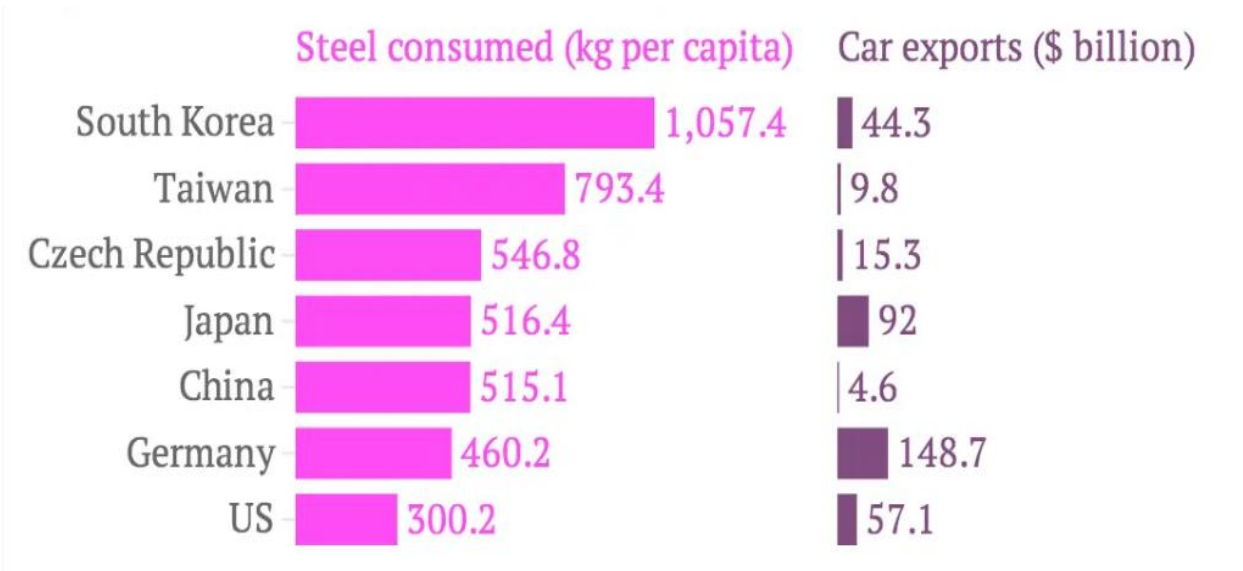
Source: (Netherlands Environmental Assessment Agency, 2014)

As my study is about import, on behalf of it there is an important matter it is consumption. I choose the figure above to explain the reasons that lead to raising the consumption per capita for countries' residences. We can interpret easily that cars export is an important reason for high demand in some countries that is what explained for South Korea, Czech Republic, the USA, and Germany. But not the same for Taiwan and China what explains the major role of the construction sector in consumption once again.

4.5.3- Worldwide steel trade (import and export):

In many ways, steel is an ideal subject for any global conflict or competition. It is an old industry back in history, with an internationally available production and product technologies. This Trade has great national importance for reasons of industrial output, unemployment, regional structure linked to other sectors in the economy and strategic defense alertness.

This Trade has been subjected to great competitive strains all over the world many times. The main players for this game have been changed many times, each change was expressing a change in the world global trading leaders, and each move in the bigger portion of this commodity was coming parallel with a change in the balance of power in the world. New players have emerged not only with low raw material and labor costs but also with a pioneering example of technology. Patterns of international trade of steel in the volume and direction reflect these market-driven forces (Jones, 2017).

Most of the competitive shifts in the world steel trade were not difficult to predict using traditional economic analysis, based on this analysis a big range of strategic and tactical business and policy decisions will be made. A significant restricting is happening in the world iron and steel trade, with rapidly developing economies such as China, South Korea, and India as key centers to growth in this sector. The developed economies instead in the EU, Japan, and North America are losing their major role gradually.

Based on what mentioned above, through history there has been a great action among the principal pole of competition in the global steel trade. The United States has been highly protectionist regarding this sector, the EU steel trade summarize structural hardness and the lack of political will to be flexible with the global market forces.

Steel as one intermediate good, has benefited from economies of scale. If these economies didn't exist trade will shrink. Forward linkages connect final good producers with intermediate-goods producers, and backward linkages connect the intermediate-goods producers with materials' and suppliers' resources. By locating close to customers and suppliers, intermediate-goods producers create short and direct forward and backward linkages that help to encourage the trade (Jones, 2017).

Here I will go deeply through some factors of production that affects the global iron and steel trade will show their impact in the following paragraphs as figures later:

Locale and Transportation: International industrial trade encouraged by low transportation costs, it allows firms to locate in good regions was shipping costs to major markets are relatively low. The advantage of the location promoted by economies of scale. This means economies of scale and transportation costs have effects in the international steel trade.

An example of transportation importance is the movement of steel production facilities in the United States to the southern western states to meet the market demand for the automotive industry production in Japan and Mexico.

The elasticity of distance as it affects the volume of trade fell by 25% between 1967 and 1995, the reason was the spreading of internationalized production. But still in numbers by the same year of 1995 0.83% lower in trade volume was the impact of 1% larger distance between trade partners (Madar, 2010).

New producers: This factor is so related to my topic and presenting a serious problem in my country that is the case of my study. Inveterate shortage in foreign exchange were a motivation reason for some basic industries such as steel to be constructed by local producers. The domestic production will save the foreign exchange needed to purchase other important commodities from abroad. But one of the barriers is the technology needed for the steel industry is needed to be imported itself, this expenses should be measured with alternative investments' importance for national development. The steel industry considered an intensive industry that needs big financing for governments. This issue commits the world bank to support steel industry investments in some developing countries such as Brazil, Turkey, and Mexico.

The main purpose of this action from word bank was cut down the imports of these products to free the states from the pattern of exporting raw materials and importing finished and semi-finished goods, besides saving the foreign exchange especially these states or developing countries have many crises and they need to save the foreign currencies for that. This strategy expected to show some good linkages backward and forward (Madar, 2010).

Table 3: Steel trade development across major steel producing economies.

Thousands of metric tonnes		2013	2014	2015	2016	2017 Jan-Aug	2016 Jan-Aug	% Change 2017 / 2016
China	Exports	61 083	92 348	110 928	107 531	53 587	75 609	-29.1%
	Imports	14 642	14 734	13 048	13 467	9 018	8 904	1.3%
EU-28 (external trade)	Exports	36 087	36 451	32 998	29 251	19 604	19 379	1.2%
	Imports	27 872	31 931	37 385	41 008	28 863	27 000	6.9%
Japan	Exports	42 406	41 247	40 720	40 452	24 954	27 318	-8.7%
	Imports	5 345	6 657	5 850	5 965	4 256	3 883	9.6%
United States	Exports	12 182	11 581	9 620	8 920	6 796	6 010	13.1%
	Imports	29 727	40 285	35 564	29 918	23 986	19 958	20.2%
Russian Federation	Exports	23 598	26 939	29 605	31 096	20 452	20 207	1.2%
	Imports	6 453	5 644	4 309	4 389	4 047	2 634	53.6%
India	Exports	9 646	9 828	7 117	9 933	10 394	5 959	74.4%
	Imports	7 347	9 310	13 249	9 857	5 894	7 027	-16.1%
Korea	Exports	28 826	31 803	31 077	30 504	21 179	20 065	5.6%
	Imports	18 878	22 268	21 546	23 168	14 041	15 882	-11.6%
Rest of the World	Exports	59 887	63 369	54 615	56 624	40 381	37 404	8.0%
	Imports	86 005	100 690	105 975	110 768	66 665	74 393	-10.4%
World total	Exports	273 715	313 566	316 680	314 312	197 348	211 951	-6.9%
	Imports	196 269	231 519	236 926	238 540	156 769	159 680	-1.8%

Source: (OECD. 2018)

By the year 2007 36% of total global steel products were exported. From Table 3, I will try to interpret some figures and I will start with lighting up that in 2014 2015 when the global production rate as mentioned before was going in a negative value. We can deduct the reflection of this production gab from the trade figures in each of the EU, Japan, India, the USA and even the rest of the world where imports and exports dropped down. While China was jumping in steady steps attributed to the increase of production of iron ore after inventing new technique in mining the ore. South Korea's during these four years had a stable portion of cars' industry market that is why we cannot notice any change in the steel trade balance.

China expressed growth in the export rapidly year after year from 2013 to 2016 even as mentioned before the global production witnessed a drop in production in 2015, compared with almost the same portion of imports, that is explained by improving the quality of semi-final Chinese steel. what we can notice specifically for China and USA regarding the trade war is the difference between 2016 and 2017, when the American steel tariffs applied for the Chinese steel

that caused a drop-down in the export for about 29% compared with 13.1% for American exports (OECD. 2018)

Table 4: World steel trade by area in Million Tons for year 2017

Destination \ Exporting region	European Union (28)	Other Europe	CIS	NAFTA	Other America	Africa and Middle East	China	Japan	Other Asia	Oceania	Total imports	of which: extra-regional imports
European Union (28)	116.9	8.6	13.5	0.5	2.8	1.4	4.1	0.2	10.0	0.1	158.1	41.2
Other Europe	10.0	0.8	8.0	0.1	1.1	0.4	1.0	0.2	1.3	0.0	22.8	22.0
CIS	1.9	0.3	8.7	0.4	0.0	0.1	2.2	0.1	0.4	0.0	14.2	5.4
NAFTA	7.3	2.2	4.0	19.0	6.7	1.2	2.5	3.8	10.7	0.3	57.7	38.7
Other America	1.4	1.1	0.6	2.4	4.2	0.1	6.6	1.2	1.1	0.0	18.8	14.5
Africa	4.8	2.4	6.0	0.1	0.2	2.4	5.5	0.9	1.3	0.0	23.5	21.2
Middle East	1.7	3.7	4.3	0.1	0.3	5.3	6.5	1.0	4.2	0.1	27.1	21.8
China	1.5	0.0	0.0	0.1	0.1	0.0	-	5.5	6.6	0.0	13.9	13.9
Japan	0.1	0.0	0.0	0.0	0.0	0.0	1.1	-	5.0	0.0	6.2	6.2
Other Asia	2.3	1.3	5.7	0.5	1.6	6.1	44.5	24.3	28.8	0.4	115.5	86.6
Oceania	0.3	0.0	0.0	0.0	0.0	0.0	0.8	0.2	3.6	0.2	5.3	5.1
Total exports	148.0	20.5	50.7	23.2	17.0	17.1	74.8	37.4	73.1	1.2	463.0	276.7
of which: extra-regional exports*	31.1	19.7	42.0	4.2	12.8	9.5	74.8	37.4	44.2	0.9	276.7	
Net exports (exports-imports)	-10.1	-2.3	36.6	-34.5	-1.8	-33.5	60.9	31.2	-42.4	-4.1		

Source: (World steel association, 2018)

Table 4 above illustrates the world steel trade structure, explains the value of trade between territories, states and countries for the year of 2017.

As I explained before in an article the European Union is one of the biggest producers of steel and iron but the majority of their trade what equal to 79% is intra-regional, the first biggest

importer to the EU are the CIS and some Asian countries except China followed by other Europeans countries, and this is back to as I mentioned before in the trade factors to the importance of the near location and easy transportation. The technology impact appears in the exporters of the EU, therefore, we observe NAFTA has a big portion of the steel produced in the EU with about 7.3 Million Tons. While also because of the distance, the biggest volume of exports is going to the rest of the European countries. The ratio of extra-regional trade of imports to exports 132.5 % (World steel association, 2018)

Speaking about NAFTA itself we observe the big intra-region trade within, while they have their biggest volume of imported steel from the rest of Asia controlled by the distance factor - instead of China which had a bigger share one year before in 2016 - followed by EU. The percentage of extra-regional trade of imports to exports 921.4%.

Africa and middle east shares in the global international trade as small to be merged together as one territory exporter, we observe that the biggest share is between themselves as intra-regional trade. Africa gets their biggest volume of imported steel from CIS countries 6 Million Tons followed by 5.5 from China and 4.8 from the EU. Middle East has as well the first share of imported steel from China with 6.5 Million Tons, CIS countries comes second with 4.3 Million Tons, EU portion is 1.7 Million Tons.

So going to observe China, the Exports dropped down for the year 2017 compared with the year 2016 US steel tariffs one of the reasons besides high demand from domestic consumers. By figures, China biggest steel purchasers are the Asian countries with about 44.5 Million Tons what accounts 59.5% of Chinese total steel exports. From the hand of steel importing China enclose their trade with few partners only, other Asia and Japan respectably with 6.6 and 5.5 Million Tons. Total Chinese Imports to exports in general counts 18.5%.

4.5.4- Steel prices:

In the same context of speaking about steel trade, it is necessary accordingly to pass on the prices of this commodity. Starting with the major factors affecting the steel price I will highlight some important points:
Supply and demands: the basic condition in every business

Higher Demand + Low Supply = Higher Price

Producers who have more production than their own needs are willing to take a lower price when the market is glutted. Supply and demand, however, don't have the same effect on every market. Demand on different levels can peak and trough out of sync globally, regional, or local. As an example, even within one country, one city could have a boom in construction while others haven't. Also, more steel exporters in various world regions mean less fluctuation in the price (Fish, 1995).

Shipping cost: it is also affected by fuel prices, length of transit, weather conditions, cost of labor, and even political situation and stability between not only producer's and consumer's countries but also shipper's and receiver's countries. Since 90% of world cargoes are shipped by sea threat of piracy could have a big effect, shippers will ask for freights for taking risks for their vessels and crews, creating a crimp in the supply and making prices wave even more.

Energy cost: if we compare oil and steel prices, we can see how convergent they are, always peak and trough together. especially oil has the strongest factor in the steel price due to the importance of production and transportation. Until the economy recovered construction activities macerated and the price of steel was unstable, with every peak in oil prices has resulted in depressed in economic activity world-wide (Worrell, et al,. 1997)

Market maturity: it is the transparency that builds trust between importers who can expect fair prices across manufacturers and exporters with a steady profit can be made. Maturity comes from a consistent market where products have been sold for a long time providing a historical trend to make pretending for the future an easy task (Fish, 1995).

Cost of raw materials: the cost of raw materials for any products must be covered first from manufacturers to be worth producing. Iron ore and scrap metal as we already know are the biggest content in steel manufacturing, Ore is affected in turn by mining operations and scrap affected by the amount of it and pace of new development requires to pull down buildings, infrastructure or any steel based materials (Malcolm. 2019).

Figure 14: world main two steel types prices
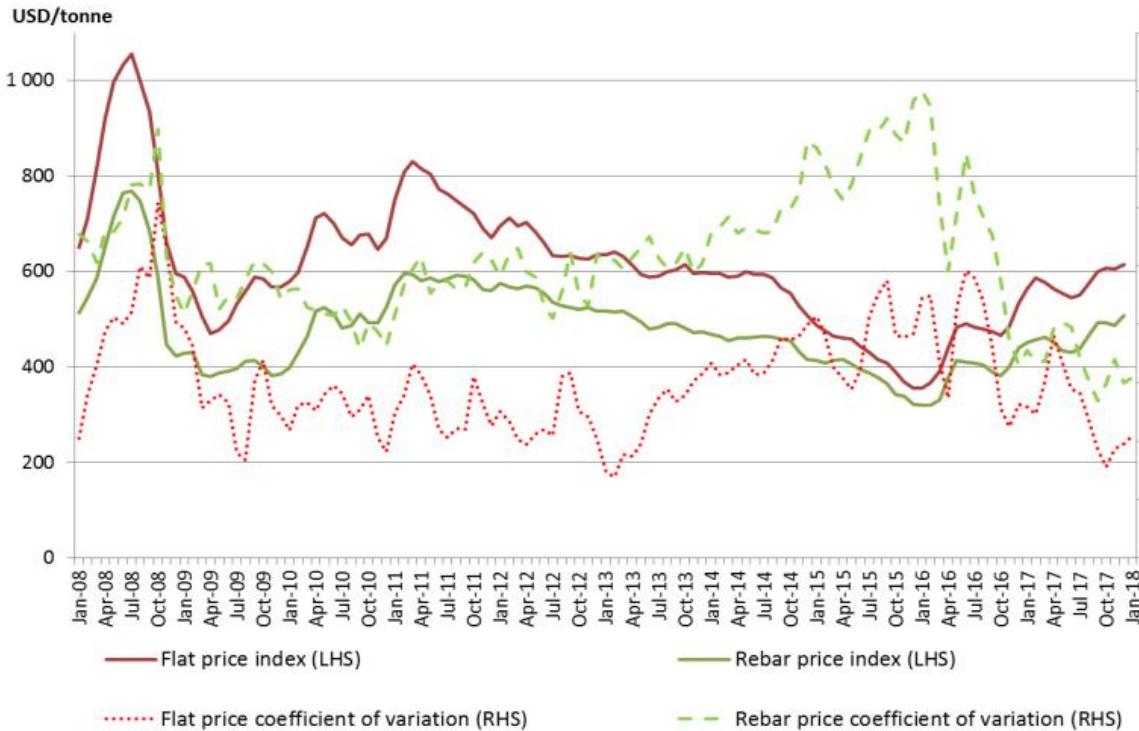
Source: (steel business briefing,2019)

Steel prices differ from region to region or country to country, besides that there is a lot of types of steel products as I explained before and each product has a different price range.

The Figure above contains the most used and important indicators for steel prices: flat steel and rebar steel that defined as the arithmetic of the individual regional steel prices series for all major steel traders in the world. The CV is the coefficients of variation are the ration of the standard deviation of the regional prices making up the indices to their mean. In my topic, I will speak about the prices, trying in general, to explain the readers controlling the dynamics in this market.

From previous articles, we know that 2016 and 2017 have uptake in steel demand and this what explains the rebound in the prices after 2015. Prices bounced back in the latter part of 2017 to attain their highest level since it was dropping down in April 2013, but still below the 2011 price level. Across regions, the dispersion for steel prices after increasing highly from 2013 to 2015, then after 2015 it returns to its levels except for some small volatiles.

Generally, the prices have been increasing more frequently in China more than the global average for the last few years. While steel rebar prices globally were increasing by 11% from October 2016 to October 2017 and 13% for flat prices, the Chinese were increasing around 17% for both over the same horizon if time. Relatively this increase reduced the gap to make it closer to the global market prices.

Figure 15 below illustrates the difference between the prices through regions for the flat steel product prices. We can observe the huge gap between Chinese prices and European prices for June 2016 where the Chinese market had a glut after increasing the production for 2016 forces the producers to lower their prices to almost half of the global prices. Chinese steel industry proves their shares in the market and the demand for it accounts for approximately 45% of whole global demand, the result obtained in December 2017 to score the best closest price to the global prices with maintaining the same demand.

Figure 15: Global flat steel prices monthly (2016-2017)
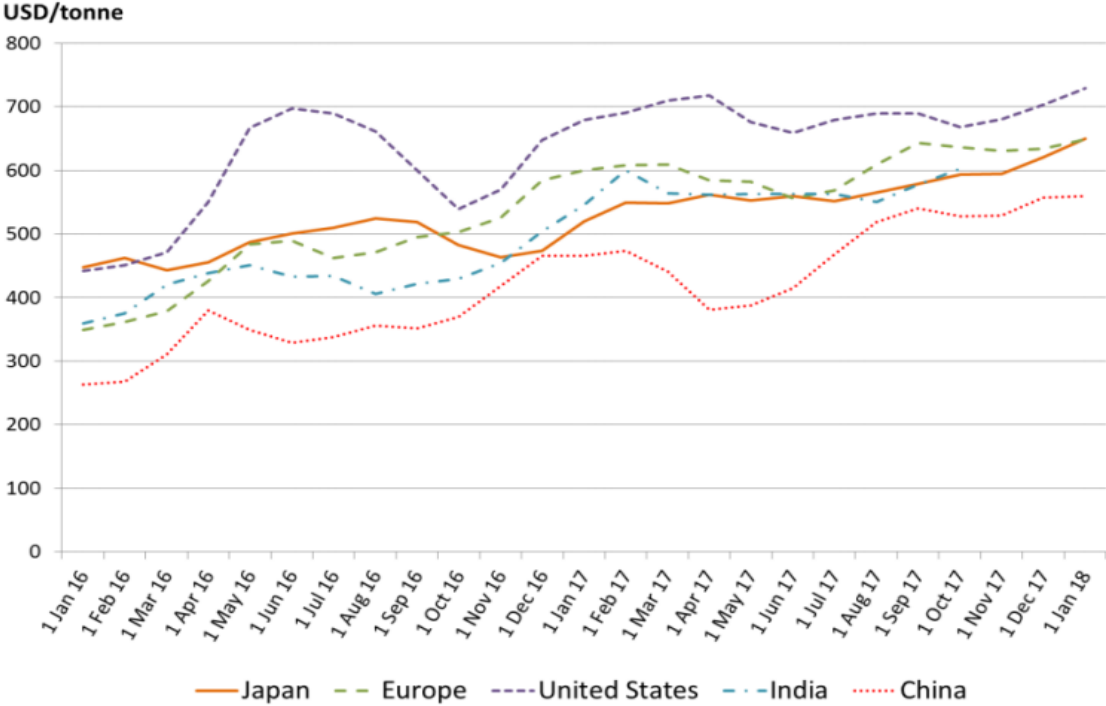
Source: (Steel Business Briefing. 2019)

5- Practical part:

5.1- Overview of Syrian's economy:

In order to have a good understanding of the International trade of steel and iron in Syria and it is the role in the economy and before running the regression analysis. Some investigations and gathering information should be done overall about parameters of the Syrian economy development and characterizing the relationship between the international trade of iron and steel and national economic parameters. This will be necessary in order to rationalize and validate the value of the findings and practical recommendations that will be done later within the framework of this research to be developed based on the results of the practical part for this analysis.

Before the conflict started in Syria, the Syrian economy considered the only self-sufficient economy among all Arab economies. The Syrian industries' volume was a leader among many in the Middle East region, Syrian exports were reaching all continents around the world. The Economy patterns changed sequentially after 2011 due to the closure of many factories, difficulties in transportation, borders lockdown, inflation, sanctions on traders especially exporters. The budget deficit increased from 3% in 2010 to 33% in 2017, GDP decreased from 61.1 billion USD in 2010 to 17.1 in 2017 (Mehchy, et, al. 2015).

Gross Domestic Product and its growth:

As statistics show for the year 2010, Syria's economy depended on services sector by 66% from total GDP followed by 18% for agriculture sector while manufacturing was 16%, GDP in Syria was changing through the years and volume of collapsing through the conflict years was massive also a big change happened to the structure of the GDP. UN considered in their report about Syria in 2017 that it is a quite spectacular downturn compared with the experience of other countries that witnessed protracted armed conflict.

Figure 16: Sector's share of GDP between 2010 and 2017
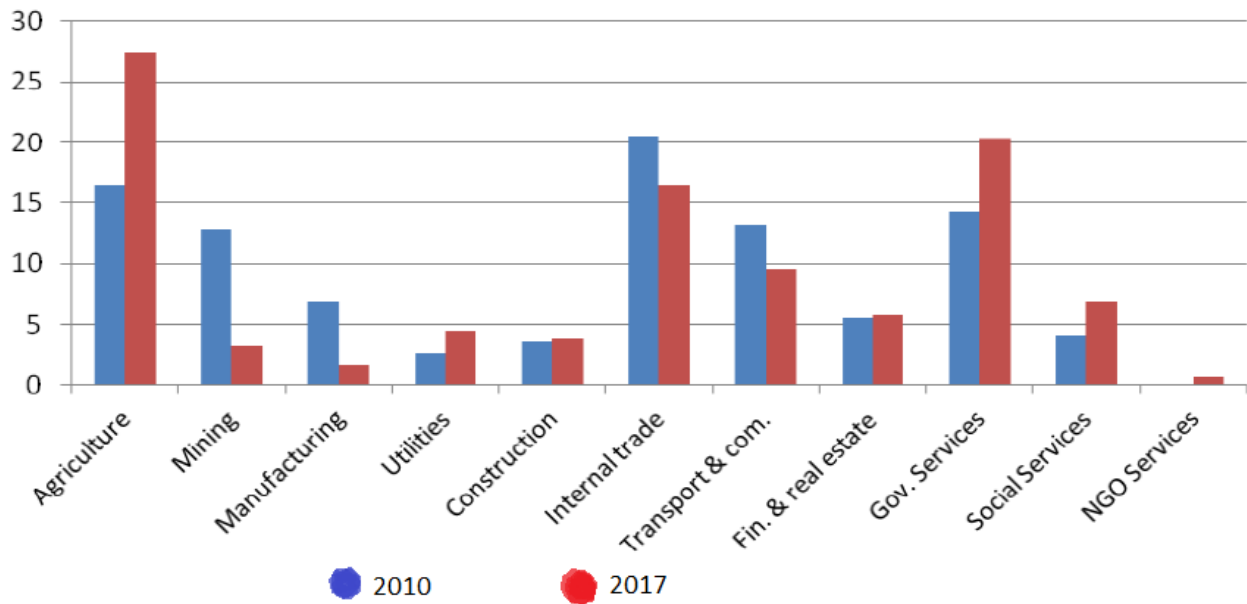
(Syrian Central Bureau of statistic,2018)

From the figure 16 above we can notice the agriculture sector has more role through the last years supporting the Gross Domestic Product growing from 18% to 27% from GDP, depending on government appears clear from the government services portion's increase between 14% and 20%. For our Study, it is important to clarify that international trade dropped from 20 % to 16% and since iron and steel have a major role in construction, this sector has about 4% input in the total GDP.

To make figures and measurements more clear to the reader I will observe the GDP growth as it is a key indicator of the economic wealth and reflect off the county activities as a change in the people's welfare over time, and help to show the factors affecting the Foreign trade and vice versa.

Figure 17: GDP growth in Syria between 2003 to 2017
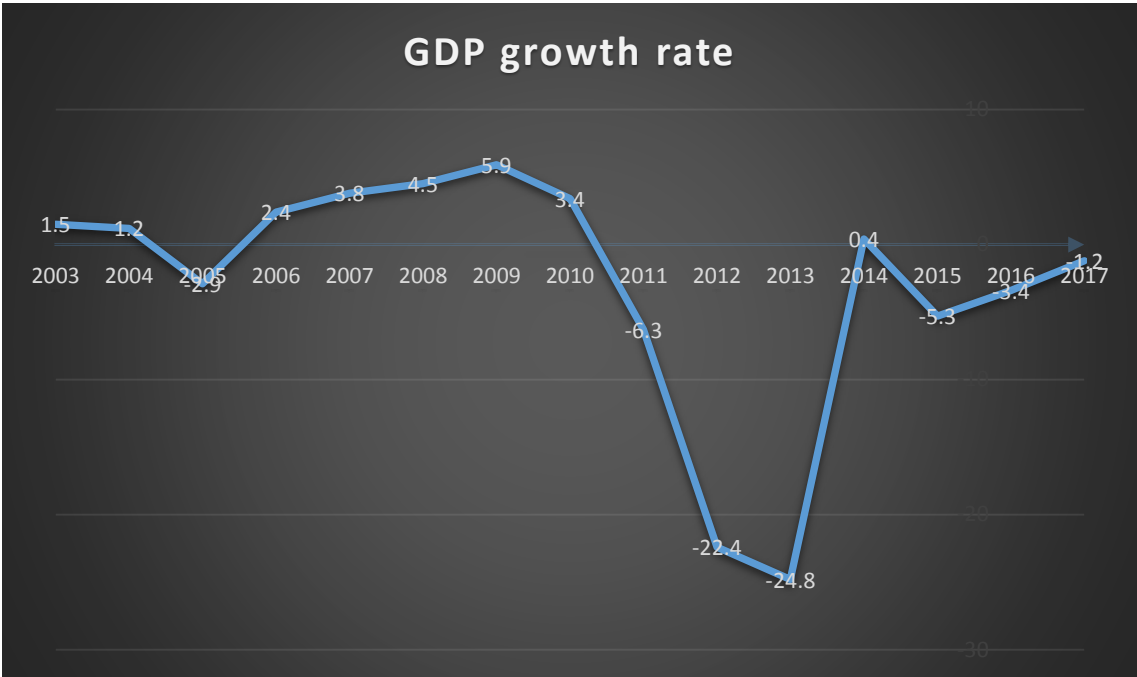
(Syrian Central Bureau of statistic,2018)

As can be seen from figure 17 above, Syria's gross domestic product has demonstrated a massive drop between 2012 and 2013 because of the conflict there. As the chart shows the growth was increasing between 2005 and 2009 rapidly reaching a score of 4,5% in 2008. While the whole world was suffering from the economic crisis consequences the rate was 5.9% in 2009 this is reflecting how much Syria's economy is independent and not in very related to the global market because of the economic policy. Changing the GDP sector's share after the new situation creates a new good reconciliation leads to positive growth in 2014 to keep scoring negative results after that (Mehchy, et, al. 2015).

Exchange prices:

The Syrian monetary policy was trying to stabilize the foreign exchange rates for the national currency (Syrian Pound) using the approach, of intervening in the exchange market to shore up the stability. Despite this approach, the central bank has been forced to depreciate the official rate of the Syrian pound year after year since the value of exports dropped down. As I study

through my foreign trade classes, the main factor affecting the exchange rate is the export value (Central Bank of Syria. 2012).

The Syria exchange rate market sometime had witnessed, a big difference between the official value and the market value, and the Syrian Central Bank (SCB) has always its prices to support importers and exporters. And since my study is about steel trade I will follow and mention the Syrian central bank prices for Syrian pound to USD for import.

Figure 18: dynamic of Syrian exchange rate for USD. 2003 - 2017
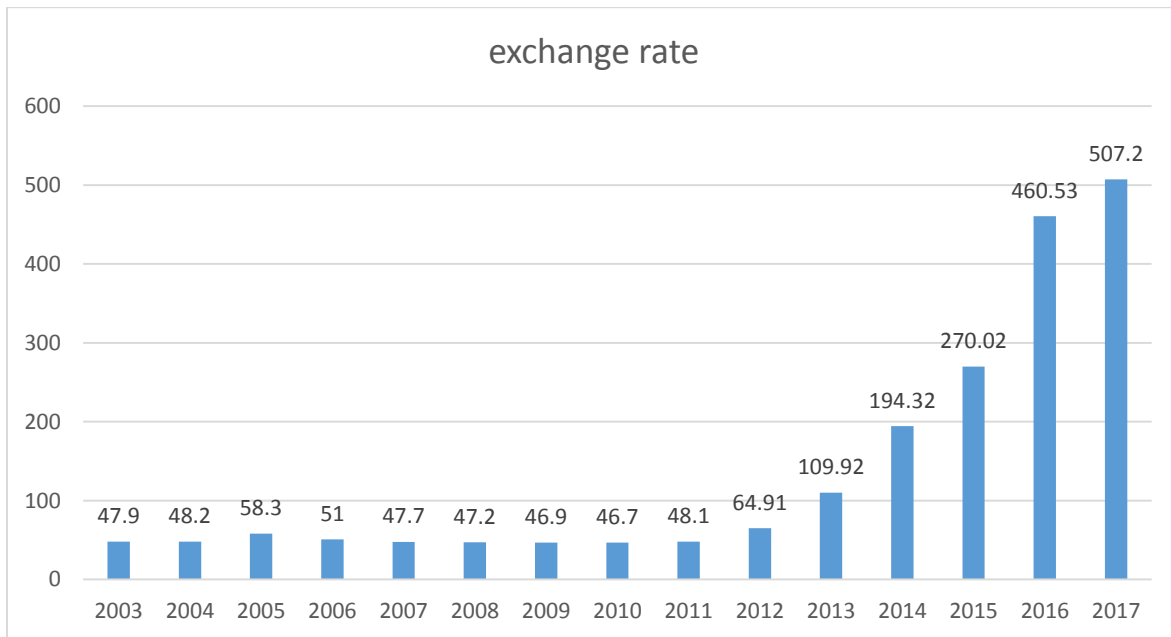
Source: (Syrian central bank. 2018)

The graph 18 above illustrates the dynamic of Syrian pound exchange rate to the USD. It is clearly seen that the exchange rate can be split up into two diverse stages. The first between 2003 to 2011 were almost stable with maximum about 20% from year 2004 to 2005 than back to the normal chart track dropping down again about 14% to be 51 Syrian Pound for 1 USD these stage stability was due to the stability in the trade balance. The second stage during the crises in the chart we can see that the exchange rate is fluctuating rapidly from 2013 with about 170% in 2016 compared to 2015 depreciation of the Syrian Pound against the USD.

Population:

The population is an important factor affecting economic growth in many ways. It is a major factor in the production process if it is a productive population with suitable age to contribute to production. Also, the growth of population means a growth of demand and growth in the market it could lead into an increase in production of foreign trade.

In Syria based on the date for the Central Bureau of Statistic CBSSYR we have 24.42 inhabitants at the end of 2017, with 33,2% of this population younger than 15 years old and 25.6 years the median age. With this population Syrians are about 0.22% of total world inhabitants, makes Syria ranked 68. 60% of the total Syria populations are living in the urban (Syrian Central Bureau of statistic,2019).

Figure 19: Syria population 2003 – 2017 in millions
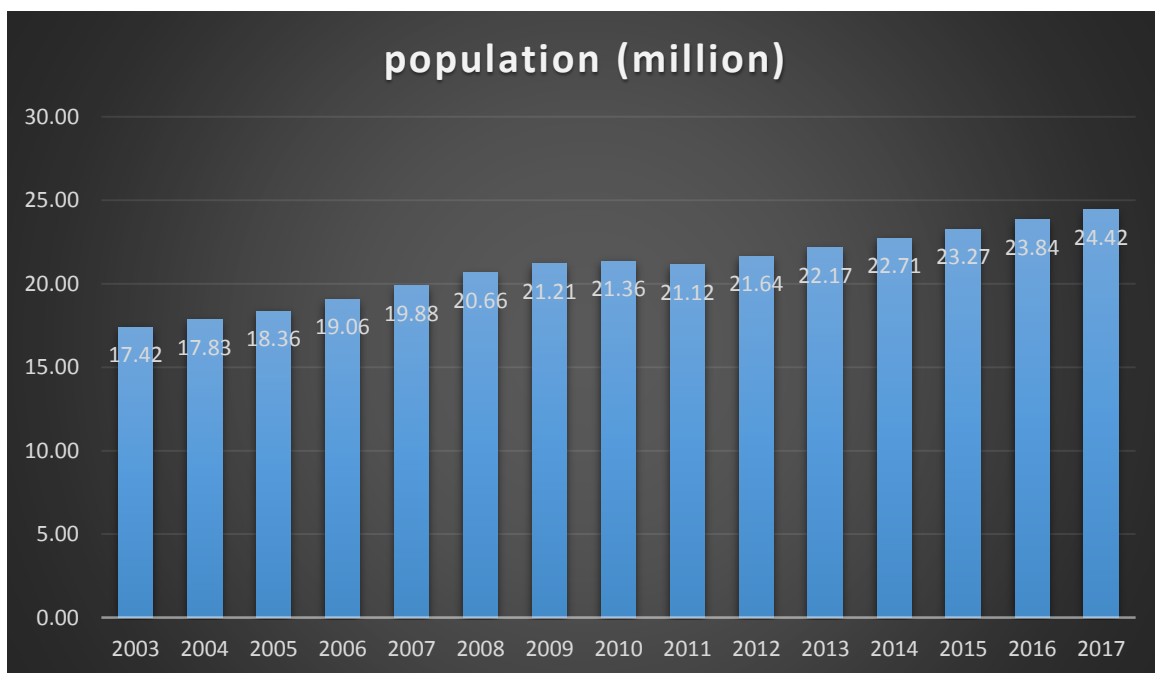
Source: (Syrian Central Bureau of statistic,2018)

In the Chart 19 above the data were gathered at the end of the year and it has seen that the population were growing steadily from the year 2003 to the year 2009 with about 2,5 % yearly. After that for 2011 recorded for the first time since 1982 a negative rate due to the conflict situation to be growing again after that with almost the same rate before collapsing.

Syrian foreign trade:

Many difficulties are facing the Syrian economy since 2011 and changing its shape, Trade partners' portions have been changing from 2011 to 2017 and many new foreign investing started in the country due to the new alliances contracted.

The graph below illustrates the change in the Trade balance through the years the charts for the years from 2007 to 2011, in general, reflect the economic growth that where GDP was growing, unemployment close to zero, stable exchange rate. Imports were very close to the exports and this reflects the strength of the Syrian products between 2007 and 2008 (Alhemesh M. 2011).

2009, 2010 and 2011 also witnessed good growth in the economy in general, but during those years the government's economic policy was tending more to trade that produces what appears in decreasing the exports and increasing the imports, especially the growth in the relations between Syria and Turkey what explained by the invasion of Turkish products to the Syrian markets, Economist say that cause the declining in manufacturing and as a result increasing of the unemployment rate (Damascus center for research and studies. 2018)

Crisis of Syria consequences appear clearly from 2012 to 2017: imports and exports both declined, almost zero of imports, exports only for primary and necessary goods, these reflect the economic situation for the entire territory (World Bank 2017).

To have more understanding of the foreign trade of Syria I will highlight some points for the studied phase. The government followed the social market economic model after the sharp decrease in oil exports, the economic team admit that the economy balance was weak because of the depending on oil when the oil shares in exports reached 70% between 1997 to 2004. While the semi-finished product was 57 of the imports.

The trade balance in has always negative value because of nature of exports where it was mostly raw materials. Through this era between 2000 and 2005 and because of the economic reform, the exports were 107% more than the year 1997 and the value of the exports were higher, this process went in progress until the year 2011, but an inability to follow the trends in technology field made the import's value higher again between 2009 and 2011 (Alhemesh M. 2011).

Figure 20: Dynamics of Syria's foreign trade in 2007-2017, in current USD Million

TRADE BALANCE (MILLION USD)

■ exports ■ imports ■ trade balance

Year	exports	imports	trade balance
2007	11,581	13,691	-2,110
2008	15,221	18,052	-2,831
2009	10,457	15,294	-4,837
2010	12,238	17,467	-5,229
2011	10,501	19,871	-9,370
2012	3,050	12,255	-9,205
2013	1,595	8,597	-7,002
2014	910	8,043	-7,133
2015	783	5,545	-4,762
2016	718	4,861	-4,143
2017	622	4,414	-3,792
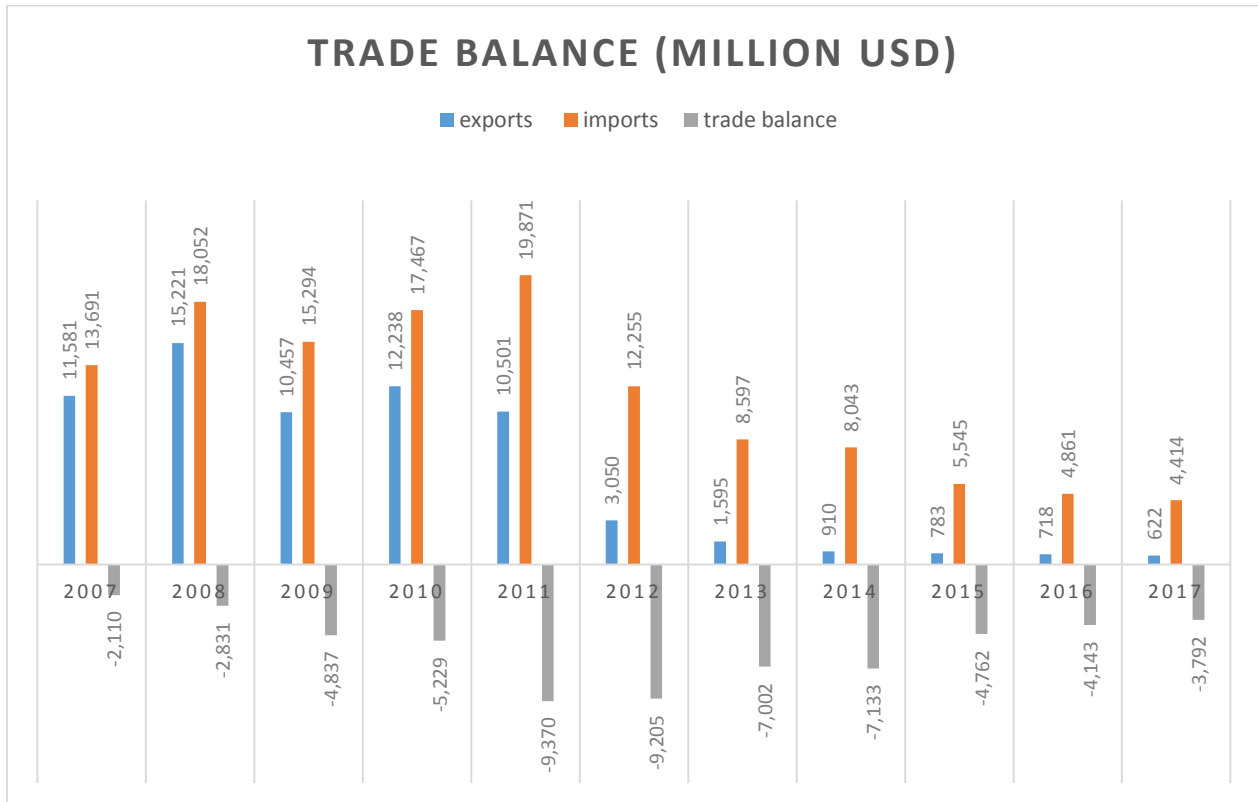
Source: (Syrian Central Bureau of statistic,2018)

the figure below shows the main Syrian's exports in groups, almost half of the share goes to the agricultural products with spice seeds as the main component of 15% of the total Syria exports value. Syrian cotton has a good reputation globally that makes the textiles as non-retail pure cotton yarn and raw cotton and other textiles ranked second in the Syrian export. Since Syria considered a Mediterranean country and the climate helps to grow olives this holey crop has a big importance for people there, Syrian olive oil has a good competitive quality makes this product has 9.1 of the exports portion. Metals as an export are about 5.9 % of the total export in value mainly it is raw lead and refined copper. Since iron and steel trade is my topic I want to highlight that the exported iron and steel is almost 0.40 % from all exports share what declares our position in exporting this material.

Figure 21: Structure of Syria's exports by product groups, as of 2017
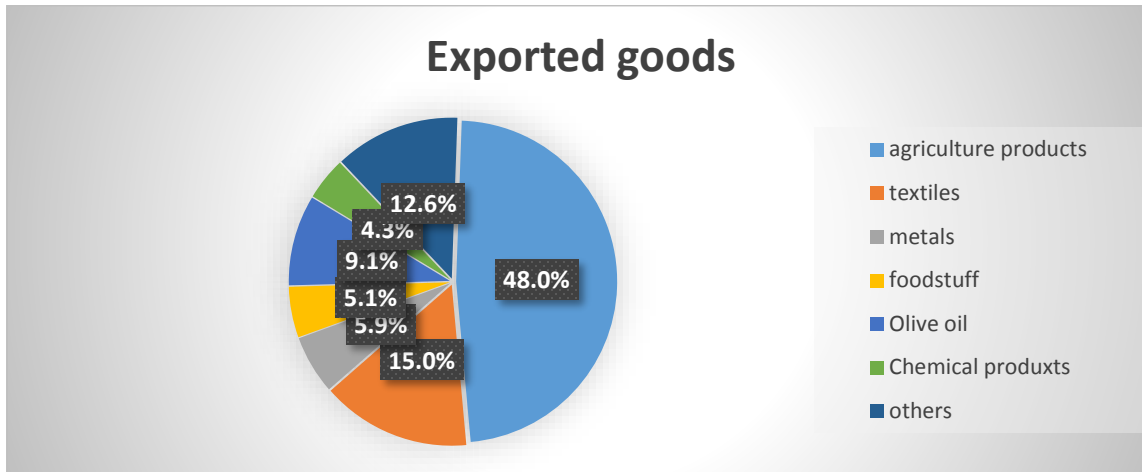
Source: (OECD. 2018)

Going to speak about Imports we can see more diversity than exports. The figure below shows that the main sectors are foodstuff by 14% comes first, raw sugar forms the biggest single materials in this stuff with 4% of total Syrian imports. Followed by agricultural products such as rice, wheat, barley and corn with 12% of total imports by value. Machines third with 12%, followed by chemicals with 9.9 % due to current situation Syria becomes an oil importer after it was exporter before 2011. Textile has shares of 9.8%, and plastic following by 7.2%. The metals have 6.7% of total imports from this portion about 5.2% goes for the iron and steel (OECD 2018)

Figure 22: Structure of Syria's imports by product groups, as of 2017
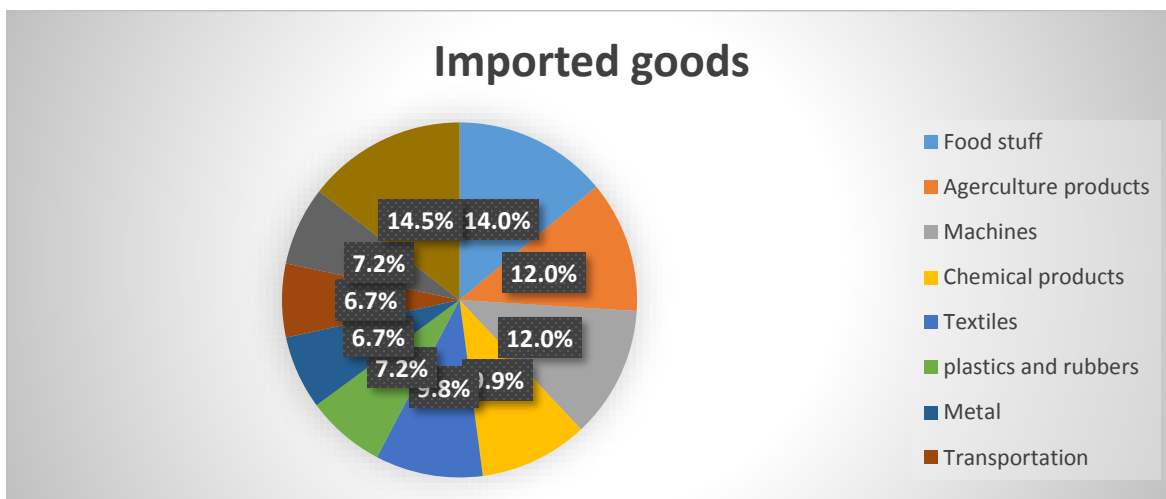
Source: (OECD. 2018)

Trade partners:

Table 5 below shows the trade partners and their portions and the difference between these portions between 2010 and 2017 based on a change in Economy policy, traded products and other circumstances.

In general, we can see a change in the general vision of trade within seven years, in brief imports become more than exports. Arab states have more shares than before than all other countries. Iraq was first among them in 2010 the reason was the competitive advantage the Syrian vegetables and textiles have. As a value, actually the value of trade between Syria and Iraq has doubled in 2017 compared with 2010. Lebanon has a noticeable increase in the shares from 2.3% to 16.1% the reason is that due to the situation after the year 2011, that a lot of goods were traded as Lebanese imports or exports instead of Syrian. All Arab states have totally in 2010 27.4% of the general trade of Syria and in 2017 have 44.20. We can say in figures that the trade value between Arab countries and Syria are one of the only few increased by the time (OECD. 2018)

Speaking about EU the shares of trade with Syria were 31.7% of total trade of Syria most likely before the trade balance was almost balanced between imports and exports, Syrian imports from EU were manufactured goods, finished goods, steel and iron, electronics and cars, while exports were more likely vegetables, fruits, seeds and spices, textiles and crude oil. This is the case of Italy which was the biggest European importer of the Syria oil with a total trade share of 9.9 % in 2010, and because of oil interception, this share dropped to 0.9% in 2017. (Mehchy, et, al. 2015)

Russia has after and before the same share of international trade with Syria, mainly the international trade with Russia outbalance the imports especially the iron and steel where Russia's main source of it to Syria. In values the trade value, in 2017 were the third of the trade value of 2010.

USA sanctions on Syrian regime after 2011 has a big impact on the trade between both countries decreasing dropping the share from 3.3 % the same like Russia to 0.3% (Mehchy, et, al. 2015)

Imports from turkey as value dropped massively while exports stayed the same. But by portions, turkey has in 2017 4.4% of total Syrian foreign trade compared with 7.3% for 2010. While China remained exactly the same total share, and nature of imports and exports but with different size.

Table 5: Main trade partners with Syria 2010 - 2017

Partner	Shares from total trade	
	2010	2017
Iraq	9.40%	4.70%
Lebanon	2.30%	16.10%
all Arab countries	**27.40%**	**44.20%**
Italy	9.90%	0.90%
all EU states	**31.70%**	**9.50%**
Russia	3.30%	2.70%
USA	3.30%	0.30%
Turkey	7.30%	4.40%
China	4.70%	4.70%

Source: (Syrian Central Bureau of statistic,2018)

5.2- Steel in Syria:

So far Syria is not a producer for iron ore the basic necessary raw material for semi and finished steel and iron products. Geologists discovered many spots in the country for iron ore with a lower percentage of iron flakes allowing factories to produce the iron from scratch. Therefore, the steel used in Syria is basically either semi or final imported products or local final product from an imported semi-product.

Steel consumption in Syria more focused on rebar and flat products, the bigger percentage of the steel used in Syria is matching with the world. As I mentioned in my study before that the biggest portion for steel use is for constructions issue, the Central Bureau for statistics in Syria in their report they show that about 63% of steel consumptions goes for constructions (Haroun, N. 2017).

Steel production in Syria:

As mentioned before in my study the steel-producing from scratch means to have two options: the first (advanced way) is the iron ore, either mined or imported. And after the factories and manufacturing infrastructures should be ready for processing the raw material into the semi-final shape than into final products or in a more developed way directly into the final product, this kind of manufacturing is not existing in Syria. The second way is to produce Steel and iron from scrap and this is the way used in Syria.

Many factors are affecting steel-producing process in Syria. The competition with Turkish, Russian, Ukrainian and Chinese imported steel, that the local market through many years has witnessed dumbing of these products. Lower the Tariffs for imported products is one of the problems facing production. Another factor is the ability of the government to provide the necessary power resources in competitive prices, supporting the producers by loans and technical assistance. The production price is related to many factors: global prices of raw materials and scrap, demand and supply of the product, taxes on producers, customs fees for exporting, and other factors are helping to support the local product. Therefore, the final or demi final product of steel export in Syria is almost not existing, excluding some small exceptions. (Arab Iron and Steel Union, 2018)

After all these factors affecting the steel production, the reality of Syrian steel production that there are only three factories in the whole country are producing the steel products from scrap even in their full production capacity, they are not able to cover the country's demand. And even producing in a quality less than imported products and not very likely to be exported to other markets (low competitive advantage) (Arab Iron and Steel Union, 2018)

Figure 23: Syrian steel production 2003 - 2017
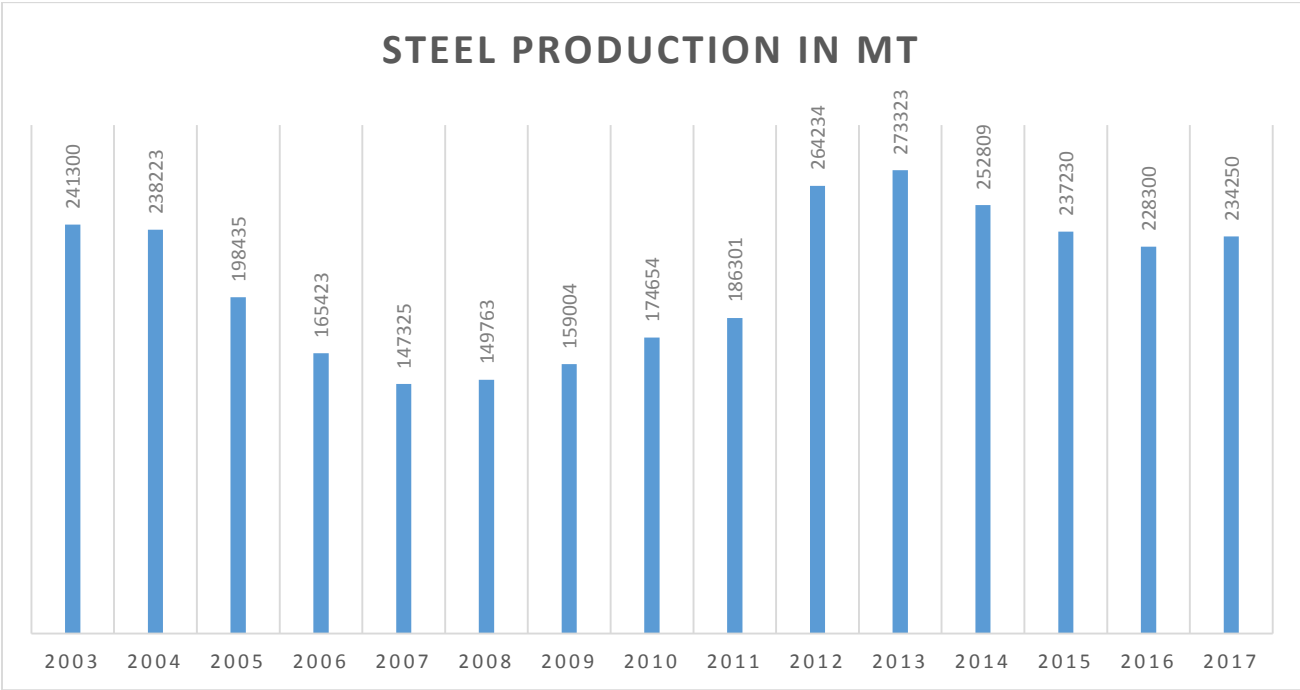
Source: (Syrian Central Bureau of statistic, 2018)

As I will study the import of steel correlation with steel and iron local production, it is worth explaining some points from the figures above may help in the results later. As can be seen from the charts above the Syrian steel production was declining in steady steps from about 241 thousand MT in 2003 to about 149 thousand MT in 2011 growth rate was about - 16 % yearly on average. After that it increased steadily at a low rate for the years from 2008 to 2011 to reach the top of our sample in 2013 with 273323 MT per one year, the production increased highly within only two years about 46%. It was after that increasing lightly until 2017. The reason is the huge amount of scrap milted in 2017 after all scrap steel could be collected after the conflict cooled down and I will explain in more later in the discussion.

Steel trade in Syria:

Syria depends on steel importing since the production is from steel scrap and steel scrap is not existing from zero, so basically steel production in Syria is recycling imported steel used before and as I mentioned before the steel is a very recyclable material that could be recycled more than once with no big loss in its weight or not a big cost (Asad, 2019).

As I am speaking in my study about direct trade of steel as final-products and semi-final products only. Steel export in Syria is a very small part of exports, and it's also unnoticeable comparing with steel imports or even steel production. It worth mentioning that the only noticeable steel export from Syria is scrap exports, that I will not mention its figure due to different measurement and lack of information.

Further to all the paragraphs before that explained the foreign trade general principles, steel and steel trade concept, and after having a consummated thought for mentioned before from a Syrian economy aspect. I will explain some points about steel imports in Syria in figures to have the full vision to start applying my practical idea. Syrian consumption of steel as it becomes to be clear depended on imports, Steel import was in 2010 about 92 % of whole steel consumed in Syria. The importance of steel in the daily life and development of Syrian's make the imports of this material is a trend in the Syrian economy (Syrian ministry of foreign trade, 2019).

Syrian steel import is distributed into final and semi-final products: Final products are steel rebar and d-bars basically used for construction, hot rolled, cold rolled coils, steel angels and channels and galvanized steel sheets, all are used directly in other manufacturing processes. Semi-finals

are basically the steel billets extracted from it the other final products and basically in Syria, it is used to manufacture the steel rebar for constructions. The percentage of imported steel final and semi-final products in 2017 from total steel imports are 57% and 43% respectively (Syrian ministry of foreign trade, 2019).

Figure 24: steel import shares by country or region between 2010 and 2017
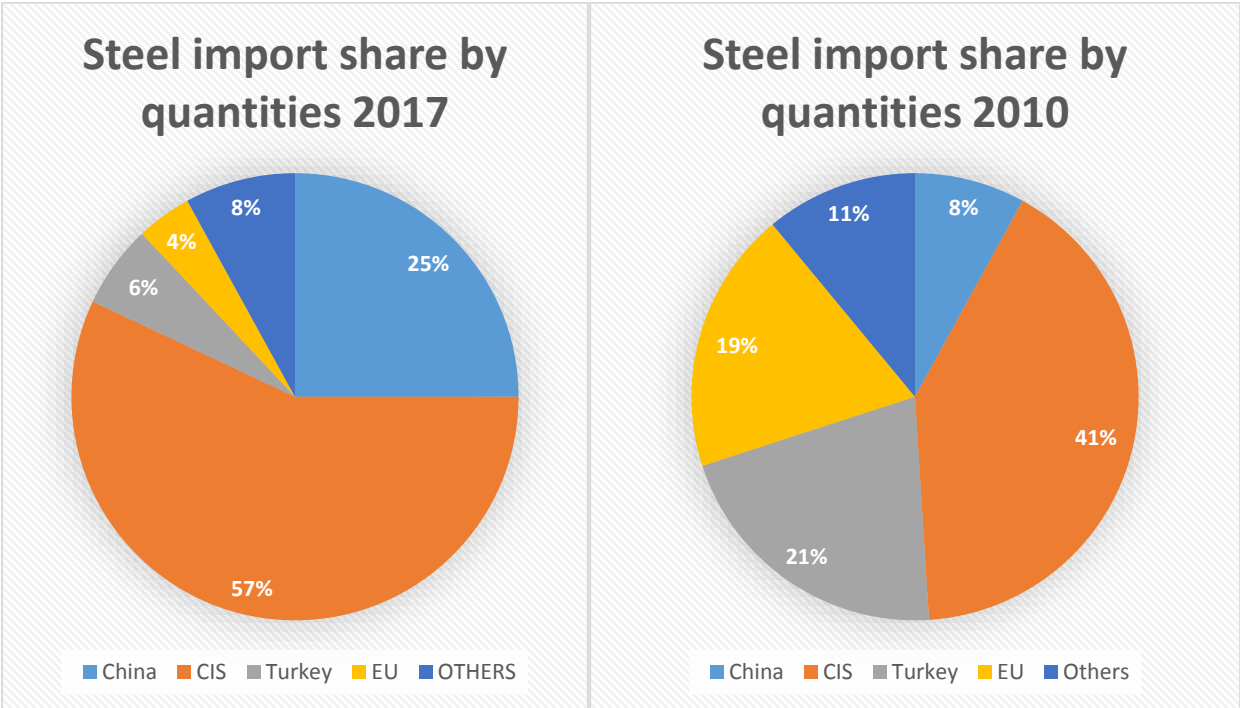
Source: (Syrian Central Bureau of Statistics,2018)

The figure above illustrates the difference in shares of the main steel import players between 2010 and 2017. Syria steel import mail players were changing by the time in line with whole imports mail players changing. In 2010 a big share was for Turkish steel due to excellence for Syrian Turkish commercial relations, compared with a small one for Chinese and average for Ukrainian and Russian. By the time a big change was happening in the global market talking about Chinses steel production swell and dumping the market with all Chinese products. Collapsing the commercial Turkish-Syrian relation and growth of Syrian-Russian commercial relation instead (Syrian Customs,2019)

Also, many taxes and tariffs changed through the times from 0.5 % tariffs on all Turkish products for 2010 to 20 – 30 % in 2017. In general tariffs for steel semi-final products are lower

than the tariffs for final products. The economic policy is more focused on developing the local production by more tariffs for imports and more tariffs on scrap steel exporting as well as supporting the local producers in many possible ways (Syrian customs, 2019)

Figure 25: Steel import in Syria 2003 - 2017
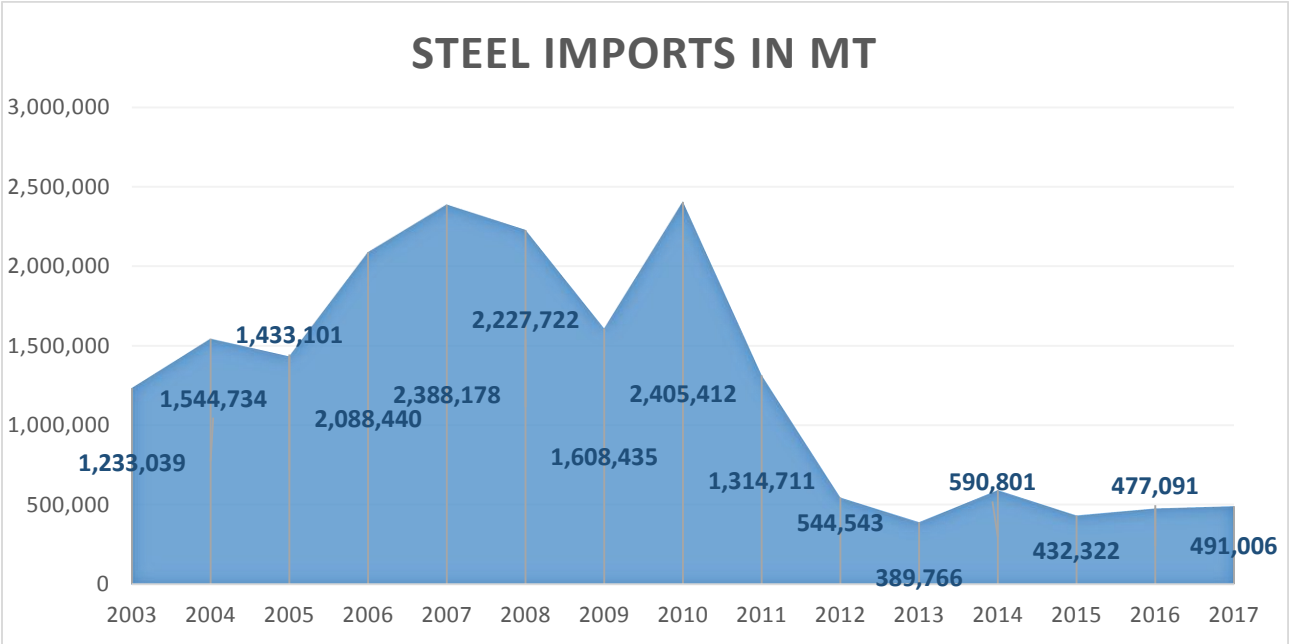
Source: (Syrian Central Bureau of Statistics,2018)

The chart above shows the imports for steel products in Syria, this will be the chart I will try to interpret its dynamic by liking it with other variables and testing the correlation to interpret the suitable linear model. It is a very noticeable increase in imports from 2003 to 2007 was a 193% increase in five years, then the import shrinks from 2010 to one of a quarter by 2012. The chart has more stability as seen from 2013 to 2017 that steel imports were the same for the mentioned years.

5.3- Developing of the Linear Regression Model:

This chapter will contain the process of developing the linear regression model starting with testing the correlation between each of the chosen variables to qualify the best to create the linear regression model that expresses the relation my research originated for.

The correlation will be between the steel import as a dependent variable with all of (GDP growth rate, steel production, population, total imports, exchange rate) as independent variables.

I gathered my data for the mentioned above independent variables in Syria through the years of (2003 – 2017) to compare it with the steel imports. The correlation will help for more understanding of the steel import chart and predict for the future under other known variables.

The following table shows the gathered data for Steel imports, GDP growth rate, steel production, population, total imports and exchange rate from 2003 to 2017.

Table 6: Data for chosen variables for testing correlations and creating model.

Year	Steel import (MT)	GDP growth rate %	Steel production (MT)	population (million)	total imports (Million USD)	exchange rate USD/SYP
2003	1,233,039	1.5	241300	17.42	5,136	47.9
2004	1,544,734	1.2	238223	17.83	6,632	48.2
2005	1,433,101	-2.9	198435	18.36	7,946	58.3
2006	2,088,440	2.4	165423	19.06	9,712	51
2007	2,388,178	3.8	147325	19.88	13,691	47.7
2008	2,227,722	4.5	149763	20.66	18,052	47.2
2009	1,608,435	5.9	159004	21.21	15,294	46.9
2010	2,405,412	3.4	174654	21.36	17,467	46.7
2011	1,314,711	-6.3	186301	21.12	19,871	48.1
2012	544,543	-22.4	264234	21.64	12,255	64.91
2013	389,766	-24.8	273323	22.17	8,597	109.92
2014	590,801	0.4	252809	22.71	8,043	194.32
2015	432,322	-5.3	237230	23.27	5,545	270.02
2016	477,091	-3.4	228300	23.84	4,861	460.53
2017	491,006	-1.2	234250	24.42	4,414	507.2

Source: (Syrian Central Bureau of Statistics, Syrian Central Bank, 2018)

So the gathered data above are gathered from 2003 to 2017 on a yearly base.

Data are gathered from the Syrian Central Bureau of Statistics it is official organization has a network or connections with all governmental and non-governmental bodies in the countries where they obtain their data from. And some other data for this research I got it from the Syrian central bank.

Steel Import from the source are calculated in Metric Tons for every single product either final or semi-final steel product imported through regular ways under customs control and declaration for the 01st day of each until the last day of the year.

GDP growth from source calculated yearly by percentage I preferred to choose the growth rather than the GDP value cause the available data are calculated in Syrian Pound and it is more accurate to have the percentage for better results.

Steel production from the source in Metric Tons is for Steel production over Syrian lands from raw material, so it worth mentioning that the semi-final imported products witch manufactured after that into the final product are calculated there.

Population from the source are gathered each December of the year, it is calculated for each single Syrian living Citizen who was born in Syria and still holding the Syrian passport.

For total imports, the data from the source my Million USD for all the products imported the whole country in a regular way Declared by customs from 1st day of the year until the last day.

For Exchange rate gathered from source calculated by the average of daily prices, it worth to mention that importers in Syria have special exchange rate to support their payment in foreign currencies this price is more constant than market prices to provide foreign currency for importer without need to obtain this money from the black market and differentiate fluctuation in the market.

To implement the correct multiple regression, I will test each one of the variables' correlation with the Steel import separately, and I will consider for that any coefficient of determination score: less than 0.2 means the correlation is weak and the variable not accepted to the model.
between 0.2 and 0.4 means are correlation good and variable accepted for the model.
more than 0.4 means the correlation very good and variable accepted for the model.

T value ≤ 0.05 it means we refuse the null hypothesis and accept the model.

now taking into account the table above I will start testing by running a regression analysis using the Microsoft Excel software built-in regression tool.

The correlation between steel import and GDP growth:

After choosing data from table 6 above and applying the linear regression for Steel import data with GDP growth data we have the following result.

Table 7: Summary output for regression using GDP growth rate with steel import

Regression Statistics								
Multiple R	0.639687347							
R Square	0.409199902							
Adjusted R Square	0.363753741							
Standard Error	604669.7471							
Observations	15							
	df	SS	MS	F	Significance F			
Regression	1	3.29211E+12	3.29E+12	9.004059	0.010225589			
Residual	13	4.75313E+12	3.66E+11					
Total	14	8.04525E+12						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1430576.713	164201.3255	8.712334	8.68E-07	1075841.316	1785312.11	1075841.316	1785312.11
GDP growth rate	52994.20588	17660.75359	3.000676	0.010226	14840.46737	91147.9444	14840.46737	91147.9444

Source: own calculation

As we can see for the table the correlation between Syrian GDP growth rate as the independent variable and Steel import in Syria as the dependent variable. We have the r-Squared value for the analysis amounts 0.409, this allows us to state that the change in the GDP growth rate describes effectively over 40% in the change of Syrian steel import. Therefore, there is indeed a very good correlation between the two variables. Also, we can see that the p-value for the independent variable is considerably lower than 0.05 that means no heteroscedasticity between variables, therefor also means the regression analysis is meaningful and statistically significant. This is

confirmed further by the low value of the F significance parameter this means it worth adding the independent variable to the list to implicate in the model and make the final investigations.

The correlation between steel import and steel production:

After choosing data from table 6 above and applying the linear regression for Steel import data with steel production data we have the following result.

Table 8: Summary output for regression using Steel production with steel import

Regression Statistics								
Multiple R	0.86582183							
R Square	0.74964743							
Adjusted R Square	0.73038955							
Standard Error	393617.124							
Observations	15							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	1	6.0311E+12	6.03E+12	38.92677	0.00003			
Residual	13	2.01415E+12	1.55E+11					
Total	14	8.04525E+12						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	4457810.88	519697.7712	8.577699	1.03E-06	3335072.1	5580549.7	3335072.1	5580549.651
steel production in MT	-15.13942	2.426526542	-6.23913	0.00003	-20.3816116	-9.897228	-20.38161	-9.89722783

Source: own calculation

As we can see from table above the correlation between Syrian steel production as the independent variable and Steel import in Syria as dependent variable. We have the r-Squared value for the analysis amounts 0.749, this allows us to states that the change in the steel production describes effectively over 74% in the change of Syrian steel import. Therefore, there is indeed a very good correlation between the two variables. Also we can see that p-value for independent variable is 0.0003 considerably lower than 0.05 this means no heteroscedasticity between variables an as well the regression analysis is meaningful and statistically significant. This is confirmed further by the low value of the F significance parameter this means it worth adding the independent variable to the list to implicate in the model and make the final investigations.

The correlation between steel import and population:

After choosing data from table 6 above and applying the linear regression for Steel import data with population data we have the following result.

Table 9: Summary output for regression using Syrian population with steel import

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.58322857							
R Square	0.34015557							
Adjusted R Square	0.2893983							
Standard Error	639026.31							
Observations	15							
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	2.73663E+12	2.7366E+12	6.7016135	0.02248072			
Residual	13	5.30861E+12	4.0835E+11					
Total	14	8.04525E+12						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	5592002.92	1674610.256	3.3392862	0.0053294	1974227.41	9209778.4	1974227.41	9209778.42
population (million)	-205465.88	79368.83643	-2.5887475	0.0224807	-376931.82	-33999.93	-376931.82	-33999.929

Source: Own calculations

As we can see from table the correlation between Syrian Population as the independent variable and Steel import in Syria as dependent variable. We have the r-Squared value for the analysis amounts 0.340, it is not very good coefficient of determination but we can accept it since it is between 0.2 and 0.4. This allows us to states that the change in the population describes effectively over 34% in the change of Syrian steel import. Therefore, there is indeed a very good correlation between the two variables. Also we can see that p-value for independent variable is 0.02 and considerably lower than 0.05 that means no heteroscedasticity between variables, therefor also means the regression analysis are meaningful and statistically significant. This is confirmed further by the low value of the F significance parameter this means it worth adding the independent variable to the list to implicate in the model and make the final investigations.

The correlation between steel import and total imports:

After choosing data from table 6 above and applying the linear regression for Steel import data with total imports data we have the following result.

Table 10: Summary output for regression using Total imports with steel import

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.61674393							
R Square	0.18037307							
Adjusted R Square	0.13270946							
Standard Error	619245.847							
Observations	15							
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	3.06019E+12	3.06019E+12	7.98036645	0.14328428			
Residual	13	4.98505E+12	3.83465E+11					
Total	14	8.04525E+12						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	339976.087	368524.2265	0.922533888	0.37305537	-456172.1	1136124.28	-456172.1	1136124.28
total imports	89.3220986	31.61895418	2.824954238	0.14328428	21.0135011	157.630696	21.0135011	157.630696

Source: own calculation

As we can see from table the correlation between total imports in Syria as the independent variable and Steel import in Syria as dependent variable. We have the r-Squared value for the analysis amounts 0.180, it is not a good coefficient of determination so we can accept it since it is less than 0.2. This doesn't allow us to states that the change in the population describes effectively over 18% in the change of Syrian steel import. Therefore, we will exclude the total import in Syria as a dependent variable from implying in the multilinear regression model.

The correlation between steel import and Exchange rate:

After choosing data from table 6 above and applying the linear regression for Steel import data with exchange rate data we have the following result.

Table 11: Summary output for regression using Exchange rate with Steel import.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.63423557							
R Square	0.40225476							
Adjusted R Square	0.35627436							
Standard Error	608213.454							
Observations	15							
	df	SS	MS	F	Significance F			
Regression	1	3.23624E+12	3.23624E+12	8.7483958	0.01110483			
Residual	13	4.80901E+12	3.69924E+11					
Total	14	8.04525E+12						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1700454.17	212287.7827	8.010136727	2.205E-06	1241834.29	2159074	1241834.3	2159074
exchange rate	-3093.1287	1045.764232	-2.95776873	0.0111048	-5352.36501	-833.89247	-5352.365	-833.89247

Source: own calculation

from the table above we can notice the correlation between the exchange rate for USD to Syrian Pound as the independent variable and Steel import in Syria as the dependent variable. We have the r-Squared value for the analysis amounts 0.40, it is a good coefficient of determination we can accept it since it is more than 0.4. This allows us to state that the change in the exchange rate describes effectively over 40% in the change of Syrian steel import. Therefore, there is indeed a very good correlation between the two variables. We can see that the p-value for the independent variable is 0.011 and considerably lower than 0.05 that means no heteroscedasticity between variables, therefor also means the regression analysis is meaningful and statistically significant. This is confirmed further by the low value of the F significance parameter this means it worth

adding the independent variable to the list to implicate in the model and make the final investigations.

From the tables above after testing the correlation between the dependent variable with each one of the assumed independent variables, finding P-values and testing heteroscedasticity we can set the final variables for our model as follow (all variables as mentioned before measured for Syria)

Y: The dependent variable (steel import) measured in MT.

X1: Independent variable (GDP growth rate) by percentage.

X2: Independent variable (steel production) measured in MT.

X3: Independent variable (population) in million inhabitants.

X4: Independent variable (exchange rate) 1 USD to SYP.

Before applying the final model, we will test the multicollinearity between independent variables as below in the table. Any correlation of more than 0.8 between different independent variables means there is Multicollinearity that needs to be solved.

Table 12: multicollinearity check between accepted variables.

	steel imports in mt (Y)	GDP growth rate (X1)	steel production in mt (X2)	population (million) (X3)	exchange rate (X4)
steel imports in mt (Y)	1.000				
GDP growth rate (X1)	0.640	1.000			
steel production in mt (X2)	-0.866	-0.680	1.000		
population (million) (X3)	-0.583	-0.286	0.274	1.000	
exchange rate (X4)	-0.634	-0.060	0.378	0.758	1.000

Source: own calculation

Table 12 above illustrates that there is no multicollinearity between any of the independent variables. This means we can run our model based on the information and table 6 above using the Microsoft Excel software built-in regression tool considering steel import as a dependent

variable and all of (GDP growth, steel import, population, and exchange rate) as independent variables

Table 13: Summary output for multi linear regression.

Regression Statistics								
Multiple R	0.947							
R Square	0.898							
Adjusted R Square	0.857							
Standard Error	286878.878							
Observations	15.000							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	4	7E+12	2E+12	2E+01	6E-05			
Residual	10	8E+11	8E+10					
Total	14	8E+12						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	4965445.598	1602410.456	3.099	0.011	1395052.605	8535838.592	1395052.605	8535838.592
GDP growth rate (X1)	13427.281	14261.450	0.942	0.369	-18349.210	45203.772	-18349.210	45203.772
steel production in mt (X2)	-10.641	3.017	-3.527	0.005	-17.364	-3.919	-17.364	-3.919
population (million) (X3)	-58842.514	65308.519	-0.901	0.389	-204358.963	86673.935	-204358.963	86673.935
exchange rate (X4)	-1304.770	971.697	-1.343	0.209	-3469.846	860.306	-3469.846	860.306

Source: own calculation

After applying the multilinear regression model for the chosen variable we have the above table gives us the multiple regression model equation is:

$$Y = 4965445.598 + 13427.381X_1 - 10.641X_2 - 58842.514X_3 - 1304.770X_4 + U_t$$

As we can see from the table the coefficient of determination (R^2=0.90) which means that 90% of the steel import in Syria could be anticipated by using this combination model of independent variables of GDP growth, steel production, population and exchange rate. So I will take advantage to plot this multiple regression model on a chart with real value of Steel import to make it more clear how the results are close to the real value.
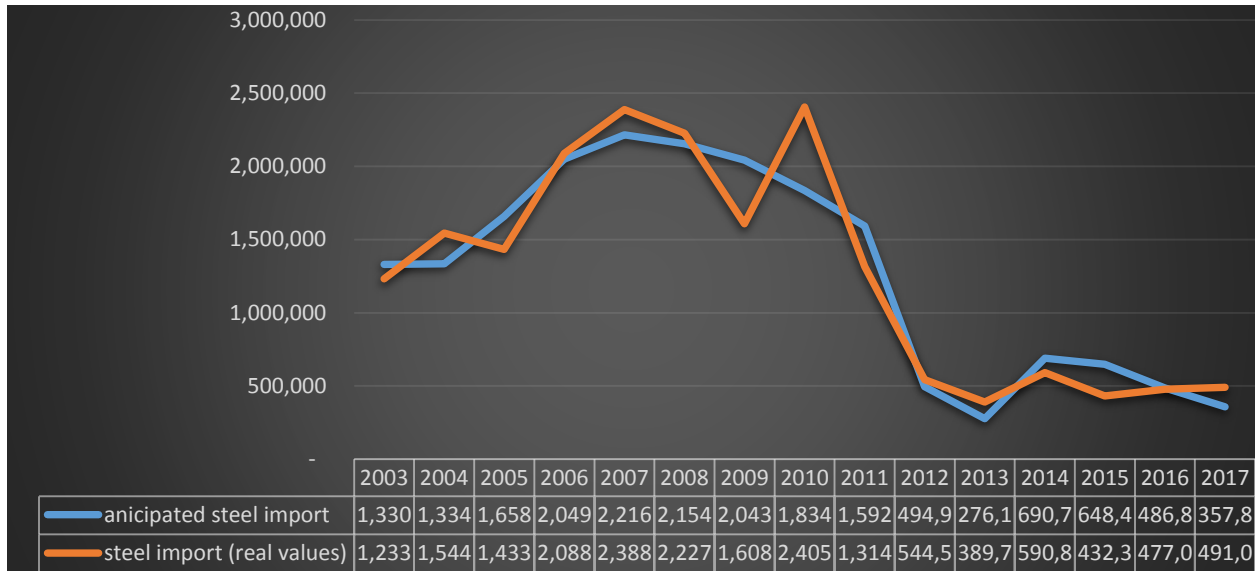
6- **Discussion of results and recommendations:**

This master thesis shows that Syria GDP based on services, and the construction sector is about 4% of total GDP, this sector backbone is iron and steel. we also observe meantime the exports and imports to detect the trade balance and detect the negative value of this indicator, it shows that over the last years' exports are shrinking in front of imports this change was occurring in conjunction with a change in partners shared in the foreign trade. In a related concern, the steel and iron import were changing all the time, in my time sample from 2003 to 2017 the import of this material were not stable, for this study many variables are observed and included in the regression model above to explore the factors are affecting the steel import, I deduct the data from Syria the country observed for following factors (GDP growth, steel production, populations, exchange rate, and total imports). I found a significant relationship between steel and iron imports with all of them except for the total imports.

Since no direct correlation between the shifts in iron and steel imports and the shifts of total imports for the years 2003 to 2017, I would note that this doesn't mean that there is no interconnection at all between the two variables. In my opinion, what Hindered the correlation is the fact of that during the conflict years from 2011 to 2017 especially the first years, the importers were more focusing on other essential goods as a priority for the inhabitants with a tendency to stow more of this essential goods specially food warehousing, influenced by production Impairment.

Nevertheless, I have conducted a multilinear regression analysis taking Syrian (GDP growth, iron and steel production, population, exchange rate) as the independent variables with iron and steel import as the dependent variable. The result of the analysis under this model proved that it is statistically significant and has a high predictive value. The model I developed has about 90 % efficiency what considered a good value, based on the results I have, I include the real value of my independent variable with the anticipated value to show how the tow charts are close in their dynamics, and could from that derive some results and investigate some facts.

Figure 26: Real values with the anticipated value of Multiple regression Model for steel and iron import

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
anicipated steel import	1,330	1,334	1,658	2,049	2,216	2,154	2,043	1,834	1,592	494,9	276,1	690,7	648,4	486,8	357,8
steel import (real values)	1,233	1,544	1,433	2,088	2,388	2,227	1,608	2,405	1,314	544,5	389,7	590,8	432,3	477,0	491,0

Source: own calculation

As figure 26 above illustrates, the two chart lines in the graph are tight close to each other, and as a prediction function for the anticipated value of Multiple Regression Model I will point up the years 2004 and 2010 when the developed model was predicting the drop-down in the steel and iron imports and it was followed by the real values.

Based on the previous model I will discuss some results and try to interpret it, starting with the positive correlation we have between GDP growth and steel import, it is well known that imports ,in general, is part of the GDP calculation, but in some economies and in our case the GDP growth is encouraging the householders and firms to spend more on housing and constructing and even the government on infrastructure.

The correlation between production and import is negative obviously as more market is saturated by local product, more imports will not be needed, this is mostly noticed between 2014 and 2017. The impulse for this raise in production we notice was the scrap outgrowth as remnants of the destruction in the country, I have mentioned before that steel production in Syria based on scrap.

Interpreting the negative correlation between population and iron and steel import is conceivable out of the information I mentioned before in the population paragraph that 33.2 % of the

population are under 15 years, and the growth of population were in this category, with the migration of the educated productive class also means fewer people who are able to generate revenue that means more depend on cheaper product what means depend more on the domestic product and less spending in general.

As a developing country with negative trade balance and few resources of foreign currencies, the central bank is controlling the flow of the country foreign currencies through providing the importers with their needs for transactions. This is how exchange rate affecting the steel and iron import and appears in the drop-down of imports, anchoring the rule of stable exchange rate stable economy.

The Economist newspaper expected the growth of GDP to be 9.9 % in Syria for the year 2020 based on this, and besides what mentioned above, a huge boom in construction is expected as I mentioned in page 36 similar to the construction revolution that happened in the world after the second world war. It means that a huge demand for steel will occur may not as expected from The Economist in 2020 but later for sure. I think the right thing to be done is focusing in the productive side of trade balance I mean lower the import of iron and steel as much as possible, by focusing on production many mechanisms could be followed, Syria should benefit from the foreign alliance and foreign investment that have it to develop the industrial sector since there is sanction on Syria. Switch from depending on services and agriculture to be more independent should be a priority for the government because it is the way to boost the GDP and lower the pressure on foreign exchange market for the purpose of financing the imports.

I believe that the subsequent growth for steel production growth in Syria is rather much limited, and cannot cover the domestic consumption due to the lack of technology Syria has it in its industrial infrastructure. By the beginning of 2018, the government legislates a package of actions to support the local production by impose high taxes on steel scrap export and support producers by the energy sources and loans but it faces many difficulties to apply so far. Once this support will be applied and the country start to produce more the country more likely will be able to achieve greater economic stability.

7- Conclusion

International trade between countries certainly demonstrates the strategic importance for countries role among others, the steel and iron are strategic materials, trade in them adds up to this importance. Iron and steel import in Syria is a major item in the total imports list, so this sector deserves a transcendent concern. The United Nations announced that about 11 % of total housing units in Syria totally destroyed and infrastructure had big damage encompass roads bridges, government, and public facilities. Also, the UN estimated the budget for reconstruction process with about 300 to 500 billion USD, all this attract much foreign investments and foreign alliances in a race to win the future contract ratification what considered a ravishing point for investors.

So from an investor perspective for a new market or challenge to guarantee a smooth activity and the maximum profit and to estrange any possible competitors a study about conditions that control this demand or this market, an internal study done on the practical part.

Also from a national perspective, to know the needs of the inhabitants and to understand the tendencies, to grow the economy and improve the country, to know the interest of the investors, the same study will be very useful.

In the practical part, I worked on the study of the response of steel import on some other factors, the developed regression model for this purpose come up with a result proved that for the time series between 2003 and 2017, a positive correlation was observed between iron and steel import with GDP growth, a negative correlation between iron and steel import and steel production, a negative correlation between iron and steel import with population, and also a negative correlation between iron and steel import and exchange rate.

After creating the new multiple regression model for the gathered information above it gives an anticipated chart reflects the real relation between the internal factors an Iron and steel import.

The framework of this thesis can give a good vision about the iron and steel sector in Syrian, the needs of the market based on the changes of one or some of the internal variables, this makes the estimation for whole sector affairs possible.

8- References

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