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THE INTERNATIONAL COMPETITIVENESS OF TURKEY AND MOROCCO IN THREE MAJOR SECTORS: VEGETABLE PRODUCTS, TEXTILES AND TEXTILE ARTICLES, AND PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES

Ayoub CHERGUI MAKBOUL

Master's Thesis

Supervisor
Asst. Prof. Dr. Nevzat Barış VARDAR

Istanbul, 2023

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I hereby declare that all information/data presented in this graduation project has been obtained in full accordance with academic rules and ethical conduct. I also declare all unoriginal materials and conclusions have been cited in the text and all references mentioned in the Reference List have been cited in the text, and vice versa as required by the abovementioned rules and conduct.

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Signature

DEDICATION

To my lovely family and friends, thank you for your unconditional support. I also would like to express my gratitude to Asst. Prof. Dr. Nevzat Barış VARDAR, my esteemed advisor, for all the guidance, support, and instruction he provided me throughout my thesis studies. I would like to thank ALTINBAŞ UNIVERSITY for providing me with the necessary resources to pursue graduate study in the Business Administration Department.

ABSTRACT

THE INTERNATIONAL COMPETITIVENESS OF TURKEY AND MOROCCO IN THREE MAJOR SECTORS: VEGETABLE PRODUCTS, TEXTILES AND TEXTILE ARTICLES, AND PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES

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In recent decades, international competitiveness has become more intense due to globalization and economic, technological, and political changes in the world. However, it has become necessary for countries to measure their competitiveness in different sectors in order to implement the essential strategies, whether to set, maintain or increase the level of competitiveness. This study aims to evaluate the international competitiveness of Turkey and Morocco in three major sectors, "vegetable products", "textiles and textile articles", and "products of the chemicals or allied industries" sectors, based on the Revealed Comparative Advantage (RCA) and Revealed Trade Advantage (RTA). Additionally, the data was gathered from International Trade Center (ITC) database between 2010 and 2020. According to the findings, it was concluded that Morocco has a comparative advantage in "vegetable products", "products of the chemicals or allied industries" and "textiles and textile articles" sectors. Meanwhile, Turkey has revealed a comparative advantage in "vegetable products" and "textiles and textile articles" while the 'products of the chemicals or allied industries" has shown a comparative disadvantage.

Keywords: Competitiveness, International Competitiveness, Revealed Comparative Advantage, Revealed Trade Advantage, Vegetable Products, Textiles and Textile Articles, Products Of The Chemical Or Allied Industries.

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ABBREVIATIONS

AK	:	Adalet ve Kalkınma
DRC	:	Domestic Resource Coefficient
EPC	:	Effective Protection Coefficient
EU	:	European Union
GCI	:	Growth Competitiveness Index
GDP	:	Gross Domestic Product
GMP	:	Green Morocco Plan
HS	:	Harmonized System
IMD	:	International Institute for Management Development
ITC	:	International Trade Center
NPC	:	Nominal Protection Coefficient
OCP	:	Office Chérifien des Phosphates
OECD	:	Organization for Economic Cooperation and Development
PAM	:	Policy Analysis Matrix
RC	:	Revealed Competitiveness
RCA	:	Revealed Comparative Advantage
RMA	:	Relative Import Advantage
RTA	:	Revealed Trade Advantage
RXA	:	Relative Export Advantage
UNCTAD	:	United Nations Conference on Trade and Development
WEF	:	World Economic Forum
WTO	:	World Trade Organization

1. INTRODUCTION

Nowadays, globalization has eliminated physical borders and led to the spread of cultural and business activities around the world, which aimed to promote economic development and particularly lead to increasingly significant competition between global economic actors and the need for states to manage financial, economic, environmental, and social problems, etc., on an international scale (Pasricha, 2005). According to several researchers, it has become indispensable for countries to expand their activities from national markets to international markets, where competition is higher, in order to benefit from opportunities, increase profits and develop the country's economy (Douglas and Craig, 1995). Otherwise, countries that are unable to increase their international activities are implicitly doomed to lose their market shares. Thus, the competition has become one of the concepts on which there have been many discussions in economic terms in recent years (Krugman, 1996).

During the eighties, the United States, which is known for its monopoly on most markets, experienced a significant economic decline as many Asian countries took place in the economic race and negatively impacted its position in diverse industries such as steel and electronics, shipbuilding, and automobile. Consequently, research on the concept of competitiveness has gained prominence and forced researchers to give more importance to the country and industries' competitiveness (Chaudhuri and Ray, 1997). The studies on competitiveness were held by different researchers that have diverse perspectives and methodologies, which, at the same time, has enriched the field and made it more complicated. Consequently, the subjectivity of studies has intertwined with the subjectivity of the concept, making it difficult to reach a consensus on the competitiveness concept (Daniels, 1991). Moreover, the geological, cultural and commercial factors that separate countries from each other have led to emerging different competitive strategies. While the cost element is accepted in some parts of the world market, the quality element is accepted in other places. Thus, before deciding on a particular strategy, it is compulsory to analyze and evaluate the competitiveness level to adopt an adequate and efficient one. Concerning our study, the evaluation will encompass Turkey and Morocco at the sectoral level as both countries have a prominent position in the regional and international economy.

Knowing the dynamic of Turkey and Morocco, which are trying to have a say in the international market against developed and developing countries, and creating alternative proposals against the obstacles, will help determine the steps to be taken in terms of competitiveness. Accordingly, studies on the competitiveness of Turkey and Morocco have started to take place in the literature in recent years (Arslan and Tathdil, 2012; Özer et al., 2012; Ozorhon and Demirkesen2014; Başkol, 2018; Azzouzi et al., 2007; Yasin et al., 2011; Brixiovaet al., 2014; Lotfi and Karim, 2016). They have been discussed by many researchers and academicians, enabling the determination of the weaknesses of different sectors, along with giving suggestions for increasing competitiveness in the relevant sectors. However, the common purpose of all these studies is to support the researched sectors and seek alternative ways of obtaining competitiveness.

In this context, our study aims to evaluate the competitiveness of Turkey and Morocco in three major sectors- vegetable products, textiles and textile articles, and products of chemicals or allied industries that have a high contribution to the countries' economy, to underline the weak and strong points of both countries through these sectors, support the previous researches and provide significant results for further studies in this field. After examining the literature, it is seen that one of the most used methods in measuring competitiveness at the sectoral level is the Revealed Comparative Advantages approach developed by Balassa (1965). Additionally, the approach was rectified by Vollrath (1991) and has become one of the methods frequently used in the analysis of international competitiveness today. Therefore, both indices will be used in the study to evaluate the competitiveness and provide accurate results.

According to the results section, Turkey and Morocco have shown high and weak competitiveness in different sectors at different periods. Based on the RCA and RTA indexes, Turkey has shown a comparative advantage in the "textiles and textile articles" sector and the "vegetable products" sectors throughout the period. Meanwhile, the "products of the chemical or allied industries" sector have shown a comparative disadvantage over the whole period. As regards Morocco, the "vegetable products "and "products of the chemical or allied industries" sectors have shown a comparative advantage over the last years. Meanwhile, the textiles and textile articles" sector has harshly decreased in the last years but held its comparative advantage based on the RCA and RTA indexes.

Moreover, the study was handled in different chapters besides the introduction chapter. In chapter 2, the concept of competitiveness is discussed based on the available literature. Additionally, theoretical background, empirical reviews, and strategies are also discussed besides competitiveness measurements to provide insight into the topic. In chapter 3 of our study, the current world's trade has also taken part in the second part, including the impact of the Covid-19 pandemic, where the data are delivered and discussed. Furthermore, Moroccan and Turkish sectors data were clearly exhibited and analyzed in order to divulge the position of each country at the trade level. In chapter 4, the revealed comparative advantage (RCA) and the revealed trade advantage (RTA) equations are illustrated and used in the calculations, whereas results are represented separately to have a comparative vision of both indices. Additionally, the international competitiveness of the three determined sectors was analyzed according to the Balassa and Vollrath indices, using the retrieved data between 2010 and 2020 from the "Trade Map" database developed by the International Trade Center (ITC). At the end of the study, the findings will be evaluated and discussed in order to suggest appropriate solutions that could implicitly increase the competitiveness of the determined sectors in the coming years.

2. THE CONCEPT OF COMPETITIVENESS: DEFINITION, THEORETICAL BACKGROUND AND EMPIRICAL REVIEW

In the last century, the concept of competitiveness has become the center of interest of different academics and politicians who intended to achieve the country's economic growth (Krugman, 1996). However, the interest in competitiveness has taken an increasing grant with the published book "Competitive Advantage of Nations" by Porter (1990), which expedited the spreading of the term competitiveness broadly and pervasively (Flanagan et al., 2007). Until then, different organizations - such as Organization for Economic Cooperation and Development (OECD), the European Union (EU), International Institute for Management Development (IMD), and World Economic Forum (WEF) - have started publishing annual reports evaluating the economic performance of different countries, which led to outstretch the interest in competitiveness among countries (Chikán, 2008; Gardiner et al., 2004).

2.1 THE THEORETICAL BACKGROUND OF COMPETITIVENESS

Throughout the years, scientists have come up with several approaches regarding competitiveness that have made the field more affluent. Moreover, the varying approaches from the classical to the modern times are chronologically provided below to display the competitiveness evolution over the last decades.

Krugman and Obstfeld (2003) have mentioned that the first explanation of why countries engage in international trade goes back to the theory of Adam Smith in 1876, which is known as the theory of absolute advantage. Based on the theory concept, specializing in the production of goods and services in which the country has a cost advantage compared to other countries and importing goods and services that have a cost disadvantage, conducted to the country's prosperity enhancement. Thus, Adam's theory gives an overall view of how countries generate profit by assuring the import-export balance. Krugman (1995) pinpointed imports as the most substantial for countries, while exports remain important since they pay for import needs. Moreover, Adam's theory has become paradoxical since it excludes some countries from importing and gaining from trade. Therefore, this theory paradox gave rise to the comparative advantage theory by David Ricardo (Smit, 2010). The theory of comparative advantage required countries to specialize in specific products which exceed other countries' efficiency (Krugman &

Obstfeld 2003). It also indicates that countries can export goods and services despite the cost disadvantage level and vice versa to import products. Ricardo's theory is entrenched in the labor theory of value, which is considered the only factor of production taken into consideration (Salvatore 2002).

Even though the theory of comparative cost advantage is composed of different strict assumptions, it does not affect its validity regarding trade gains. The fact that most principles of the World Trade Organization were established based on the theory of comparative advantage underlines the validity of Ricardo's theory (Root 2001). Moreover, several empirical proofs have supported the validity of the comparative advantage theory (Bernhofen & Brown 2004; Uchida & Cook 2005). Economists have required an alternative trade model as long as the Ricardian model cannot explain the direction of trade. Therefore, Salvatore (2002) mentioned that Heckscher Ohlin's theory sought to explain the reasons for comparative advantage differences between countries. In addition, the theory pointed out that countries differ in the intensities of capital and labor used in the production of goods and services. Despite various explanations for comparative advantage, the theory considers endowment or abundance as its main determinants (Salvatore 2002).

Leontief (1953) has carried out an empirical study to verify Heckscher Ohlin's theory. Based on the US belief of being a capital-intensive products exporter and the importer of a labor-intensive product, the result of Leontief's study showed the opposite. In addition, Baldwin (1979) has mentioned that different results confirmed the paradox for other countries such as India, Germany, and Canada. Therefore, this theory paradox has driven economists to come up with proper explanations such as the differences in human capital (Kenen 1965; Bowen 1985), the technology gap (Gurber et. Al 1967), or the product cycle theory (Vernon, 1966). Grubel and Lloyd (1975) asserted that these theories have successfully clarified the inter-industry trade. In contrast, they were not able to give an explanation of the intra-industry trade. Therefore, economists have established several trade theories to appease the perfect competition assumptions and constant economics of scales which led to opening up the possibility of government intervention and increasing international competitiveness (Smit, 2010).

Since the Second World War, the two-way trade in similar industries has begun to occupy a large part of the trade, while competitive advantage theory is no longer able to explain it.

In addition, it makes the traditional theory impractical to illustrate the intra-industry trade (Linder, 1961). During 1970, industrial-organizational theorists have introduced the new models of monopolistic competition that sought to concentrate on economies of scale to explain trades instead of imperfect competition (Krugman, 1990).

Smit (2010) concluded that comparative advantage remains the adequate explanation for the trade flows at the inter-industry trade level, whereas, economies of scale have become the dominant explanation of trade flows at the intra-industry trade level. In contrast, both theories showed a similarity by considering that advantage come through specialization. Later, Krugman (1992) indicated that the focus of scientists has redirected towards the oligopolistic theory, where the number of competitors is sufficiently limited based on economies of scale. Smit (2010) has mentioned that both oligopolistic and monopolistic theories were not able to explain in which location the production will occur. Therefore, Porter (1990) came up with a new theory to explain the advantages of both location and countries' competitiveness. He determined four characteristics to analyze the national competitiveness advantage: Demand conditions, company strategy, structure, and rivalry, related and supporting industries, and factor conditions. Olczyk (2016) clarified that Porter's concept is composed of different theories, where factor conditions are correlated to classical and neoclassical economics, related and supporting industries are connected to polarization theory, company strategy, structure, and rivalry relate to Schumpeter's theory, structure, and rivalry, and demanded conditions derive from Rostow's theory.

Porter's diamond model has also encountered some criticism, even though it is involved in different international competitive studies of many countries. Furthermore, management and economics scholars have both revealed the model's weak aspects (Dunning 1993; Boltho 1996). Since the original model did not include multinational activities, Dunning (1993) developed Porter's model by adding different variables, such as pro-competitive policies, foreign direct investment, and government policies. Cho et al. (2008) have also added four human variables: professionals, workers, politicians, bureaucrats and entrepreneurs. Whereas economists, in turn, have revealed further weaknesses in Porter's model, such as the weakness of prediction ability and connection with international trade theories.

Despite the criticisms, Porter's model has remained indispensable in analyzing international competitiveness. It was the reason behind creating two important indices of competitiveness that were published the IMD’s World Competitiveness Yearbook and the World Economic Forum Report (Olczyk, 2016). Thus, WEF has created the Growth Competitiveness Index (GCI) based on the assumption that international competitiveness is such a multidimensional phenomenon. This index included twelve competitiveness pillars dedicated to measuring different competitiveness aspects. In turn, the GCI index was not exempted either from criticism even though it is the most recognized among international competitiveness indicators. Despite the number of available theories, international competitiveness remains open to different questions (Berger and Bristow, 2009).

2.2 THE EMPIRICAL REVIEW OF INTERNATIONAL COMPETITIVENESS

Through this section, an empirical review will be held in order to display the previous studies of international competitiveness and gain knowledge through direct and indirect observation or experience. In our case, we will be interested in the empirical studies of Turkey and Morocco on international competitiveness to have a conspicuous vision regarding the methods used to measure competitiveness and the obtained results.

2.2.1 The International Competitiveness Of Turkey: Empirical Review

Yercan and Isikli (2009) conducted a significant study on the international competitiveness of Turkey's horticultural products. The authors employed the Domestic Resource Cost approach developed by Michael Bruno in 1960 to measure the sector competitiveness. However, the study has also included a comparison with the Mediterranean countries (Lebanon, Morocco, Jordan, Cyprus, Israel, Syria, Egypt, Tunisia, Greece, and Spain). According to findings, the Turkish horticultural sector has shown an international competitive advantage, where tomatoes are the most competitive crop, followed by watermelons, melons, and tangerines in 2004, due to its competitive cost of production, advantageous climatic conditions and expansion toward the EU market.

Arslan and Tathdil (2012) carried out a study on Turkey's international competitiveness. The study has included a comparative analysis of Turkey with 11 other countries (Malaysia, Korea, South Africa, Vietnam, Colombia, China, India, Indonesia, Russia, Brazil, and Egypt) that are supposed to be potential rivals. Additionally, the authors have measured the international competitiveness of Turkey among rival countries by using three known methods, the World Competitiveness Yearbook, the Global Competitiveness Report, and the Business Competitiveness- Ease of Doing Business Report. Based on the obtained results, the countries were classified into three groups. The first group, which is the more competitive, involves Malaysia and Korea, the second group involves Turkey, South Africa, Colombia, Vietnam, and China, while the third group, which is the least competitive, involves Indonesia, India, Brazil, Russia, and Egypt.

Özer et al. (2012) performed a noteworthy study on Turkey's international competitiveness regarding the tourism industry. However, the authors have selected Spain for the comparative analysis since it is one of the leading countries in the tourism sector, using the Diamond Model of Porter. A questionnaire was conducted based on the diamond model and the conclusions of academicians. It involves two types of questions, the open-ended questions and the 3-scale Likert method. The questionnaire was conducted on senior managers of hotels in Istanbul and Madrid. According to the results, substantial differences and similarities between the two countries were deduced, and suggestions were developed in order to improve the Turkish lodging industry and eliminate deficiencies.

Başkol (2018) carried out a substantial study on the international competitiveness of Turkey's textile and clothing sector between 1989 and 2015. The author measured the sector competitiveness based on Balassa's Revealed comparative advantage (RCA) index and Vollrath's Revealed Trade Advantage (RTA) index. According to the indexes results, the Turkish textile and clothing sector has shown a comparative advantage in the international market throughout the period. Meanwhile, the clothing industry has incurred a noticeable decline in recent years, which can negatively impact the competitiveness of the textile and clothing sector in further years.

2.2.2 The International Competitiveness Of Morocco: Empirical Review

El Mekki et al. (2006) conducted a study on meat sub-sector competitiveness in Morocco (the case of beef and poultry). It included a comparison with France and the United States. The authors used effective and nominal coefficients besides the domestic resource coefficient (DRC) to evaluate the domestic comparative advantage. According to the cost-competitiveness index, the results revealed that Moroccan poultry and beef are less competitive than French and American products, while Moroccan beef is quite competitive than poultry. Moreover, the Domestic Resources cost index revealed that beef competitiveness is neutral since its DRC value reached 1. Meanwhile, the beef DRC value was 1.34, which means that Moroccan beef has a comparative disadvantage.

Azzouzi et al. (2007) conducted a study on Morocco that aims to measure the international competitiveness of vegetables, fruits, and olive oil and disclose the effect of incentive policy on performance. The authors have employed the Effective Protection Coefficients (EPC) and the Nominal Protection Coefficients (NPC), on the one hand, to evaluate the local incentive policy and the Domestic Resource Cost (DRC), on the other hand, to measure international competitiveness. In our case, we will be interested in the international competitiveness part. However, the results have revealed that the country has a comparative advantage since the DRC ratio varies from 0.36 for tomatoes to 0.93 for olive oil.

ELAME et al. (2019) performed an economic analysis of the competitiveness of the tomato sector in the Souss-Massa region of Morocco. The authors used the policy analysis matrix method (PAM) to calculate the Nominal protection factor, Effective protection factor, and Domestic resource cost. According to the obtained results, the production of the tomato sector on farms in the Souss-Massa region is profitable. However, it shows a comparative advantage at reference prices and its DRC is less than 1, which confirms that tomato production has a comparative advantage.

Álvarez (2020) carried out a study on the competitiveness of Moroccan agricultural products in the EU market. It aimed to reveal the position of Morocco in a single market and measure its competitiveness. Therefore, the author used the Revealed comparative (RCA) index developed by Balassa (1965) to measure the international competitiveness of 17 Moroccan agricultural products in the EU market. According to the results, twelve products have shown a comparative advantage since their RCA values are above 1. Meanwhile, five products have revealed a comparative disadvantage since their RCA values are above 1. Thus, Moroccan agricultural products have generally shown high competitiveness in the EU market, displaying that the country has performed well in a single market and improved its export throughout the determined period.

2.3 THE DEFINITION OF COMPETITIVENESS

Throughout the years, scientists and scholars have defined the concept of competitiveness from different sights and according to specific factors. Porter (1990: 76) mentioned that competitiveness is effectively related to the national level of productivity through Porter's diamond model (Figure 2.1), which emphasized the importance of four key factors (Firm strategy, structure and rivalry, demand conditions, related supporting industries and factor conditions) leading to competitiveness.

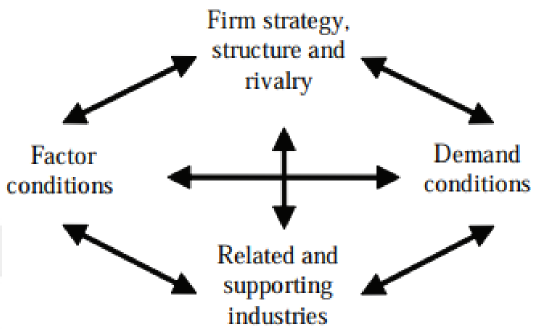

Figure 2.1: Porter’s Diamond Model for The Competitive Advantage of Nations
Source: (Porter 1990: 78)

Sharples and Milham (1990) have pinpointed competitiveness as the ability to deliver goods and services at the place, time, and form required by external buyers at a price that could be equal to or better than that of other competitor suppliers while gaining at least the opportunity cost of employed resources. In contrast, Hickman (1992) has associated competitiveness with the country's level of productivity according to different relevant criteria such as the rhythm of productivity, the trade policy in both present and past, different technological change models based on strategic developments, and economic systems, and the country characteristics (geographical location and natural endowments).

European Commission (1999: 4) stated that competitiveness is embodied in the capability of producing goods and services that have the essential potential to compete in the international market, on the one hand, ensuring revenue sustainability and high employment level on the other hand. Likewise, Oughton and Whittam (1996: 59) stated that competitiveness is strongly related to the sustainable growth of productivity, which implicitly enhances the living standards and ensures a high level of employment.

Stanovnik & Kovačič (2000) have defined competitiveness in line with "The International Institute for Management Development" (IMD) and "The Organization for Economic Co-operation and Development"(OECD) definitions. In accordance with IMD definition, international competitiveness aims to increase national wealth and create added value through managing processes and assets, aggressiveness and attractiveness, proximity and globality, and also by incorporating these acquaintances into a social and economic template. Whereas, the OECD definition mentions that international competitiveness is related to the country's production level under market conditions, on the one hand, maintaining and enhancing the financial resources of its people in the long term on the other hand (Stanovnik & Kovačič, 2000).

In addition to the preceding viewpoints, Bloch and Kenyon (2001) beheld international competitiveness as the capability of a country to achieve economic goals such as improvement in employment and revenue without incurring difficulties in the balance of payment. Furthermore, Chikán (2008: 25) has defined competitiveness as the country's ability to ensure an adequate situation for its citizens by delivering the necessary environmental conditions to both institutions and companies in order to provide goods and services that meet the market expectation and compete with other rivals.

2.4 COMPETITIVENESS LEVELS

According to the definitions above, the competitiveness concept is differently evaluated owing to its various definitional structures. Therefore, the competitiveness can be examined at three main levels: Firm-level, industry/sector-level, and national/international level.

2.4.1 Firm-Level

In a given market, the company's competitiveness is incarnated through its ability to occupy a dominant position and generate a significant profit in order to procure crucial market shares (Krugman and Obstfeld, 2009). However, to achieve competitiveness, each company must wisely use its capacities and resources to produce an adequate product or service that meets the consumer's expectations (Wysokinska, 2003). In addition, the company's competitiveness involves different assets that are both tangibles and intangibles (human resources, technology, material inputs, reputation, trademarks, and segment infrastructure) which provide competitive advantages to the company (Siudek and Zawojska, 2014).

Buckley et al. (1988) argued that the firm's competitiveness is affiliated with the firm's capability to deliver a high quality of products and services at a lower cost compared to its national and international competitors. He also mentioned that competitiveness is characterized by ensuring a firm's profit durability and rewarding its employees, which will implicitly increase productivity. Furthermore, Chao-Hung and Li-Chang (2010) pinpointed the firm's competitiveness in the economic potency compared to its competitors in the international market where the geographical borders are inconsequential.

2.4.1.1 Competitiveness strategies

Owing to the rising level of competitiveness, companies have started executing different strategies during the competitiveness process in order to maintain their competitive advantage among other competitors. Therefore, Porter has set up three different strategies – such as cost leadership strategy, differentiation strategy, and focus strategy – which allow the company to be on the level of competitiveness in the international market (Tanwar, 2013: 11). Porter (1985) has indicated that these strategies are compulsory for achieving and maintaining a competitive advantage when otherwise, the company is doomed to failure.

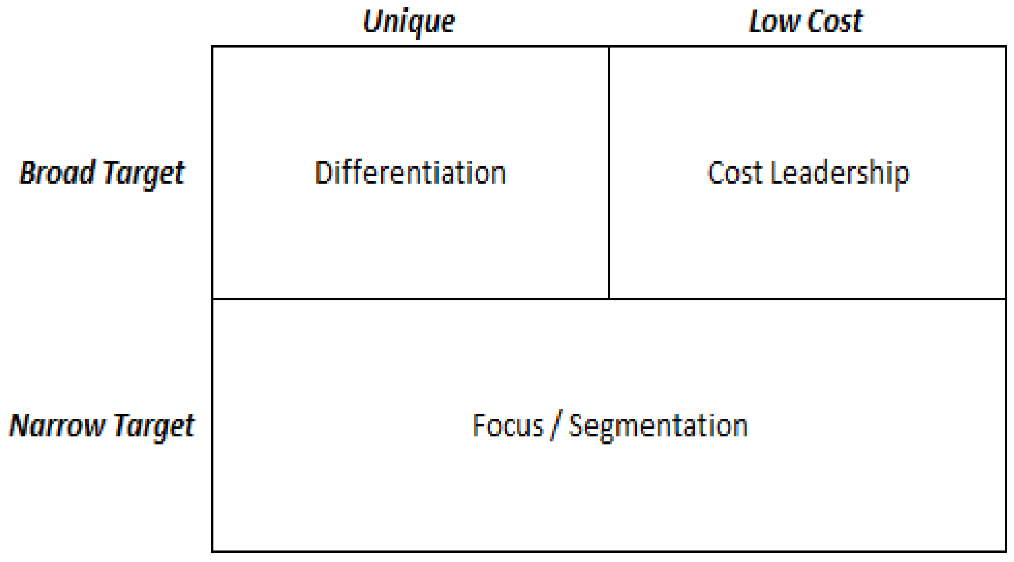

Figure 2.2: The Three Generic Strategies

Source: (Tanwar, 2013: 12)

Cost leadership: is a frequently adopted strategy by companies that seek to provide consumers with products or services at the lowest price in the entire market. Thus, the main objective of the company is to minimize its total costs, i.e., its fixed costs (costs of design, research, and development, marketing costs, costs related to investments, administrative costs, etc.) as well as its variable costs (manufacturing costs, distribution costs, proportional or not, etc.) (Tanwar, 2013: 12).

The cost leadership strategy advantages (Porter, 1997: 16):

a) The strategy aims to increase the company turnover, enhance market shares and improve profitability.
b) The strategy contributes to weakening or directly eliminating competitors who are not able to provide the same prices in the market.
c) The strategy allows the company to be in a strong position and create barriers against new entrants due to its unbeatable low costs.

The cost leadership strategy drawback (Porter 1997: 16):

a) If the competition is intense, the strategy can directly lead to a price war which can negatively impact all the companies in the sector.
b) The strategy requires significant investments in terms of production which automatically reduces the innovation capacity.

The differentiation strategy: consists of offering a product or service that is considered unique and different from those of competitors. The differentiation can be related to different aspects - such as reliability, quality, safety, technology, and innovation - which lead the company to monopolize the market (Tanwar, 2013: 12-13). The differentiation strategy has two different orientations. In the first one, the company can present a product or service at a high price, shedding the light on its uniqueness. Otherwise, the company can strip the product from unnecessary details in order to provide low prices (Sharp, 1991: 5)

The differentiation strategy advantages (Porter, 1997: 17):

a) The differentiation strategy allows the company to avoid direct competition with companies that pursue the cost domination strategy.
b) The differentiation strategy constructs barriers that deter the entrance of new competitors (with patents or a brand) and builds customer loyalty.

The differentiation strategy drawback (Porter, 1997: 17):

a) Customers must clearly perceive the difference between the company's offer and the competitor's offer.
b) The company must be able to preserve its unique position by making its differentiators difficult to imitate.

The focus strategy: consists of the company developing its activity on a particular product or market segment. Owing to the lower costs and the strategy risks, it usually interests small and medium-Sized enterprises or new entrants in a given sector (Porter, 1997: 17). Moreover, the focus strategy is justified by the holding of the company's comparative advantages in terms of costs or differentiation, as well as the competitors' disinterest due to the product requiring investments whose profitability is insufficient (Tanwar, 2013: 14-15).

The focus strategy advantages (Porter, 1997: 17):

a) The focus strategy intends to avoid competing with large companies.
b) The focus strategy allows the company to understand the customers' wants and meet their expectations in order to retain them.

The focus strategy drawback (Porter, 1997: 17):

a) The focus strategy makes the company dependent on a segment that may become excessively narrow and on which demand may decline for various reasons.
b) The narrow segment in which the company operates can also attract other companies owing to its profitability.

2.4.2 Industry/Sector-Level

The industry is defined as a group of companies that produce the same or related goods and services (Demsetz, 1997). However, Porter and Van De Linde (1995) claimed that competitiveness should be defined at the industry level through industrial segments and specific industries instead of focusing only on the national level. He also incarnated industrial competitiveness through the ability to produce superior products at a premium price or ensure low costs compared to rivals while delivering good quality.

McFetridge (1995) has asserted that an industry that competes with its international competitors can be considered competitive if it achieves average/above-average rates of return against its rivals. In addition, Sirikrai and Tang (2006) mentioned that competitiveness at the industry level has a significant role for countries that follow export-oriented industrialization policies. Furthermore, Porter (2008) claimed that the industry's competitive structure is determined by five basic forces, the threat from substitute goods or services, the threat of new entrants to the industry, the bargaining power of buyers, the bargaining power of suppliers of raw materials or semi-products, and competition among existing competitors.

2.4.3 National/International Level

Research on international competitiveness and its determinants have emerged in 1970s, conquering the international economic area (Olczyk, 2016). National competitiveness is defined as the country's ability to ensure the endurable growth of different productivity factors that lead to the citizens' well-being. He also claimed that providing a suitable environment to firms and organizations will beneficially aid in producing goods and services that meet the international market requirements and convoy the changing norms (Chikan, 2008: 25).

Porter (1990) states that competitiveness is tightly linked with productivity and has a key role in producing a high standard of living for the citizens. Furthermore, he suggested developing the essential abilities to compete in several sophisticated industries that required a high level of productivity (Delgado et al., 2012: 7). However, competitiveness is not incarnated only in the ability to maintain the international trade balance and sell goods to the external market, additionally, it is embodied in the country's ability to increase the employment level and profit while enhancing its international market shares and the quality of life (European Commission, 1999: 4).

2.5 DETERMINING FACTORS OF COMPETITIVENESS

Despite the difficulties encountered by economists to pinpoint a consensual definition of international competitiveness, its importance in the countries' economic performances is irrefutable and a wide consensus. Several studies have asserted that international competitiveness has a crucial role in economic growth in the medium and long term (Balkytė and Tvaronavičienė, 2010; Herciu, 2013). In today's open global economy, companies and industries seek the necessary advantages to survive in the competitive environment in both domestic and foreign markets. Fagerberg (1988) has proposed a model of international competitiveness that links the growth in market share to different factors that determine the ability of the economy to compete in terms of price, technology and distribution.

Porter (1990) claimed that the competitiveness of a nation depends on the ability of its industries to innovate and improve. Furthermore, he proposed the Diamond Model, according to which the determinants of international competitiveness can be grouped into four sets (Figure 2.1). However, he initially explained the role played by each of these factors in the performance of companies and consequently of the national economy, then comes back to the contribution of these four factors taken as a whole.

Later, both domestic and international human factors, as well as other international factors such as the activities of multinational corporations, were identified as determinants of a country's competitiveness (Rugman and D'Cruz, 1993; Dunning, 2003; Cho, Moon and Kim, 2006). In addition, Delgado et al. (2012) have shown the role of microeconomic factors besides macroeconomic factors in the competitiveness of nations. However, macroeconomic factors determine the general conditions that are not directly related to the business but enable high productivity. These are social infrastructure and political institutions, monetary and fiscal policy. In contrast, the microeconomic factors are very varied and are essentially similar to the factors listed by Porter (1990).

2.6 INTERNATIONAL COMPETITIVENESS MEASUREMENTS

Due to the significant international competition in the last years, developing countries have become more interested in the international competitiveness measurements as an indispensable element of economic analysis (Abbas and Waheed, 2017). Moreover, globalization and trade liberalization have engendered fundamental changes in the world trade structure, which enhanced the importance of international competitiveness measurement among developing countries while respecting competitors in the trade market. Here are some of the most commonly used indicators to measure international competitiveness.

2.6.1 Revealed Comparative Advantage (RCA)

In the 20th century, Balassa (1965) proposed the Revealed Comparative Advantage Index in a seminal paper for the first time. Since then, the approach has been used in several reports and academic publications (e.g., World Bank 1994; Van Hulst et al. 1991) to analyze international trade competitiveness. However, the Revealed Comparative Advantage definition has incurred different modifications throughout the years. Some specifications measured RCA at the sub-global or regional level (which is the original purpose of Balassa), others at the global level (e.g., Vollrath, 1991). Although, some used it to analyze the trade between two partners or countries (e.g., Gual and Martin, 1995).

Balassa Revealed Comparative Advantage was not exempt either from criticism. Yeats (1985) proclaimed that the Balassa index measured only the country's competitiveness in a particular sector at a specific time. Furthermore, the index has also been criticized for its unstable distribution characteristics, which negatively affect the ordinal ranking (Hinloopen and Van Marrewijk, 2001). Despite the incurred criticisms, several studies have approved the index's effectiveness through different examinations and highlighted its significant role in measuring competitiveness (Kilduff & Chi, 2007; Kuldilok et al., 2013)

2.6.2 Revealed Trade Advantage (RTA)

The Relative Trade Advantage (RTA) has been extended from Balassa's model (RCA) by Vollrath (1991). It rectified the gap in the RCA index by eliminating the double-counting of countries and products through using Relative Export Advantage (RXA) and Relative Import Advantage (RMA) and also taking into consideration both export and import data (Ferto and Hubbard, 2003; Banterle and Carraresi, 2007)

Bojnec and Fertő (2009) explained that the Relative Trade Advantage (RTA) index is the difference between the relative import advantage index (RMA) and the relative export advantage index (RXA), which is similar to Balassa’s RCA index. Moreover, several studies have been carried out to analyze the trade performances and competitive advantages of different countries based on the Relative Trade Advantage, focusing on both exports and imports (Mosoma, 2014; Maksymets and Lönnstedt, 2016).

2.6.3 Global Competitive Index (GCI)

Since 2005, the Global Competitiveness Index has become the most index used by the World Economic Forum (WEF) to analyze and measure competitiveness among countries based on microeconomic and macroeconomic foundations (Schwab, 2010). The theoretical background of the Global Competitiveness Index beheld the country's economic growth and the well-being of citizens as the main drivers of competitiveness, highlighting the importance of the country's economic conditions (Petrylė, 2016).

The Global Competitiveness Index contains 12 pillars based on different studies, from Adam Smith's labor specialization to neoclassical economists that focus on the physical capital investment. Whereas, each pillar includes different components that measure various competitiveness aspects (Coduras and Autio, 2013). Like many other indexes, Global Competitiveness Index has incurred criticisms from different scientists regarding the type of data. Zinnes et al. (2001) claimed that using survey data besides statistical data is not a rational manner of measuring which country is more competitive, arguing that opinions are subjective and could not be efficient in judging a country's position.

3. THE INTERNATIONAL TRADE OF MOROCCO AND TURKEY IN THREE MAJOR SECTORS: VEGETABLE PRODUCTS, TEXTILES AND TEXTILE ARTICLES, AND PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES

Through this section, the world trade data of recent years, including the Covid-19 period, are generally given at the merchandise and services trade levels. Additionally, the trade analysis of Morocco and Turkey regarding vegetable products, textiles and textile articles, and products of chemicals or allied industries sectors, occupies the most important part, where the export and import data of these sectors are extensively provided in order to unveil the position of each country and gather the necessary information for the methodology part.

3.1 WORLD TRADE

Throughout the last decades, world trade has encountered different changes and fluctuations owing to various factors. Through this part, world trade of the last twenty years is provided in terms of merchandise and services. Thus, the first subsection will involve the world's merchandise trade analysis, while the second subsection will involve the service trade analysis over the last twenty years.

3.1.1 Merchandise Trade

In the last twenty years, the world merchandise trade has known a significant growth in terms of exports and imports as well. Additionally, the merchandise exports and imports values have reached US$ 17.5 and US$ 17.7 trillion in 2020, respectively. As is shown in figure 3.1, both merchandise exports and imports values encountered a notable decrease in 2009 due to the world economic crisis. Thus, the merchandise export value passed from US$ 15.9 trillion in 2008 to US$ 12.3 trillion 2009, while the merchandise import value moved from US$ 16.3 trillion in 2008 to US$ 12.6 trillion in 2009.

After recovering from the 2008 economic crisis, the world merchandise trade experienced a further decline in 2015 due to miscellaneous causes such as the fall in the value of the euro against the dollar and the drop in the price of oil and other different commodities. Thus, the merchandise export value passed from US$ 18.8 trillion in 2014 to US$ 16.4

trillion in 2015, while the merchandise import value moved from US$ 18.9 trillion in 2014 to US$ 16.5 trillion in 2015.

In 2020, the world merchandise trade has known a crucial situation due to the Covid-19 epidemic. Accordingly, the merchandise export value moved from US$ 18.7 trillion in 2019 to US$ 17.5 trillion in 2020, while the merchandise import value moved from US$ 19 in 2019 trillion to US$ 17.7 trillion in 2020.

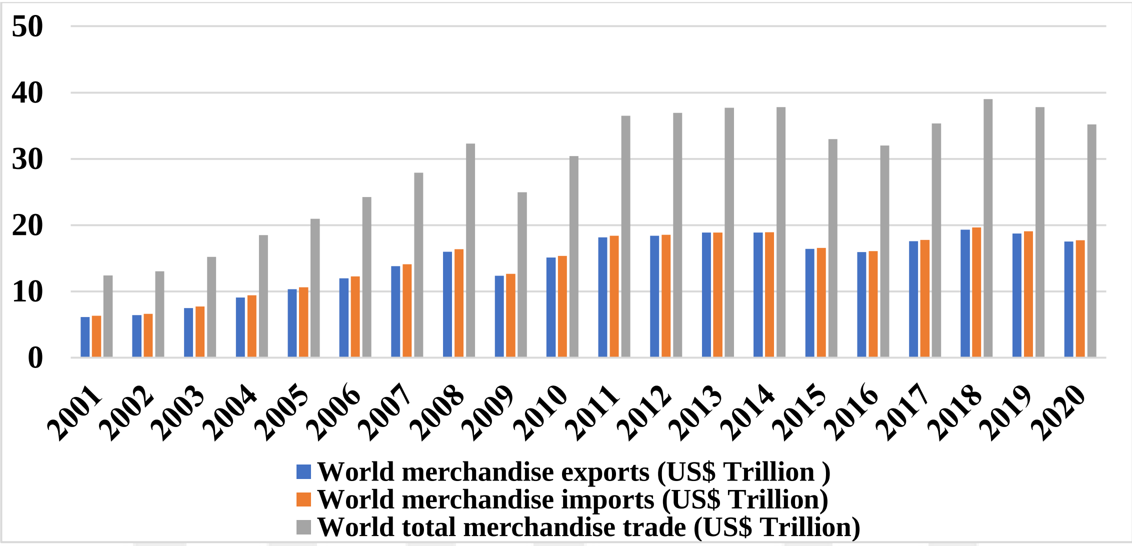

Figure 3.1: World Merchandise Trade 2001 – 2020 (US$ Trillion)

Source: ITC database (Author's calculation)

3.1.2 Service Trade

Following the world merchandise trade pathway, world services trade has experienced a substantial increase over the last years. Additionally, the world services exports and imports have reached US$ 4.9 trillion and US$ 4.6 trillion in 2020, respectively. Similar to the merchandise trade, the world service trade encountered a significant decline in 2009 due to the economic crisis. Moreover, the export value passed from US$ 3.9 trillion in 2008 to US$ 3.5 trillion in 2009, while the import value passed from US$ 3.7 trillion in 2008 to US$ 3.4 trillion in 2009.

As is clearly seen in figure 3.2, the world service trade experienced a further decline in 2015 owing to various causes, such as the fall in the value of the euro against the dollar and the drop in the price of oil and other commodities. Consequently, the service export value passed from US$ 5.2 trillion in 2014 to US$ 4.9 trillion in 2015, while the service import value moved from US$ 5.1 trillion in 2014 to US$ 4.8 trillion in 2015.

After recovering from the 2015 economic crisis, the world service trade has known a crucial situation due to the Covid-19 epidemic. Additionally, the service export value moved from US$ 6.2 trillion in 2019 to US$ 4.9 trillion in 2020, while the merchandise import value moved from US$ 5.9 trillion in 2019 to US$ 4.6 trillion in 2020.

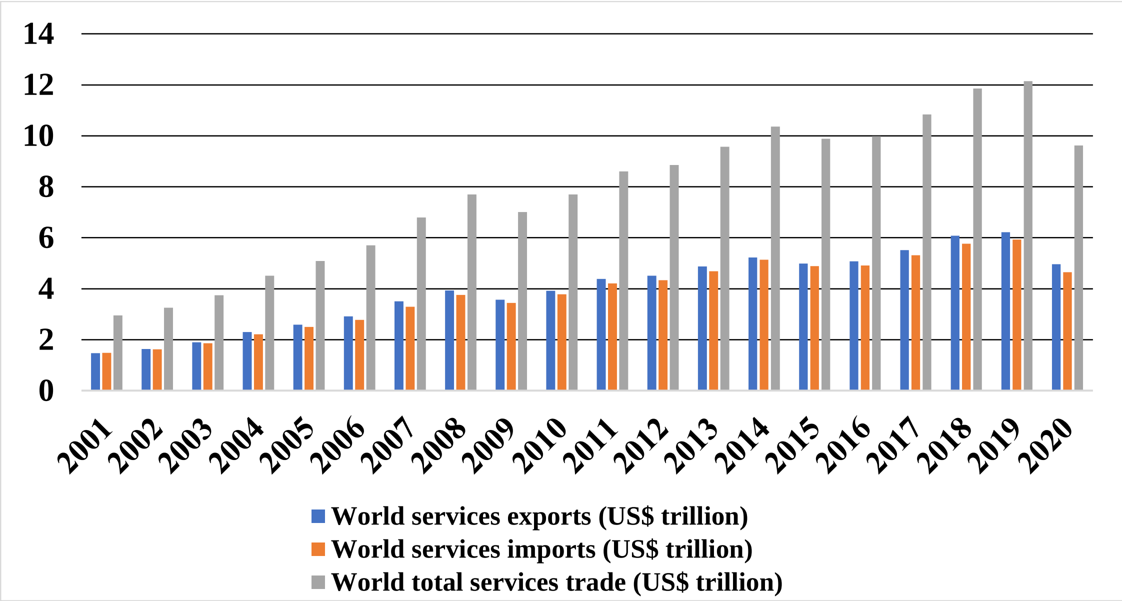

Figure 3.2: World Services Trade 2001–2020 (US$ Trillion).

Source: ITC database (Author's calculation)

3.1.3 The Impact Of Covid-19 On World Trade

Through this section, the impact of Covid-19 is clearly shown at different level (International trade volume, GDP, merchandise export and import), in order to bring to our attention to the world's last current economic crisis.

3.1.3.1 Overview

The COVID-19 epidemic has spread sufferance among humans and surprised the whole world with its uncontrollable propagation. In addition to this human health tragedy, the required measures to control COVID-19 have led to a disequilibrium in economic activity (Kerr, 2020). In other words, the government restrictions were the main reason for the global trade detriment. For example, China has imposed severe restrictions on the country, while Sweden has followed the laissez-faire approach, and The UK followed various tracks during the crisis (Mayer and Lewis, 2021). However, the epidemic had a swift and substantial impact on international trade.

Based on the World Trade Organization report (2021a), the world merchandise trade has experienced a decrease of 5.3% in 2020 due to the pandemic, following the previous year that reached only 0.2% of volume growth. Meanwhile, the world real GDP has incurred a contraction of 3.6% at market exchange rates (Figure 3.3). Furthermore, the decline was even more remarkable in terms of US dollars, while the exports value declined by almost 8% and moved from 18.9 trillion US dollars in 2019 to 17.6 trillion US dollars in 2020. In addition, the commercial services export value has encountered the most damage and incurred a decrease of 20%, reaching 4.91 trillion US dollars, due to lockdowns, travel restrictions and by giving more importance to merchandise import (World Trade Organization, 2021a).

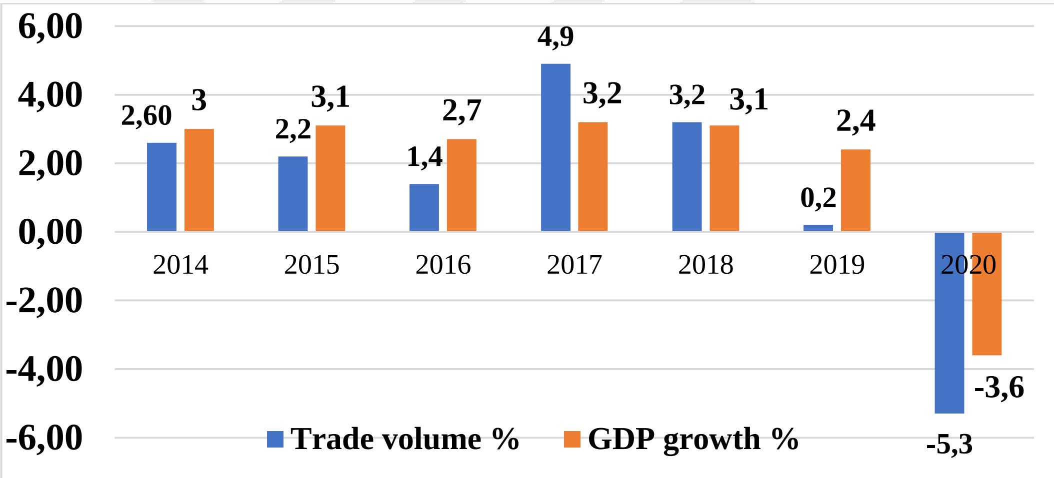

Figure 3.3: World Merchandise Trade Volume and Real GDP Growth, 2014-2020

Source: WTO (Author's calculation)

3.1.3.2 World trade analysis during the pandemic period

According to the World Bank Group, the impact of COVID-19 has become outstanding in March 2020 due to a decrease of 11.9% in world exports of goods and 12.4% in world imports of goods compared to the same period of the last year. In addition, the contraction of trade has severely affected different regions such as the European Union-27, the Middle East, South Asia, North Africa, sub-Saharan Africa, declining by 12.2% for exports and 14.2% for imports in each region (World Bank, 2020).

During the 2020 second quarter, Europe and America have experienced a massive decrease in export volume compared to previous periods, declining by 25.8% of total European exports and 20.4% of total American exports. In the fourth quarter of the same year, these two regions had incurred a decline of only 3.0% and 2.4% respectively. Meanwhile, the Middle East saw a sharped decline in exports due to travel restrictions, which decreased the oil consumption in the world (World Trade Organization, 2010b). After incurring a decline of 7.2% in the second period, Asia exports were up by 7.7% compared to the last year. Their quick recovery is due to the massive export of medical supplies and consumer goods throughout the period of COVID-19 (World Trade Organization, 2010b).

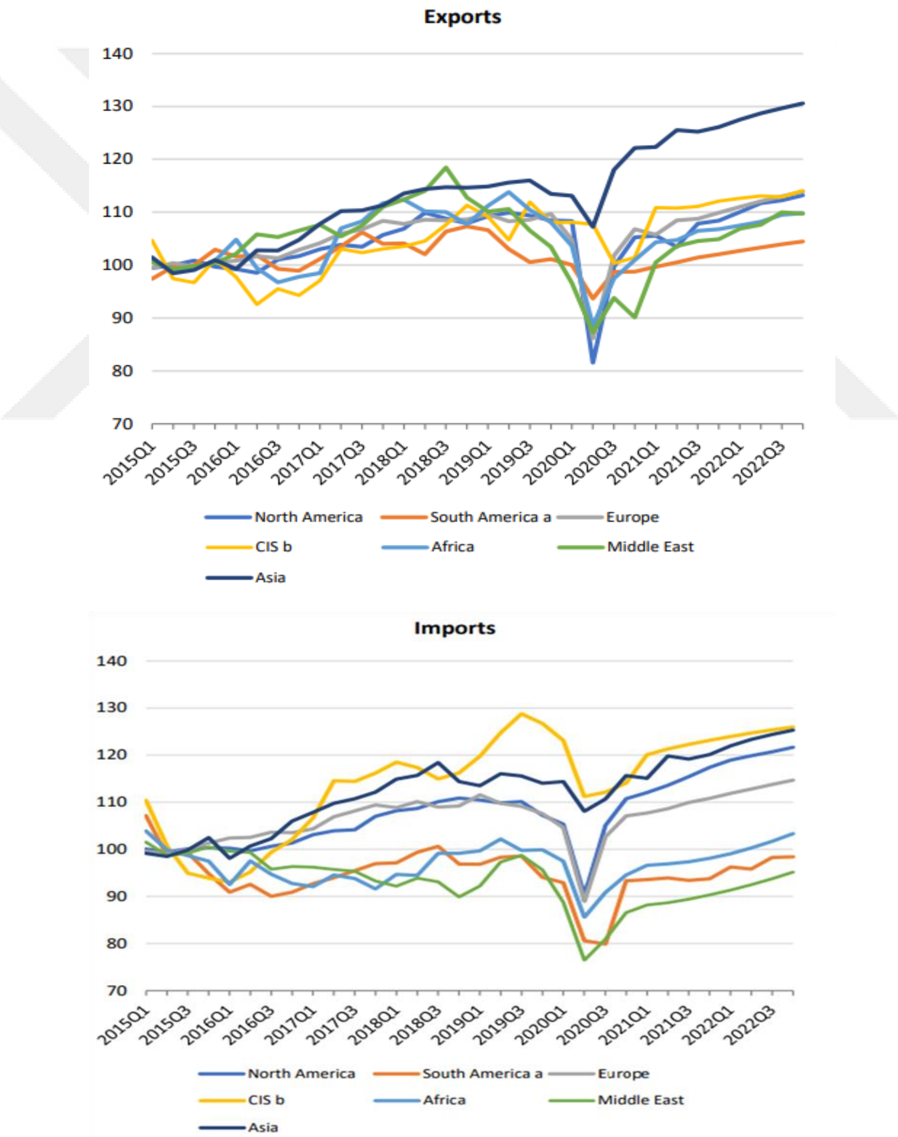

Figure 3.4: Merchandise Exports and Imports by Region 2015 Q1 - 2022 Q4

Source: WTO and UNCTAD

3.2 THE WORLD'S LARGEST EXPORTERS OF VEGETABLE PRODUCTS, TEXTILES AND TEXTILE ARTICLES, AND PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES SECTORS.

According to World Customs Organization, the three determined sectors are composed of different subsectors, and each subsector is defined by a particular code called Harmonized System Code. In addition, more details will be provided in the methodology part in order to understand the components of each sector independently (table 4.1, table 4.2, and table 4.3).

Through this section, the top 10 exporting countries of the three determined sectors, vegetable products, products of chemicals or allied industries, and textiles and textile articles, are clearly displayed in the tables below in order to unveil the leading countries and pinpoint the position of Turkey and Morocco among them. Additionally, the data were gathered and calculated based on the UN Comtrade Database for the year 2020.

3.2.1 The World's Largest Exporters Of Vegetable Products Sector

According to table 3.1 below, the leading countries in the vegetable products sector are clearly distinguished based on the data gathered from the UN Comtrade Database. Furthermore, Morocco and Turkey are also mentioned in the table in order to disclose their position regarding other countries.

Table 3.1: The World's Largest Exporters of Vegetable Products Sector (2020)

Rank	Countries	Sum of Trade Value (US$ million)
1	USA	72,655
2	Brazil	42,307
3	Netherlands	34,372
4	China	27,563
5	Canada	23,744
6	Spain	22,296

Table 3.1: The World's Largest Exporters of Vegetable Products Sector (2020) (Table Continued)

7	India	17,911
8	France	17,895
9	Mexico	17,280
10	Germany	15,257
17	**Turkey**	**8,595**
31	**Morocco**	**3,197**

Source: ITC database (Author's calculation)

Based on table 3.1 results, the USA is the first exporter country of the vegetable products sector with an amount of US$ 72,655 million, followed by Brazil with US$ 42,307 million, whilst the Netherlands occupied the third place with US$ 34,372 million and China in the fourth place with US$ 27,563 million. Canada and Spain's sum trade values are narrowly similar, reaching US$ 23,744 million and US$ 22,296 million, respectively. Additionally, India, France, and Mexico have shown similarities in terms of export values, reaching US$ 17,911 million, US$ 17,895 million, and US$ 17,280 million, respectively. Germany comes in the tenth position, reaching US$ 15, 257 million. Concerning Turkey and Morocco exports, both countries are not among the world's largest exporters of vegetable products sector. Furthermore, Turkey occupied the seventieth (17) position with an export value of US$ 8,595 million while Morocco occupied the thirty-one (31) position, reaching US$ 3197 million.

3.2.2 The World's Largest Exporters Of Textiles And Textile Articles Sector

According to table 3.2 below, the leading countries in the textiles and textile articles sector are clearly distinguished based on the data gathered from the UN Comtrade Database. Furthermore, Morocco and Turkey are also mentioned in the table in order to disclose their position among other countries.

Table 3.2: The World's Largest Exporters of Textiles and Textile Articles Sector (2020)

Rank	**Countries**	**Sum of Trade Value (US$ million)**
1	China	278,976
2	Germany	37,255
3	Viet Nam	37,081
4	India	29,505
5	Italy	29,480
6	**Turkey**	**27,262**
7	USA	22,724
8	Netherlands	17,215
9	Spain	15,688
10	France	15,476
34	**Morocco**	**3,007**

Source: ITC database (Author's calculation)

Based on table 3.2 results, China is the first exporter country of the textiles and textile articles sector with an amount of US$ 278,976 million. Germany and Viet Nam have shown similarities in terms of export values, reaching US$ 37,255 million and US$ 37,081 million, respectively. Likewise, India and Italy export values have reached US$ 29,505 million and US$ 29,480 million, respectively. In the sixth position, Turkey have reached an amount of US$ 27,262 million. The USA comes in the seventh position with US$ 22,724 million, Netherlands in the eightieth position with US$ 17,215, Spain in the ninth position with US$ 15,688 million, and France occupied the tenth position with US$ 15,476 million. However, Morocco has occupied the thirty-four positions, reaching US$ 3,007 million.

3.2.3 The World's Largest Exporters Of Products Of The Chemical Or Allied Industries Sector

According to table 3.3 below, the leading countries in products of chemicals or allied industries sector are clearly distinguished based on the data gathered from the UN Comtrade Database. Furthermore, Morocco and Turkey are also mentioned in the table in order to disclose their position among other countries.

Table 3.3: The World's Largest Exporters of Products of Chemicals or Allied Industries Sector (2020)

Rank	Countries	Sum of Trade Value (US$ million)
1	Germany	200,838
2	USA	166,411
3	China	137,427
4	Switzerland	122,428
5	Ireland	120,202
6	France	91,764
7	Belgium	85,376
8	Netherlands	84,775
9	Italy	65,122
10	Japan	61,335
34	**Turkey**	**8,867**
40	**Morocco**	**4,874**

Source: ITC database (Author's calculation)

Based on table 3.3 results, Germany is the leading country in the products of the chemical or allied industries sector with an export value of US$ 200,838 million, followed by the USA in the second position with an export value of US$ 166,411 million. In the third place, we have China with US$ 137,427 million followed with Switzerland in the fourth position with US$ 122,428 million. In the fifth position, Ireland reached an amount of US$

120,202 million. France comes in the sixth position with US$ 91,764 million. Belgium and Netherlands have shown similarities in terms of export values, reaching US$ 85,376 million and US$ 84,775 million, respectively. Italy occupied the nineth position with US$ 65,122 million followed by Japan in the tenth position with US$ 61,335 million. Additionally, Turkey and Morocco occupied the thirty-four and fortieth position, reaching US$ 8,867 million and US$ 4,874 million, respectively.

3.3 MOROCCO INTERNATIONAL TRADE

At the beginning of 1980, the Moroccan economy has experienced an orientation toward trade liberalization and leaned on the private sector and market forces. Therefore, the macroeconomic management of Morocco has become more prosperous than other countries in Northern Africa and the Middle East based on several indicators such as the budget deficit level, the real exchange rate, and volatility of inflation (Lofgren, 2000). The country had concluded several trade agreements with regional and bilateral partners to broaden its trade. Thus, the country has become more open to the international market by reducing tariffs, mitigating non-tariff barriers, and simplifying foreign procedures trade (Walkenhorst and Malouche, 2006).

3.3.1 Moroccan Merchandise Trade

Since 2000, Moroccan merchandise trade has experienced a significant increase in export and import value, reaching 27.159 billion US dollars and 43.83 billion US dollars in 2020, respectively (figure 3.5). For further information, the merchandise export value of 2019 was the highest one in the country's history reaching 29 billion US dollars. In contrast, the highest merchandise import value was in 2018, reaching 51.038 billion US dollars (World Trade Organization, 2020; World Trade Organization, 2021a).

Like many countries, Cristina Paciello (2010) has mentioned that Moroccan trade endured a critical situation due to the 2008 economic crisis. The annual percentage change of merchandise export value declined by 32% in 2009, reaching 14 billion US dollars compared to 20.1 billion US dollars in the previous year. In contrast, the annual percentage change of merchandise import value declined by 22% in 2009, reaching 33 billion US dollars compared to 42.3 billion US dollars in the previous year (World Trade Organization, 2010).

During the pandemic period, Morocco has experienced a significant decline in the merchandise trade value of 2020. More specifically, the annual percentage change of merchandise export value declined by 7% in 2020, reaching 27 billion US dollars compared to 29 billion US dollars in 2019, while the percentage of shares remained 0.2%, compared to the previous year (figure 3.5). Meanwhile, the annual percentage change of merchandise import value declined by 14% in 2020, reaching 44 billion US dollars compared to 51 billion US dollars in 2019, while the percentage of shares remained 0.3%, compared to the previous year. (World Trade Organization, 2020; World Trade Organization, 2021a).

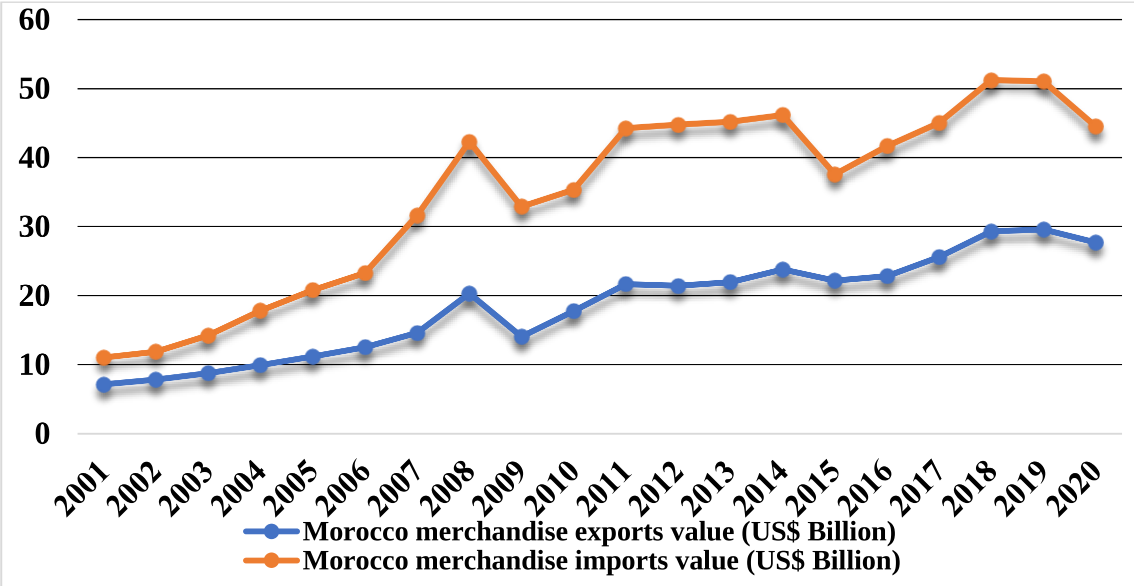

Figure 3.5: Morocco Merchandise Exports and Import 2001-2020 (US$ Billion)

Source: ITC database (Author's calculation)

3.3.2 Moroccan Commercial Services Trade

At the beginning of the 2000s, Moroccan commercial service trade has witnessed a significant increase in export and import value, reaching 13.26 billion US dollars and 6.13 billion US dollars in 2020, respectively (figure 3.6). The country's highest export value of commercial service was in 2019, reaching 18.72 billion US dollars. In contrast, the highest import value of commercial service was in 2018, reaching 9.25 billion US dollars (World Trade Organization, 2021a).

In contrast to the losses in merchandise trade, Moroccan commercial service trade was less affected by the 2008 economic crisis. The annual percentage change of commercial service export value declined by 5% in 2009, reaching 12 billion US dollars compared to 12.4 billion US dollars in the previous year (figure 3.6). In contrast, the annual percentage change of commercial service import value declined by 6% in 2009, reaching 12.057 billion US dollars compared to 12.840 billion US dollars in the previous year (World trade Organization 2009; World Trade Organization, 2010).

Contrary to the impact of the 2008 economic crisis, Covid-19 was more impactful on the commercial service trade in 2020 (figure 3.6). More specifically, the annual percentage change of commercial service export value declined by 29% in 2020, reaching 13 billion US dollars compared to 19 billion US dollars in 2019, while the percentage of shares decreased to 0.3%, compared to the previous year. Meanwhile, the annual percentage change of commercial service import value declined by almost 28% in 2020, reaching 6.13 billion US dollars compared to 8.63 billion US dollars in 2019 (World Trade Organization, 2020; World Trade Organization, 2021a).

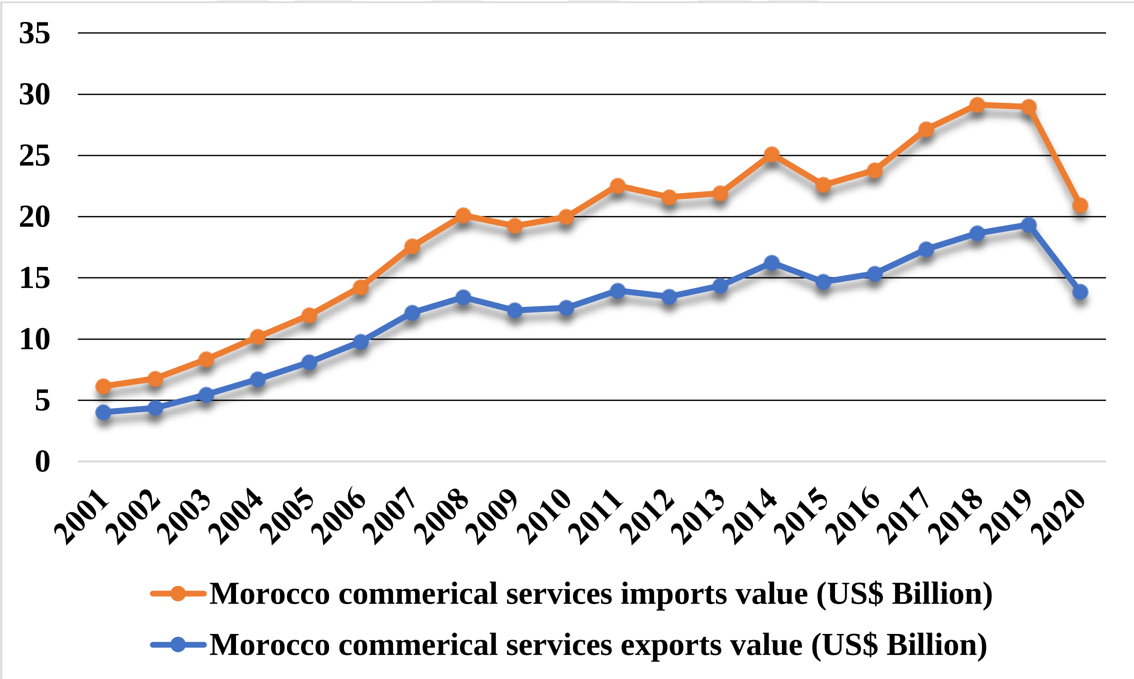

Figure 3.6: Morocco Commercial Service Exports and Import 2001-2020 (US$ Billion)

Source: ITC database (Author's calculation)

3.3.3 Morocco International Trade: Vegetable Products

The agricultural sector is one of the major pillars of Moroccan economy, with a contribution to GDP varying from 14% to 20% in recent years. In addition, the sector provides employment to both the national labor force and the rural labor force with 40% and 80% respectively. Moreover, it also plays a significant role in food self-sufficiency, reaching more than 100% for vegetables and fruits, 87% for milk, 98% for meat, 25% for edible oils, and 52% for sugar (Azzouzi, Laytimi and Abidar, 2007).

During the last decades, Morocco's agricultural sector has experienced a significant growth due to the Green Morocco Plan execution in 2008. Thus, the plan (GM - Plan Maroc Vert) aimed to reduce poverty and enhance income by supporting small and medium farmers. Meanwhile, it sought to develop the agricultural sector and increase its competitiveness through export agreements and private investments (Akesbi, 2011).

After a renegotiation of the first trade agreement between Morocco and the EU by the end of the 20th century, the country has benefited from preferential trade conditions and strengthened its trade position, especially in vegetable products. Therefore, the kingdom of Morocco strived to increase the sector productivity by extending the fruit and vegetable land area in order to enhance its competitiveness in the international market (Pappalardo .et al, 2012).

3.3.3.1 Vegetable products - export

Over the years, Moroccan vegetable products' export value has experienced a significant growth, reaching 3,165 million US dollars export value by the end of 2020. In addition, the subsectors Edible fruit and nuts; peel of citrus fruit or melons and Edible vegetables and certain roots and tubers represent more than 50% of the vegetable products total export in the previous years, reaching 1,516 million US dollars and 1,317 million US dollars respectively in 2020 (figure 3.7). Moreover, the sector witnessed a continuous increase except in 2009 when the export value declined by almost 9% compared to the previous year, reaching 1,271 million US dollars due to the 2008 economic crisis. In contrast, the Covid-19 period was less impactful on the vegetable products export compared to the 2008 crisis, while the export value has increased by only 2% compared to the previous year, reaching 3,165 million US dollars.

Figure 3.7: Morocco Vegetable Products Export 2000-2020 (US $ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.3.3.2 Vegetable products - import

Since the beginning of the 21st century, the vegetable products import incurred a significant increase, reaching 3,585 million US dollars in 2020. Besides this, cereals occupied more than a third of total vegetable products imported throughout the years, reaching 2,281 million US dollars in 2020. Like many countries, the 2008 economic crisis has declined Morocco vegetable products import by almost 40% compared to the last year, reaching 1,827 million US dollars at the end of 2009. In contrast, the Covid-19 period has increased the demand for vegetable products in Morocco by 30% compared to the previous year, reaching 3,585 million US dollars in 2020 (figure 3.9).

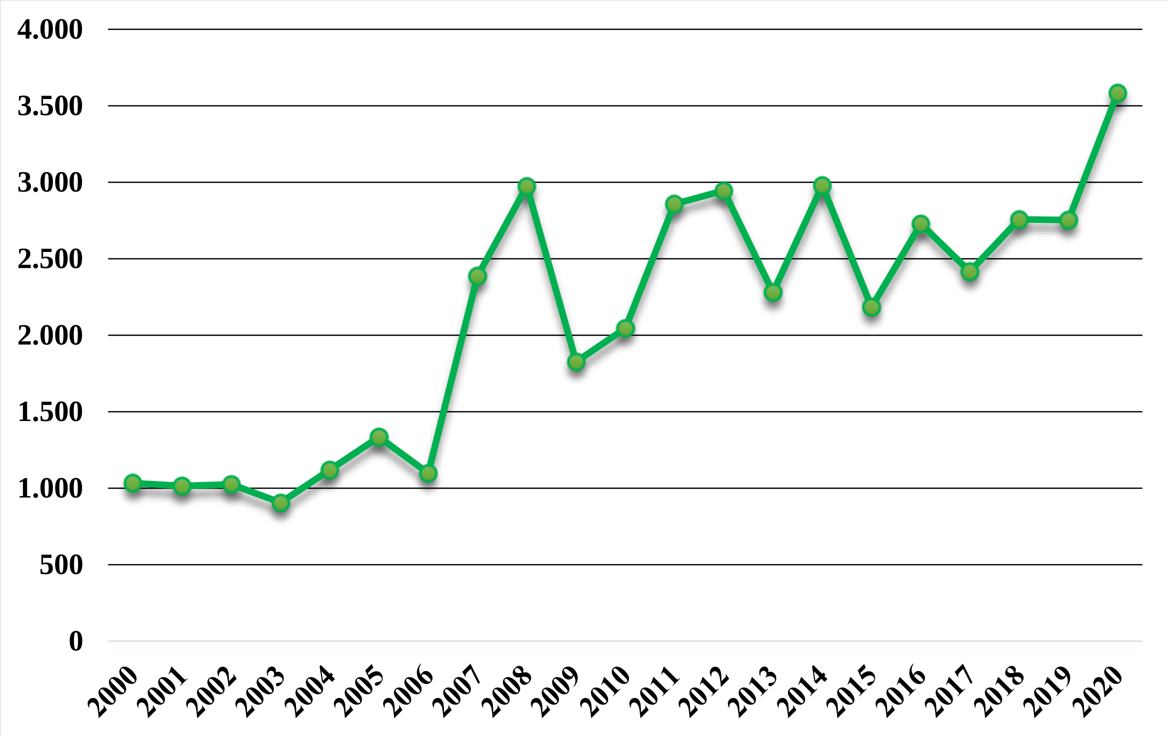

Figure 3.8: Morocco Vegetable Products Import 2000-2020 (US $ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.3.4 Morocco International Trade: Textiles And Textile Articles

The textiles and textile articles sector is one of the most promotional and dynamic Moroccan sectors. However, it encloses 1,650 companies, employs 203,000 and has a turnover of 4.016 billion US dollars. This industry occupies an important part in foreign trade since it represents more than a third of exports from processing industries and 13.7% of the industrial production (Riad, 2000).

By dint of the free trade agreements with the United States in 2006 and 2000 other agreements with the European Union in 2008, Morocco has become an indispensable supplier in the textiles and textile articles sector for the international market. Furthermore, the historical ties and geographical position allowed the country to strengthen and increase textile export value, especially towards Spain and France (Rossi, 2011).

3.3.4.1 Textiles and textile articles - export

The textile and textile sector has witnessed a wobbling increase throughout the twenty-first century in Morocco, reaching 3,018 million US dollars by the end of 2020 (Figure 3.9). Furthermore, the subsector articles of apparel and clothing accessories, not knitted or crocheted occupied almost two-thirds of the total export, reaching 1,911 million US dollars in 2020, followed by "articles of apparel and clothing accessories, knitted or crocheted" that occupied almost 20% of total export value throughout the previous years, reaching 612 million US dollars of a total value of 3,018 in 2020. Like many sectors, the textiles and textile articles sector has decreased by 18%, reaching 3,018 million US dollars in 2020 due to the Covid-19 pandemic. In contrast, the 2008 economic crisis was less impactful as the export value has declined by 10% compared to the previous year, reaching 3,375 million US dollars in 2009 (figure 3.9).

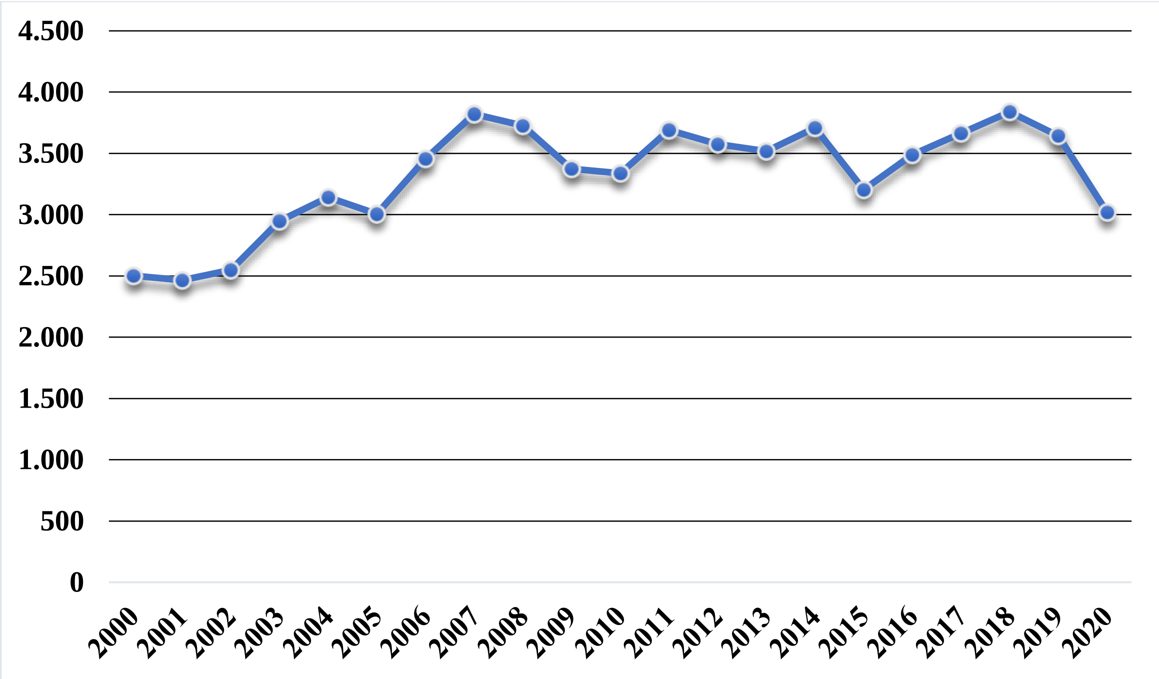

Figure 3.9: Morocco Textile and Textile Articles Export 2000-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author’s calculation)

3.3.4.2 Textiles and textile articles – import

Throughout the last decades, the sector has known an increase in import value despite the fall of some periods, reaching 3,146 million US dollars by the end of 2020 (figure 3.10). However, the subsectors cotton and man-made staple fibers" represent almost 30% of the total import value, reaching 400 million US dollars and 630 million US dollars, respectively in 2020. Due to the 2008 economic crisis, the import has incurred a decrease of 16% compared to the previous year, reaching 2,440 million US dollars in 2009. Moreover, the import value has endured the same percentage decline as the economic crisis period due to the Covid-19, decreasing by 16% compared to the previous year and reaching 3,146 million US dollars in 2020 (figure 3.10).

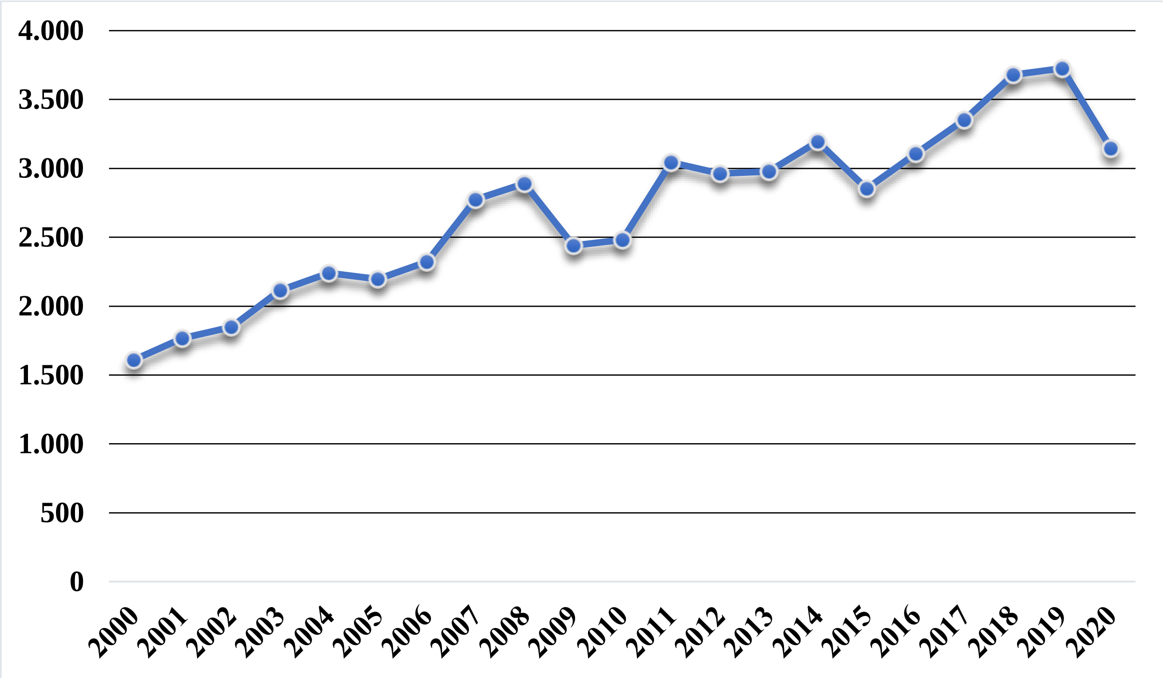

Figure 3.10: Morocco Textile and Textile Articles Import 2000-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.3.5 Moroccan International Trade: Products Of The Chemical Or Allied Industries

The chemical products or allied industries sector has a crucial role in the Moroccan economy, owing to the diversity of the products and the organic link with other economic activities upstream or downstream. Moreover, the sector monopolizes 30% of industrial investments and provides almost 950 companies that employ 58,000 people and generate a turnover of 6,35 million US dollars (Jaouhari, 2019). The sector benefits from the significant presence of the Office Chérifien des Phosphates (OCP), which is a phosphate chemistry leader, employing 4.6% of the industry and occupying 12.5% of the industrial sector company (Bennour, 2021).

3.3.5.1 Products of the chemical or allied industries – export

The products of chemical or allied industries sector has experienced a significant increase in the last decades, reaching US$ 4,880 million by the end of 2020. Moreover, fertilizers are the most exported product in the sector, occupying almost 70% of the sector's total export and reaching US$ 3,385 million in 2020 (figure 3.11). Due to the 2008 economic crisis, the sector export value has severely fallen by 40% compared to the previous year, reaching US$ 1,912 million in 2009. Contrary to different sectors, exports have increased by 4% compared to the previous year despite the Covid-19 pandemic effect, reaching US$ 4,880 million in 2020 (figure 3.11).

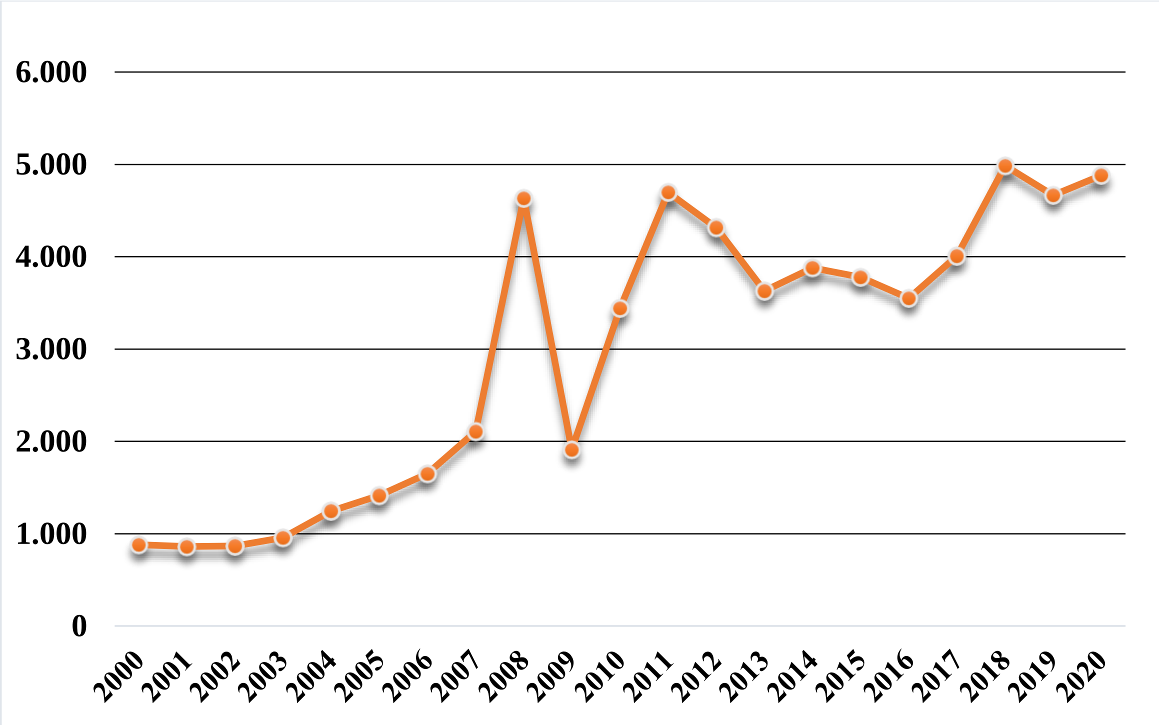

Figure 3.11: Morocco Products of The Chemical or Allied Industries Export 2000-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.3.5.2 Products of the chemical or allied industries – import

Throughout the 21st century, the sector importation value has slightly increased, reaching US$ 3,667 million in 2020. Additionally, the subsectors miscellaneous chemical products and inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or isotopes are the most imported products in 2020, occupying 18% and 17% of the sector's total import, respectively (figure 3.12).

Contrary to exports, the import value has slightly decreased by 10% compared to the previous year owing to the economic crisis, reaching US$ 2,265 million by the end of 2009. In contrast, the import value has known a stagnation during the Covid-19 period by reaching US$ 3,667 million in 2020 (figure 3.12).

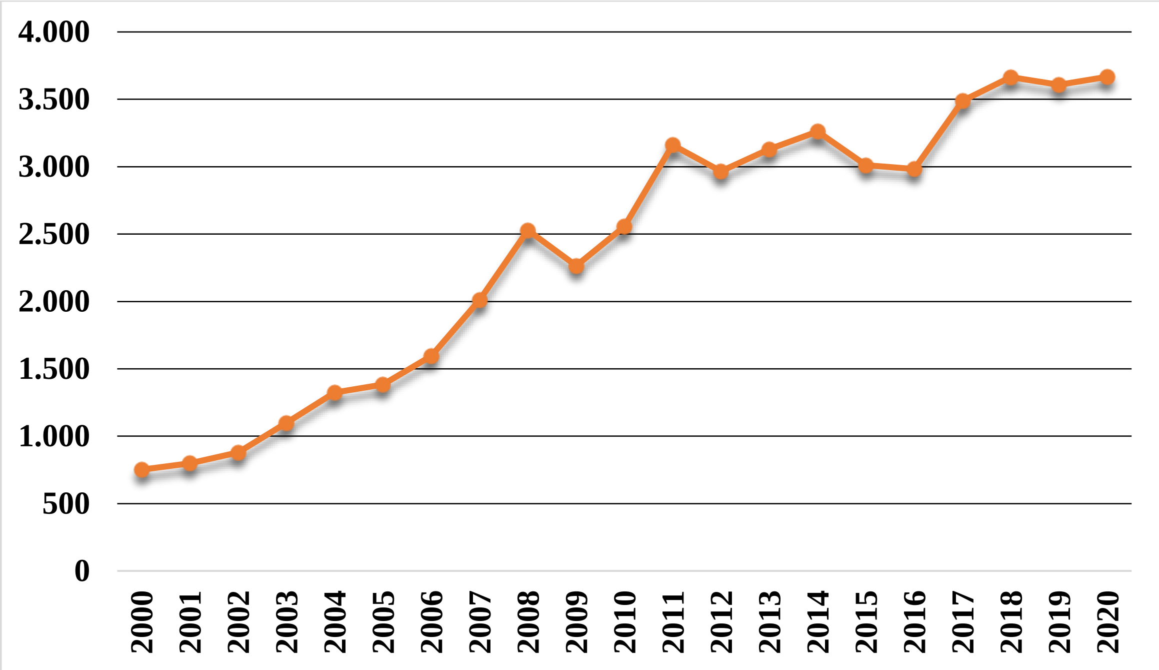

Figure 3.12: Morocco Products of The Chemical or Allied Industries Import 2000-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.4 TURKEY INTERNATIONAL TRADE

At the beginning of the 2000s, the Turkish economic structure endured tragic destruction due to the domestic financial crisis and earthquake damage in 1999 (Babacan, 2010). Through the execution of the transition to the strong economy program in 2001, the government regulated many structural reforms (tight monetary policy, floating exchange rate regime, market liberalization, etc...) to soothe the significant impact of the crisis and expedite the Turkish economy's recovery (Ozcan, 2018).

After the AK party victory in 2002, Turkey has witnessed new alignments between the trade orientation and Turkey's foreign trade. Since then, the country's position redressed to become a central point instead of acting as a bridge. At that time, Turkey endured an increase in imports and export of merchandise and services throughout the years except for the 2008 financial crisis (Ozcan, 2018). Based on Civan et al.'s (2013) statement, Turkey has extended its ties with the bordering countries and invaded the African economy despite its strengthened relationship with the EU, especially in international trade.

3.4.1 Turkish Merchandise Trade

Since the recovery from the domestic financial crisis, Turkey's international trade has experienced a significant increase in merchandise export and import value, reaching 169.651 billion US dollars and 219.515 billion US dollars in 2020, respectively. For further information, the merchandise export value of 2019 was the largest one in the country's history reaching 180.833 billion US dollars. While in its turn, the merchandise import value of 2018 was the biggest one and reached 260.823 billion US dollars (World Trade Organization, 2014; World Trade Organization, 2021a).

Following the constant increase in the value of merchandise exports and imports, Turkey has experienced a sharp decline due to the 2008 economic crisis. More specifically, the annual percentage change of merchandise export value declined by 23% in 2009, reaching 102 billion US dollars compared to 132 billion US dollars in the previous year (figure 3.13). In contrast, the annual percentage change of merchandise import value declined by 30% in 2009, reaching 141 billion US dollars compared to 202 billion US dollars in the previous year (World trade Organization 2009; World Trade Organization, 2010).

Contrary to the impact of the 2008 economic crisis, Covid-19 was less impactful on Turkey’s merchandise trade during 2020. More specifically, the annual percentage change of merchandise export value declined by only 6% in 2020, reaching 169 billion US dollars compared to 181 billion US dollars in 2019, while the percentage of shares decreased to 1%, compared to the previous year (figure 3.13). Meanwhile, the annual percentage change of merchandise import value increased by almost 4% in 2020, reaching 219 billion US dollars compared to 210 billion US dollars in 2019 (World trade Organization 2009; World Trade Organization, 2010).

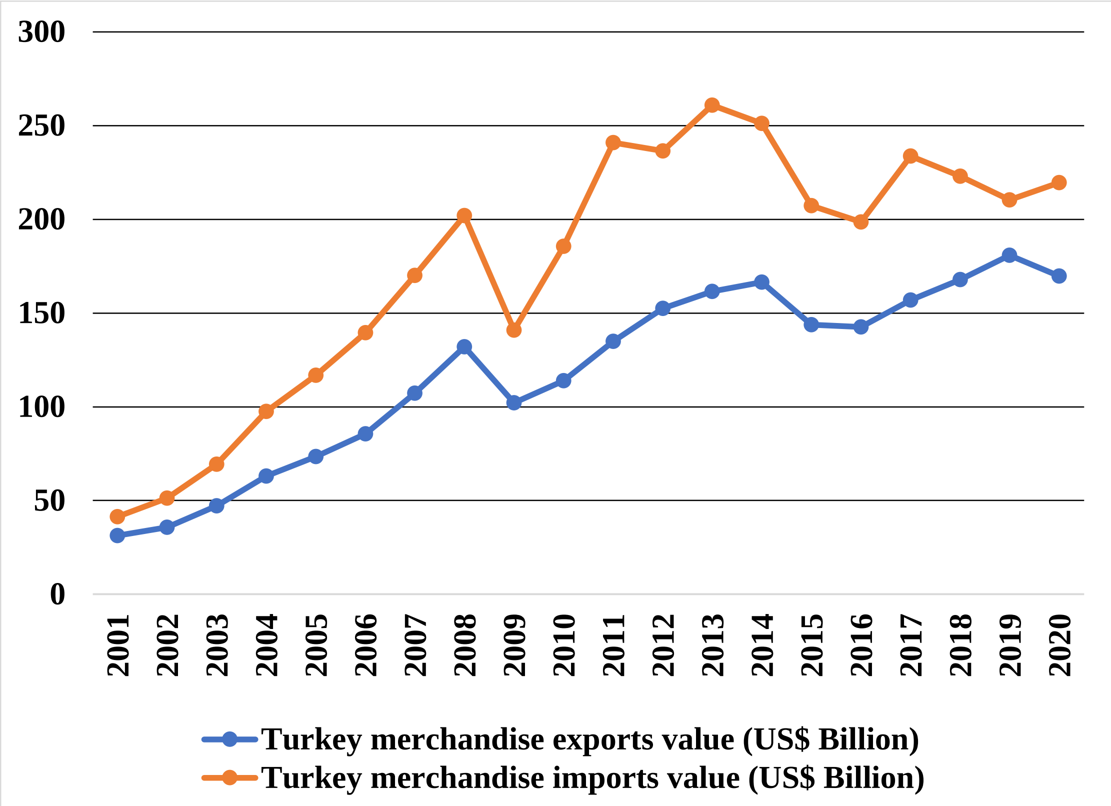

Figure 3.13: Turkey Merchandise Export and Import 2001-2020 (US$ Billion)

Source: ITC and UN COMTRADE database (Author's calculation)

3.4.2 Turkish Commercial Services Trade

Since its recovery from the domestic financial crisis in 2002, Turkey's commercial service trade has witnessed a significant increase in export and import value, reaching 35 billion US dollars and 22 billion US dollars in 2020, respectively (figure 15). The country's highest value of commercial services exports amounted to 61 billion US dollars in 2019 (figure 3.14). In contrast, the highest import value of commercial service was in 2019, reaching 27 billion US dollars (World Trade Organization, 2021a).

Compared with many other countries, Turkey's trade service was less affected by the 2008 economic crisis. More specifically, the annual percentage change of commercial service export value declined by 5% in 2009, reaching 33 billion US dollars compared to 34.5 billion US dollars in the previous year (figure 3.14). In contrast, the annual percentage change of commercial service import value declined by 6% in 2009, reaching 16 billion US dollars compared to 16.2 billion US dollars in the previous year (World trade Organization 2009; World Trade Organization, 2010).

Contrary to the merchandise trade, Turkey's commercial service incurred a significant detriment during the Covid-19 period. More specifically, the annual percentage change of commercial service export value declined tremendously by 45% in 2020, reaching 35 billion US dollars compared to 64 billion US dollars in 2019, while the percentage of shares decreased to 0.7%, compared to the previous year (figure 3.14). Meanwhile, the annual percentage change of commercial service import value declined by 8% in 2020, reaching 25 billion US dollars compared to 27 billion US dollars in 2019 (World Trade Organization, 2020; World Trade Organization, 2021a)

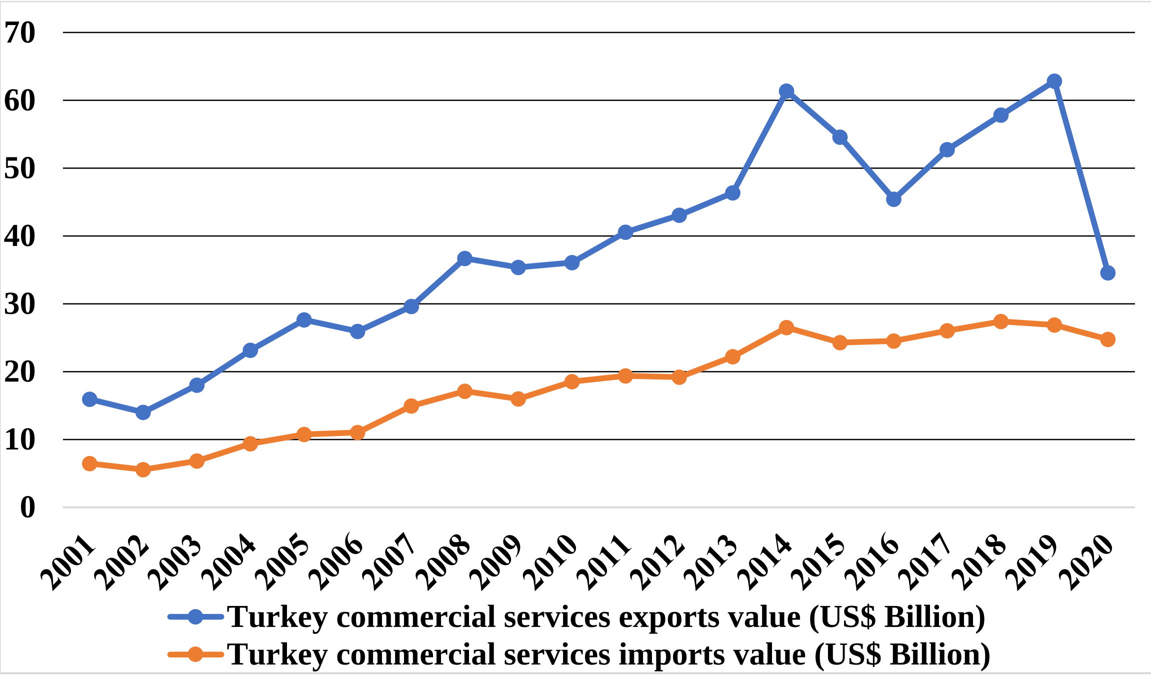

Figure 3.14: Turkish Commercial Services Export and Import 2001-2020 (US$ Billion)
Source: ITC and UN COMTRADE database (Author's calculation)

3.4.3 Turkey International Trade: Vegetable Products

Over the last decades, the agricultural sector has remained one of the indispensable contributors to the country's economy, providing the largest share of employment and production (Tuzel and Oztekin, 2014). Despite the large cultivated Turkish area, around 25.5 million Ha, the farm size is approximately about only 5.9 Ha, which placed Turkey behind the European Union and the United States, 173 and 180 Da respectively (Berk, 2013).

Due to the Customer Union agreement, the European Union has become the principal export market of Turkish agricultural products, especially fruits and vegetables

(Kabalioğlu, 1999). However, the sector has incurred significant decreases in the share of GDP throughout the years (36% in 1970, 25% in 1980, 16% in 1990, 12.6% in 2003, and 7.4% in 2013) by giving more importance to the industrial and services sectors (Aytop et al., 2014)

3.4.3.1 Vegetable products – export

Throughout the last decades, vegetable products' export value has witnessed a remarkable increase, reaching 8,595 million US dollars by the end of 2020 (figure 3.15). The edible fruit and nuts; peel of citrus fruit or melons represent the highest value with more than half of total vegetable products export value during different periods, amounting to 4,830 million US dollars in 2020.

In contrast to many sectors, the vegetable products sector has increased by 6% compared to the previous year despite the impact of the 2008 economic crisis, reaching 5,205 million US dollars in the 2009 period (figure 3.15). However, the country has incurred its worst decrease in 2015, declining by 13% compared to the last year and reaching 7,153 million US dollars. During Covid-19 period, the vegetable export value has increased slightly by 2% compared to the previous year, reaching 8,595 million US dollars contrary to other sectors that incurred tremendous decreases (figure 3.15).

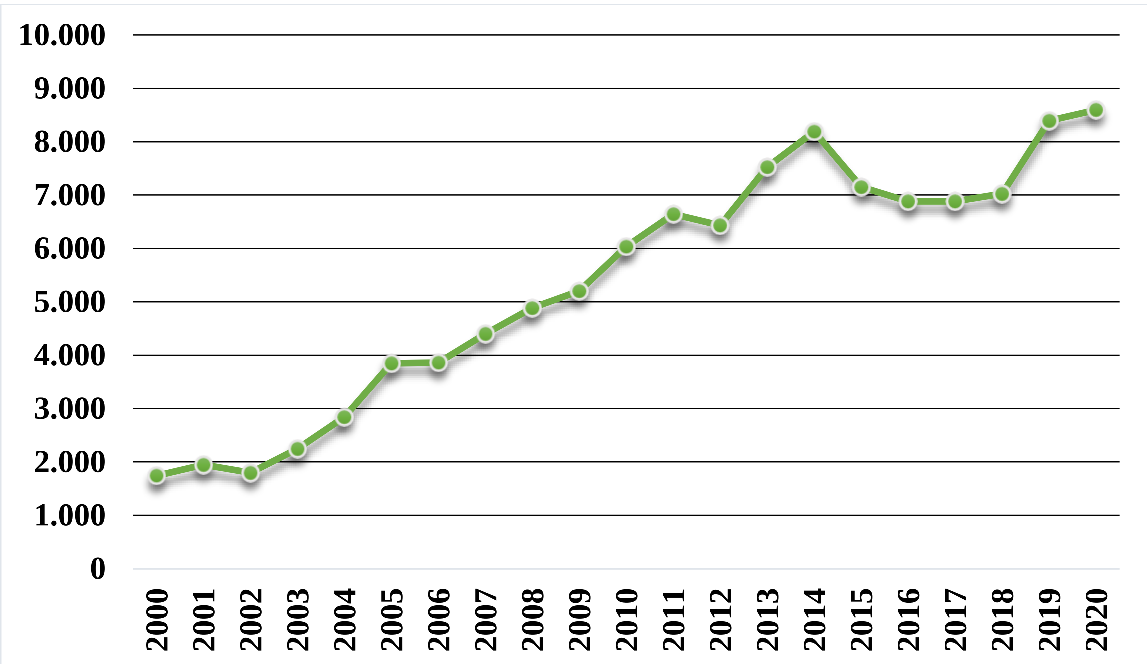

Figure 3.15: Turkey Vegetable Products Export 2000-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.4.3.2 Vegetable products - import

In contrast to the export trade, the vegetable products import value has known a wobbling increase over the last decades, reaching US$ 7,789 million in 2020. The subsectors cereals and oil seeds and oleaginous fruits; miscellaneous grains, seeds, and fruit; industrial or medicinal plants; straw and fodder represent almost 70% of the vegetable products total imports in the last years, reaching US$ 3,281 and US$ 2,383 million in 2020 respectively (figure 3.16).

Due to the 2008 economic crisis, the country's vegetable products import value has experienced a massive decrease, declining by 34% compared to the past year and reaching US$ 2,991 dollars in 2009. In contrast, the Covid-19 period was less impactful on the country's import while the vegetable products import value has slightly increased by 1% compared to the previous year, reaching US$ 7,789 million by the end of 2020 (figure 3.16)

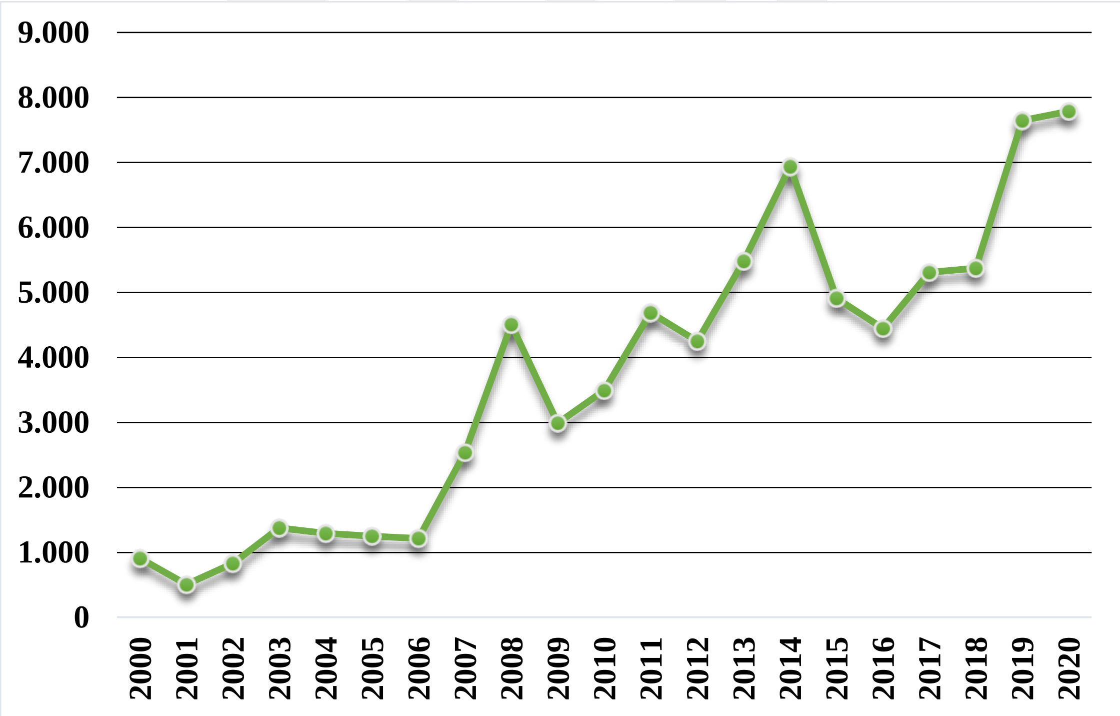

Figure 3.16: Turkey Vegetable Products Import 2000-2020 (US$ Million)
Source: ITC and UN COMTRADE database (Author's calculation)

3.4.4 Turkey International Trade: Textiles And Textile Articles

The textiles and clothing sector is one of the pillar sectors in the Turkish economy, especially in terms of employment and GDP contribution. However, the country ranked as the fourth largest exporter of textiles and clothing worldwide, reaching 27 billion US dollars in 2020. The textiles and clothing shares in world export are 3.3% and 3.6%, respectively. (World Trade Organization, 2020).

From 1980 until 2018, the Turkish textiles and clothing sector has experienced a notable evolution. However, the country has become able to compete in the international market besides top leading countries such as China, the United States, and India, due to several factors such as technology investment, qualified human resources, and flexible production capacity (Directorate General of Exports, 2021b).

3.4.4.1 Textiles and textile articles – export

From the beginning of the 21st century until today, the textiles and textile articles sector has witnessed a massive increase, reaching US$ 27,332 million by the end of 2020. The subsectors articles of apparel and clothing accessories, knitted or crocheted and articles of apparel and clothing accessories, not knitted or crocheted represent more than 50% of the total sector export value, reaching US$ 8,387 and US$ 6,600 million respectively in 2020 (figure 3.17).

However, the sector has grown continuously until the 2008 economic crisis when the export value has endured a tremendous decline of 18% compared to the previous year, reaching 19,319 in 2009. In contrast, the covid period was less impactful while the export value has slightly decreased by 5% compared to 2009, reaching US$ 27,332 million in 2020 (figure 3.17)

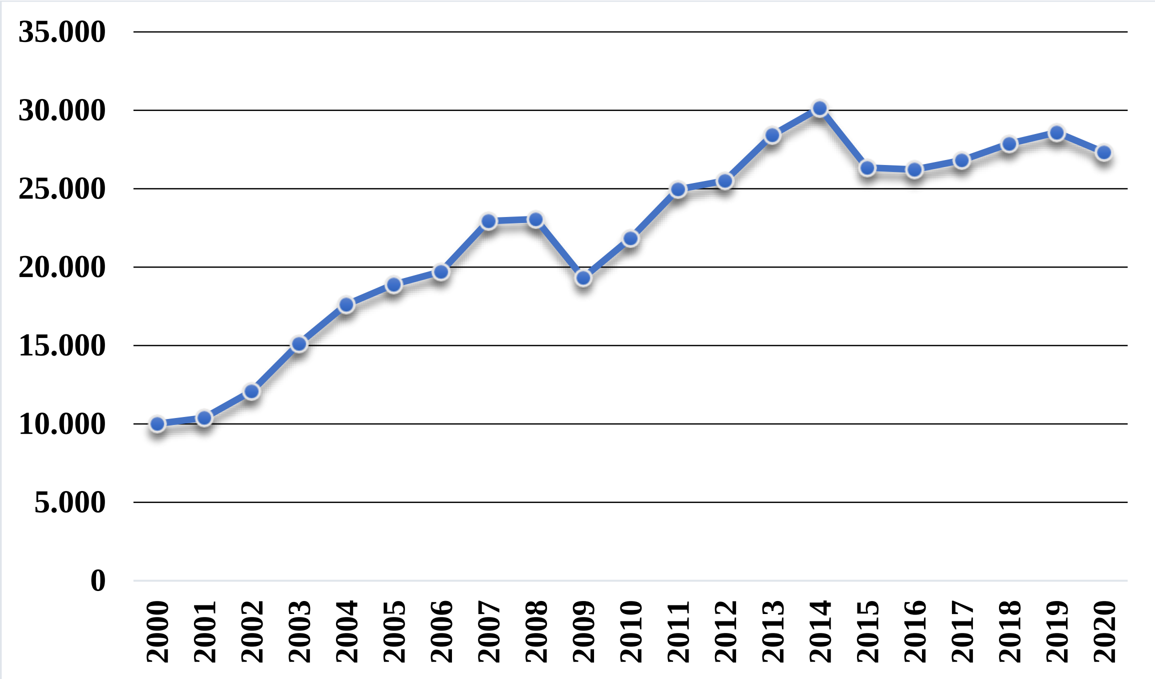

Figure 3.17: Turkey Textiles and Textile Articles Export 2000-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.4.4.2 Textile and textile articles – import

Following the export pathway, the textiles and textile articles import value has witnessed a significant increase throughout the last decades, reaching US$ 20,584 million. However, the subsectors cotton and man-made filaments; strip and the like of man-made textile materials have a significant value in the total imports throughout the years, reaching 2,543 and 1,801 US$ million respectively in 2020 (figure 3.18).

Like many other sectors, textiles and textile articles sector has incurred a decrease of 8% compared to the previous year due to the 2008 economic crisis, reaching US$ 14,294 million in 2009. Meanwhile, the Covid-19 epidemic was less impactful on the sector import value, reaching US$ 20,584 million in 2020 with an annual change of only 2% (figure 3.18).

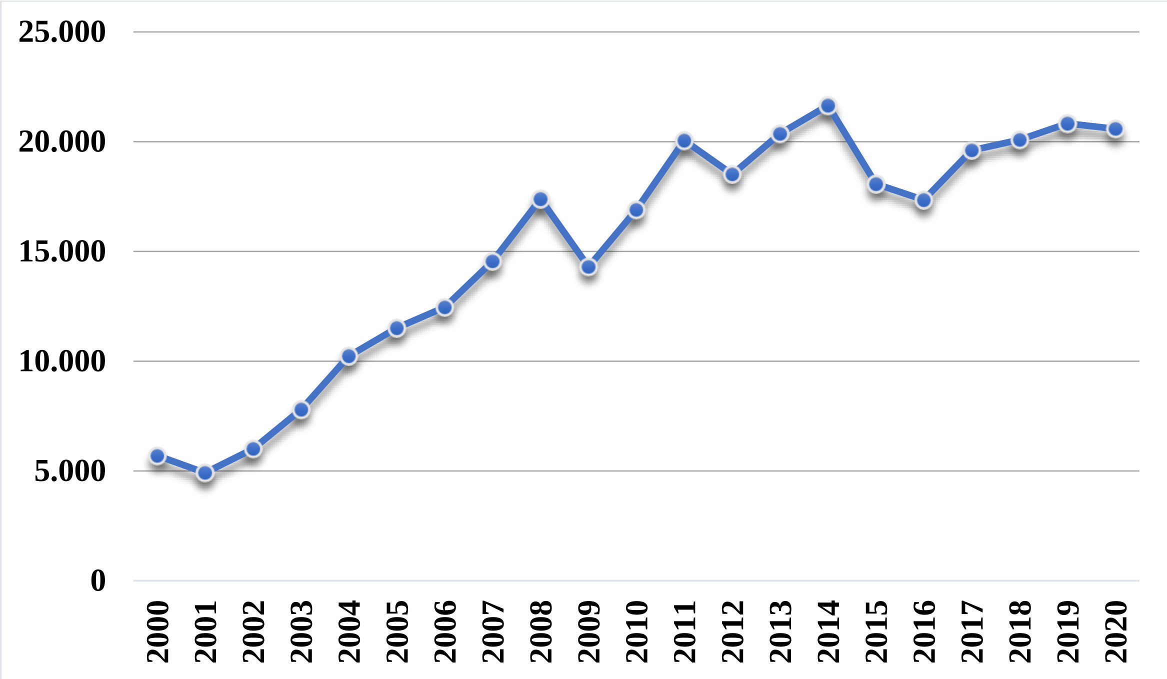

Figure 3.18: Turkey Textiles and Textile Articles Import 2000 - 2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.4.5 Turkey International Trade: Products Of The Chemical Or Allied Industries

During 1980, the Turkish chemical industry has witnessed significant growth owing to the execution of the new economic policy. Moreover, the chemical industry has almost 6200 companies and employs 200.000 people. Most of these companies are private and located in Ankara, Istanbul, Adana, Izmir, Sakarya, Kocaeli, Adana, Gaziantep (Directorate General of Exports, 2021a). In addition, Turkey's chemical production includes different products such as fertilizers, pharmaceuticals, paints, inorganic and organic chemicals, cosmetics and personal care, essential oil. The country is also known for its tremendous reserves of soda ash, trona, chrome, and boron (Directorate General of Exports, 2021a).

3.4.5.1 Products of the chemical or allied industries – export

Over the last decades, the exportation value of the products of the chemical or allied industries sector has witnessed an unprecedented increase, moving from US$ 954 million in 2000 to US$ 8,867 million by the end of 2020. For further information, pharmaceutical products ranked in the first place as the most exported products, reaching US$ 1,826 million in 2020, followed by other sub-sectors that occupied a large amount of total export value (figure 3.19).

Like the majority of sectors, the export amount has declined by 12% due to the economic crisis, reaching US$ 3,385 million in 2009. While in the Covid-19 period, the export value has increased contrary to other sectors by 10% compared to the previous year, reaching US$ 8,867 million in 2020 (figure 3.19).

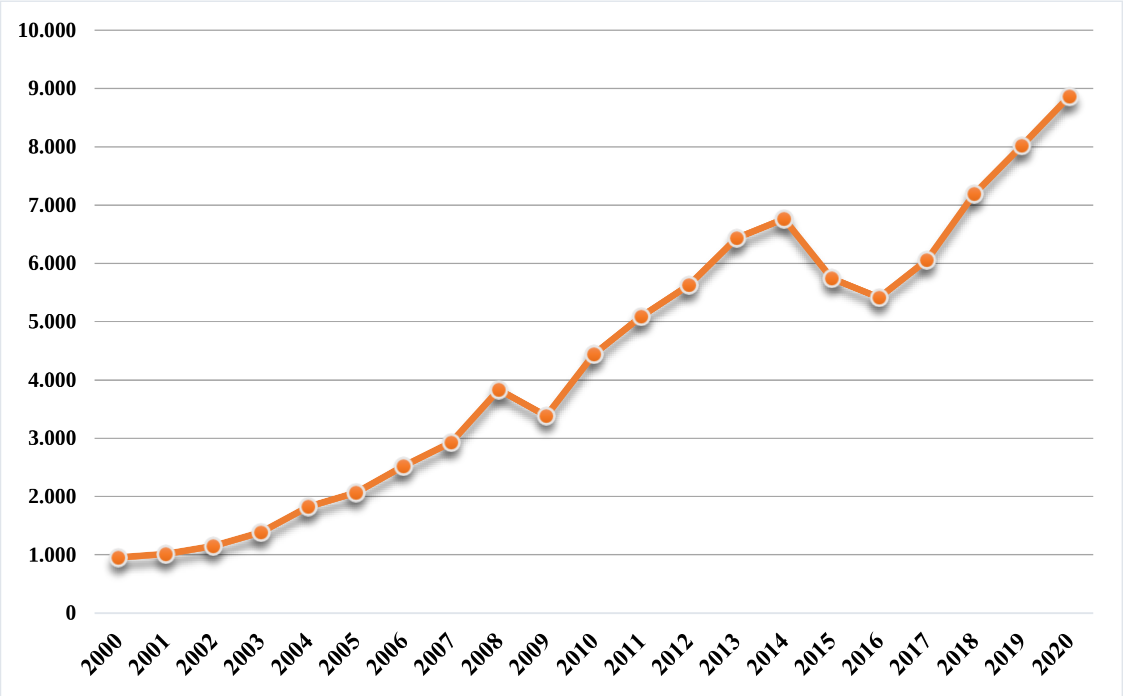

Figure 3.19: Turkey Products of The Chemical or Allied Industries Export 2000-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.4.5.2 Products of the chemical or allied industries – import

Following the export pathway, the import amount has experienced a significant increase over the last years, attaining US$ 20,584 million by the end of 2020. Moreover, the organic-chemicals sub-sector has occupied almost 29% of the total imported products, reaching US$ 5,888 million in 2020 (Figure 3.20). The value of imports has also incurred a decrease of 18% compared to the previous year owing to the 2008 economic crisis, reaching US$ 14,294 million in 2009. Whereas, the Covid-19 was less impactful as the import amount approximately remained the same compared to the previous year, reaching US$ 20,584 million in 2020 (figure 3.20).

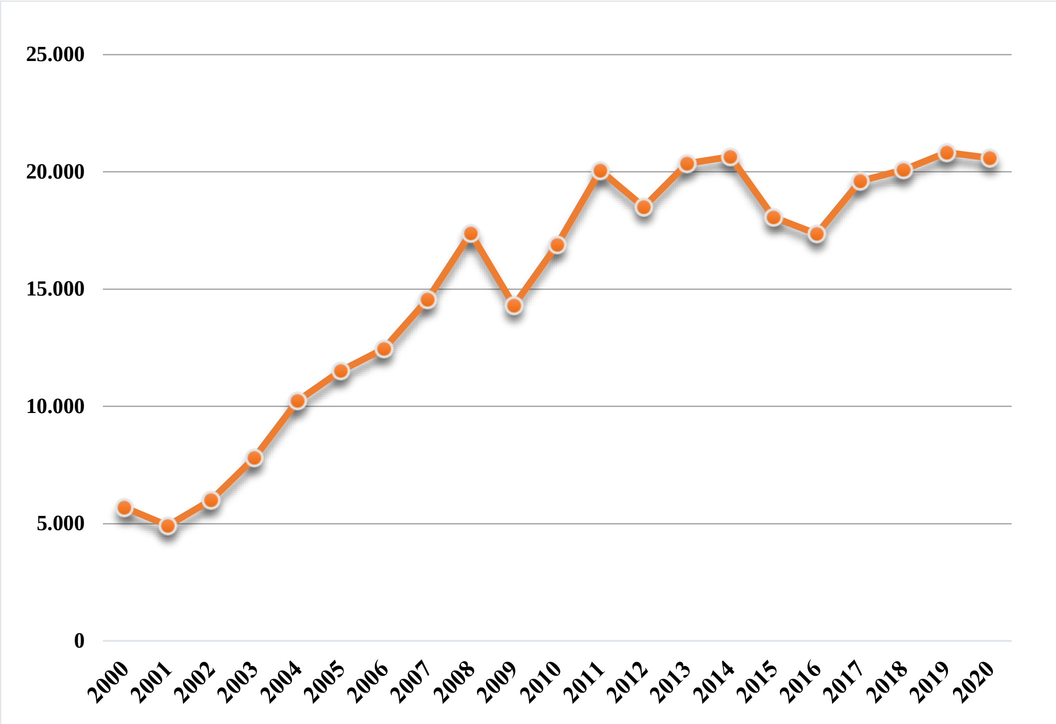

Figure 3.20: Turkey Products of The Chemical or Allied Industries Import 2000-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.5 TURKISH AND MOROCCAN INTERNATIONAL TRADE: COMPARATIVE ANALYSIS

Through this section, Turkish and Moroccan trade data are presented in the same graphs in order to provide a comparative analysis view of the countries' trade at different levels. Accordingly, the comparative analysis includes the merchandise/commercial services, the vegetable products sector, the textiles and textile articles sector, and products of the chemicals or allied industries sector. Thus, the exports and imports data of both countries regarding the determined sectors are separately provided in order to allow a pertinent comparative analysis and clear up the countries trade level.

3.5.1 Merchandise Trade: Comparative Analysis

In this subsection, the merchandise export and import of both countries are provided simultaneously in order to have a clear vision and a comparative view regarding the trade evolution throughout the last twenty years.

3.5.1.1 Morocco and Turkey merchandise export analysis

Since the turn of the 21st century, Turkey and Morocco have witnessed a significant increase in the merchandise trade, reaching 169 billion US dollars and 27 billion US dollars in 2020, respectively. In 2008, both countries have incurred a notable decrease in merchandise exports due to the economic crisis. Thus, The Turkish merchandise export has declined by 23% reaching 102 billion US dollars compared to 132 billion US dollars in the previous year, while the Moroccan merchandise export has fallen by 32%, reaching 14 billion US dollars compared to 20 billion US dollars in the last year.

After recovering from the economic crisis of 2008, Turkey experienced a further decline in merchandise exports by 14% in 2015, owing to various causes such as the fall in the value of the euro against the dollar and the decline in the price of oil and other different commodities. In contrast, the Moroccan merchandise export was less impactful compared to Turkey, declining by only 7% in 2015 compared to the previous year.In 2020, another economic crisis hit the economy of both countries and affected the merchandise export. Accordingly, the Turkish merchandise export has declined by 7% in 2020, reaching 169 billion US dollars. Likewise, the Moroccan merchandise export value has decreased by 7%, reaching 27 billion US dollars. Thus, both Turkey and Morocco stood less impacted by the Covid-crisis compared to the economic crisis of 2008.

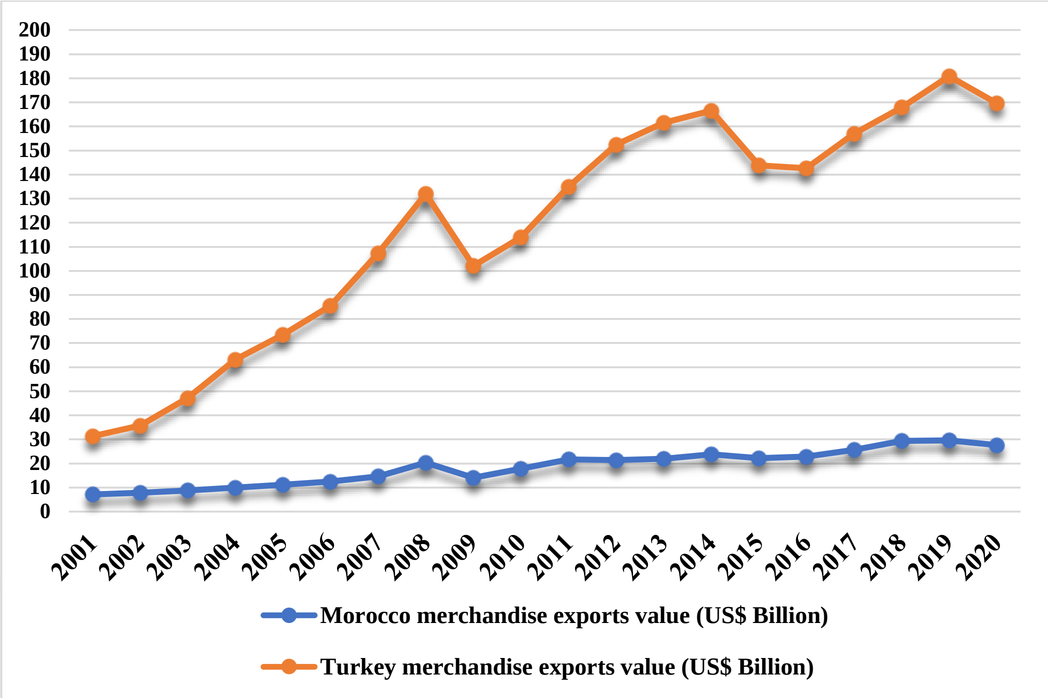

Figure 3.21: Turkey and Morocco Merchandise Export 2001-2020 (US$ Billion)
Source: ITC and UN COMTRADE database (Author's calculation)

3.5.1.2 Morocco and Turkey merchandise import analysis

Following the export pathway, Turkish and Moroccan merchandise imports have known a notable increase throughout the last decades, reaching 219 billion US dollars and 44 billion US dollars, respectively by the end of 2020. Similar to the exports, Turkish merchandise imports have incurred a significant decrease due to the economic crisis of 2008, declining by 30% and reaching 141 billion US dollars compared to 202 billion US dollars in the previous year. In its turn, the Moroccan merchandise imports value has declined by 22% in 2009, reaching 33 billion US dollars compared to 42 billion US dollars in the previous year.

In addition, both countries have constantly increased their imports before incurring another decrease in 2015 due to miscellaneous causes such as the fall in the value of the euro against the dollar and the decline in the price of oil and other different commodities. Therefore, Turkish merchandise imports have declined by 17% compared to the previous year, while the Moroccan declined by 20% by the end of 2015.

Due to the Covid pandemic, Moroccan merchandise imports have further decreased by 14% after recovering from the previous crisis, reaching 44 billion US dollars in 2020 meanwhile the Turkish merchandise imports, contrary to its merchandise exports, have weakly increased by 4%, reaching 219 billion US dollars by the end of 2020.

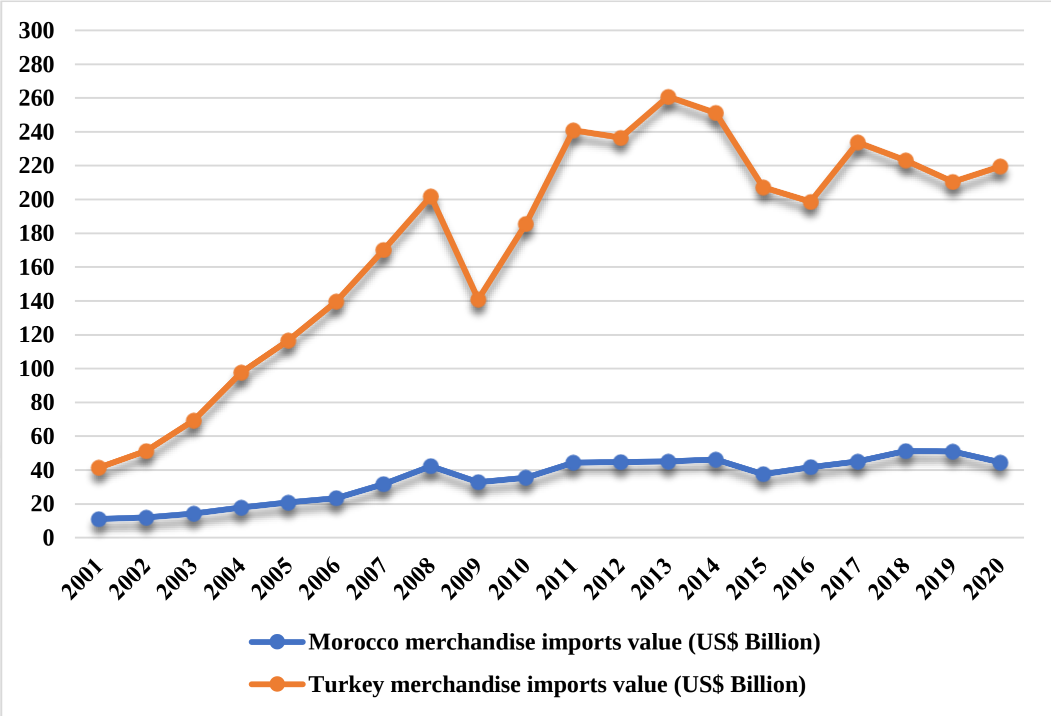

Figure 3.22: Turkey and Morocco Merchandise Import 2001-2020 (US$ Billion)

Source: ITC and UN COMTRADE database (Author's calculation)

3.5.2 Commercial Services: Comparative Analysis

In this subsection, the trade data of Moroccan and Turkish commercial services are provided simultaneously in order to give a comparative analysis view regarding the exports and imports of both countries throughout the determined period.

3.5.2.1 Moroccan and Turkish commercial services export

Over the last decades, Turkish and Moroccan commercial services exports have experienced a remarkable increase as their highest value have reached 62 billion US dollars and 19 billion US dollars in 2019, respectively. Contrary to the merchandise exports, Turkish and Moroccan commercial services exports were less impacted by the 2008 economic crisis, declining by only 3% and 8% compared to the previous year, respectively.

In 2015, the exports value decrease is clearly seen, especially for the Turkish commercial services as the percentage annual change declined by 26% in 2015 owing to miscellaneous causes such as the fall in the value of the euro against the dollar and the decline in the price of oil and other different commodities, reaching 45 billion US dollars. In contrast, Moroccan commercial services exports were less affected, declining by 9% compared to the previous year and reaching 14 billion US dollars in 2015.

After recovering and taking an upward in export value, both countries exports have experienced further falls due to the Covid pandemic in 2020. Consequently, Turkish commercial services exports have declined by 45%, considered the most ominous decline in the entire period, reaching 34 billion US dollars by the end of 2020. Likewise, Moroccan commercial services exports have fallen by 28% compared to the preceding year, reaching 13 billion US dollars.

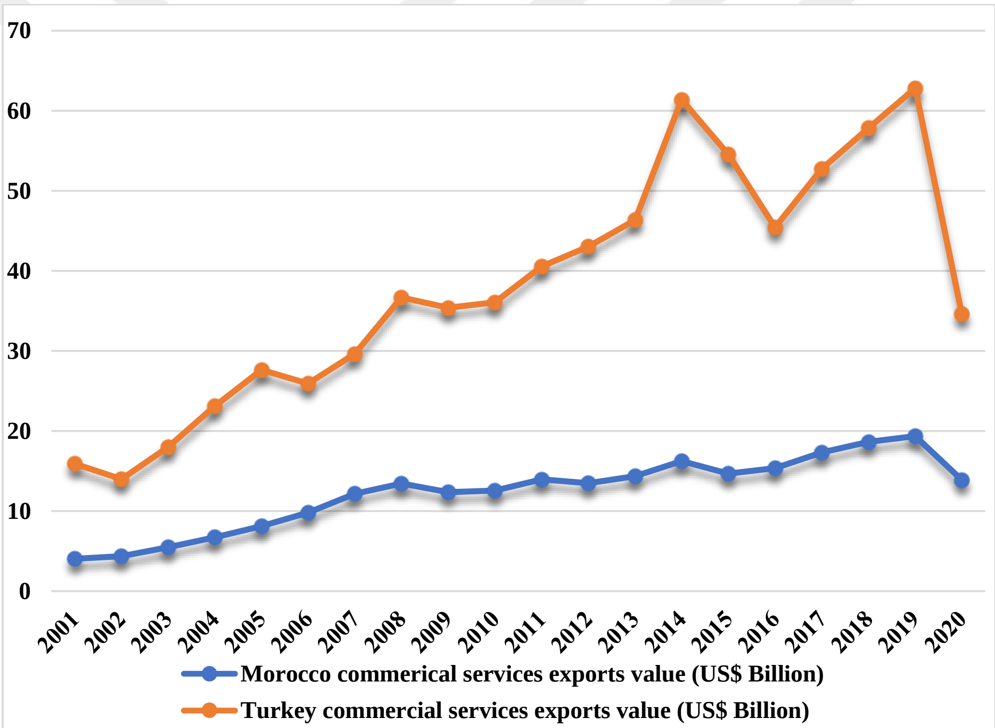

Figure 3.23: Turkey and Morocco Commercial Services Export 2001-2020 (US$ Billion)

Source: ITC and UN COMTRADE database (Author's calculation)

3.5.2.2 Moroccan and Turkish commercial services import

Since the beginning of the 21st century, Turkish and Moroccan commercial services imports have constantly increased, reaching \$24 billion and \$7 billion by the end of 2020, respectively. In 2008, Turkish commercial services imports have declined by 6% compared to the preceding year, reaching \$16 billion in 2009 owing to the economic crisis. In contrast, Moroccan commercial services imports have known a stagnation during the economic crisis period, maintaining $6 billion in 2009.

In addition, Turkish and Moroccan commercial services imports were not exempted from the negative impact of the year 2015. Accordingly, Turkish annual percentage change has declined by 8% compared to the previous year, reaching $24 billion, while the Moroccan percentage change has decreased by 10%, falling to $7 billion in 2009.

During the pandemic period, the imports value has experienced a further decline for both countries. Additionally, Turkish commercial services import value has significantly decreased by 7% compared to 2019, reaching $24 billion in the year 2020. In its turn, Moroccan commercial services imports have fallen by 27% compared to the previous year, reaching $7 billion in the year 2020.

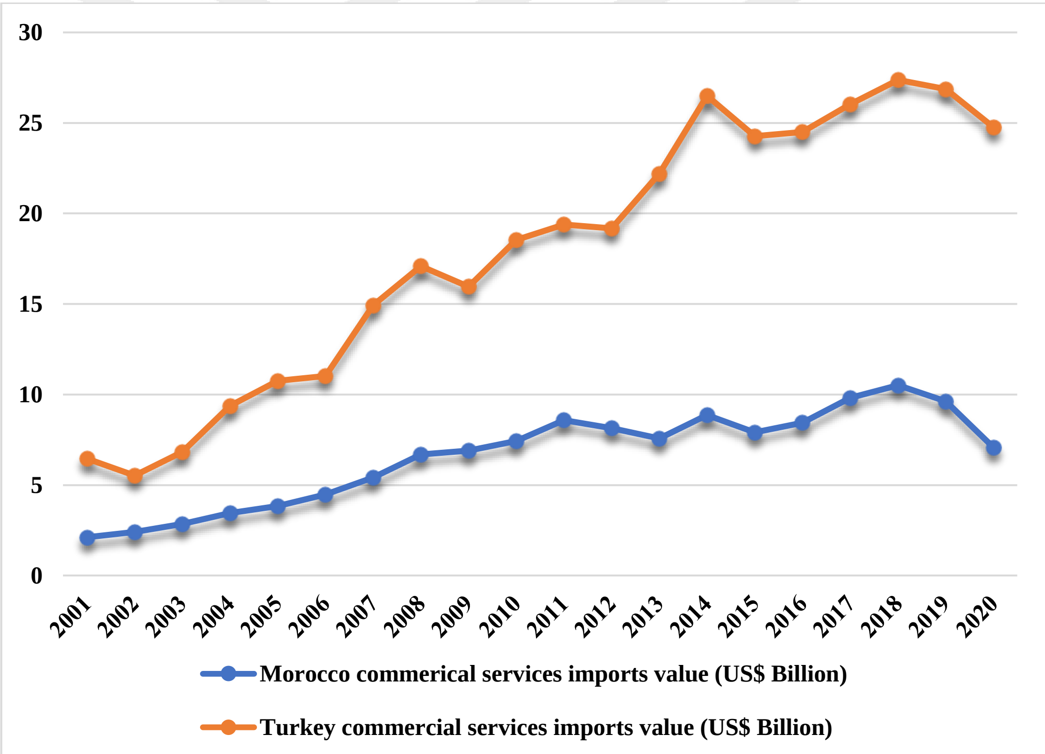

Figure 3.24: Turkey and Morocco Commercial Services Import 2001-2020 (US$ Billion)

Source: ITC and UN COMTRADE database (Author's calculation)

3.5.3 Vegetable Products: Comparative Analysis

Through this part, the trade data of Moroccan and Turkish vegetable products are provided simultaneously in order to give a comparative analysis vision regarding the exports and imports of both countries throughout the determined period.

3.5.3.1 Moroccan and Turkish vegetable products exports

Through the tweeny last years, the vegetable products exports have witnessed a significant increase in Turkey and Morocco, reaching $8 billion and $3 billion in 2020, respectively. In addition, Moroccan vegetable products exports has known a stable increase throughout the entire period while the Turkish vegetable products exports has experienced a remarkable decline of 12% in 2015 due to miscellaneous causes such as the fall in the value of the euro against the dollar and the decline in the price of oil and other different commodities, reaching $7 billion before taking an upward in the following years. However, the sector in both countries has shown resilience during the pandemic period in 2020 as maintained the exports increased by reaching $8 billion and $3 for Turkey and Morocco, respectively.

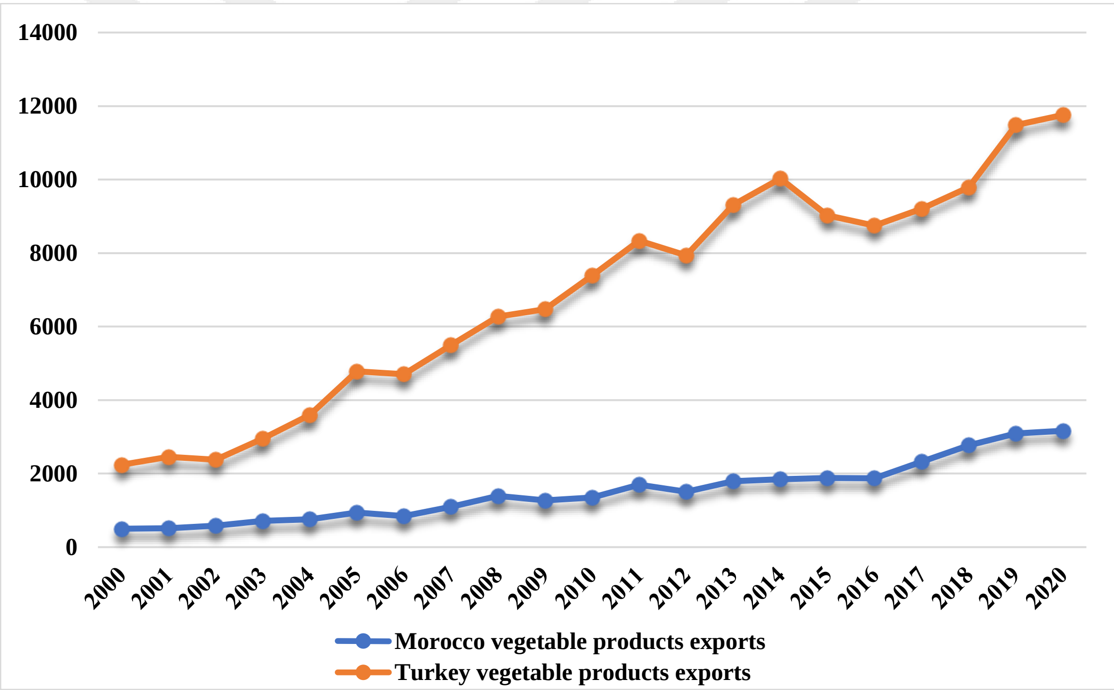

Figure 3.25: Turkey and Morocco Vegetable Products Export 2001-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.5.3.2 Moroccan and Turkish vegetable products import

Contraty to the exports, Turkish and Moroccan vegetable products imports have experienced a wobbling increase, reaching $7 billion and $3 billion by the end of 2020, respectively. During the first years of the determined period, Turkish and Moroccan vegetable products imports were very close until 2007, reaching $2 billion for both countries. In the following years, both countries has shown an unstable increased owing to different circumstance such as the 2008 economic crisis and the fall in the value of the euro against the dollar and the decline in the price of oil and other different commodities in the year 2015, which negatively impacted the imports of both countries. However, Turkish and Moroccan vegetable products imports have taken a further upward in the last three years despite the covid impact on the world trade.

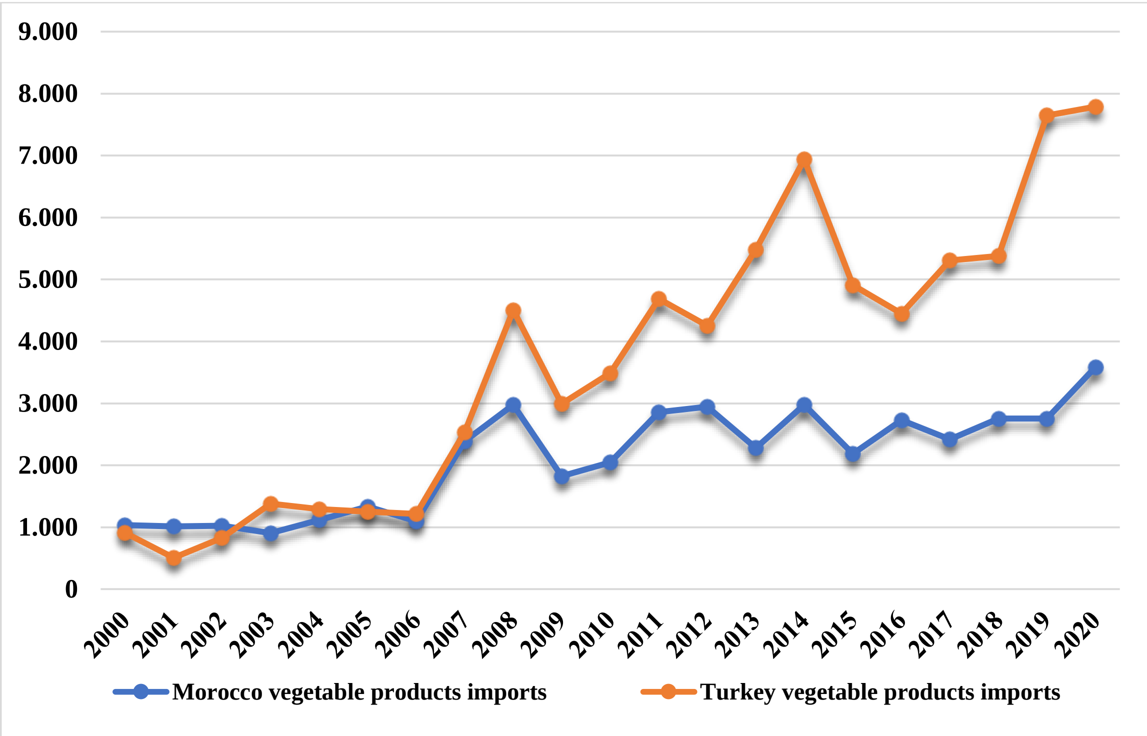

Figure 3.26: Turkey and Morocco Vegetable Products Import 2001-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.5.4 Textiles And Textile Articles Level

In this subsection, the trade data of Moroccan and Turkish textiles and textile articles are provided simultaneously in order to give a comparative analysis view regarding the exports and imports of both countries throughout the determined period.

3.5.4.1 Moroccan and Turkish textiles and textile articles export

Over the last two decades, the Turkish textiles and textile articles exports have glimpsed a significant increase, reaching $27 billion in the year 2020, while the Moroccan textiles and textile articles exports have shown a stagnation throughout the entire period, reaching $3 billion in the year 2020. Like most sectors, the Turkish textiles and textile articles exports have incurred a decrease of 16% in 2009 due to the world economic crisis, reaching $19 billion. In contrast, the Moroccan textiles and textiles articles exports have declined by 10% compared to the previous year, reaching $3.3 billion in 2009.

In addition, the fall in the value of the euro against the dollar and the decline in the price of oil and other different commodities have negatively impacted the textiles and textile articles exports of both countries in the year 2015. Accordingly, the Turkish and Moroccan textiles and textile articles exports have both declined by 13% in 2015, reaching $26 billion and $3.2 billion, respectively.

After incurring two declines, both countries have recovered before taking another downward in 2020 due to the Covid pandemic. More specifically, the Turkish and Moroccan textiles and textile articles exports have declined by 5% and 16%, reaching $27 billion and $3 billion, respectively.

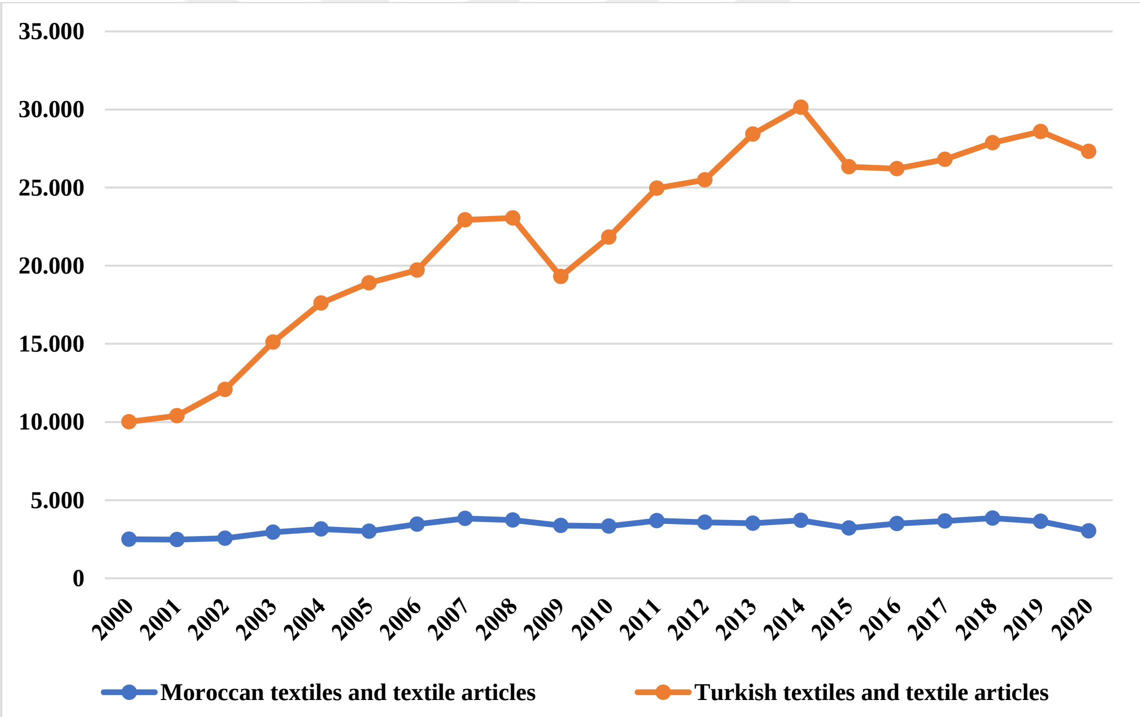

Figure 3.27: Turkey and Morocco Textiles and Textile Article Export 2001-2020 (US$ Million)
Source: ITC and UN COMTRADE database (Author's calculation)

3.5.4.2 Moroccan and Turkish textiles and textiles articles import

Over the determined period, the Turkish and Moroccan textiles and textile articles imports have witnessed a notable increase, reaching $20 billion and $3 billion in 2020, respectively. Following the exports pathway, the Turkish and Moroccan textiles and textile articles imports have declined due to the 2008 economic crisis, reaching $14 billion and $2.4 billion, respectively in the year 2009.

In addition, both countries textiles and textile articles imports were not exempt from falling down in 2015. More specifically, Turkish textiles and textile articles imports have declined by 15% in 2015, reaching $18 billion. In return, Moroccan Turkish textiles and textile articles imports have declined by 10%, reaching $2.8 billion in the year 2015.

Moreover, both countries have encountered a further decrease in textiles and textile articles imports due to the Covid epidemic. Additionally, Moroccan textiles and textile articles imports have decreased by 16%, reaching $3 billion in 2020, while the Turkish textiles and textile articles imports have stagnated compared to the previous year, reaching $28 billion in 2020.

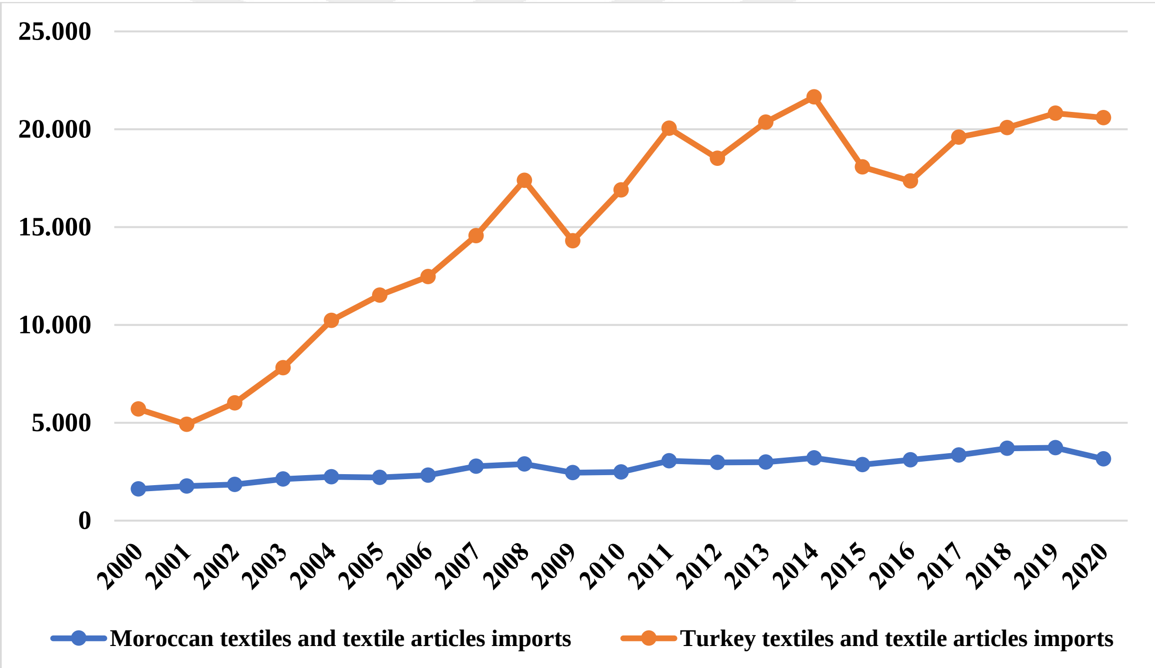

Figure 3.28: Turkey and Morocco Textiles and Textile Article Import 2001-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.5.5 Products Of The Chemical Or Allied Industries Level

In this subsection, the trade data of Moroccan and Turkish products or chemicals or allied industries are provided simultaneously in order to give a comparative analysis view regarding the exports and imports of both countries throughout the determined period.

3.5.5.1 Moroccan and Turkish products of the chemical or allied industries export

Throughout the determined period, the Turkish and Moroccan products of the chemical or allied industries exports have known a remarkable increase, reaching in the last year $8.8 billion and $4.8 billion, respectively. Additionally, the sector in both countries were not exempted from the impact of the 2008 economic crisis. More specifically, the Turkish products of chemicals or allied industries exports have declined by 13% compared to the previous year, reaching $3.3 billion in 2009. In return, the Moroccan products of chemicals or allied industries exports have experienced a robust decrease as the exports value declined by 58% compared to preceding year, reaching $1.9 billion in 2009.

Moreover, the Turkish products of the chemical or allied industries exports curve have experienced a significant increase until 2015 as the sector has fallen by 15% compared to the preceding year owing to the fall in the value of the euro against the dollar and the decline in the price of oil and other different commodities, reaching $5.7 billion. In contrast, the Moroccan products of chemicals or allied industries exports have started a constant decrease from 2012 until 2016 before taking an upward in the following years.

Contrary to the other sectors, the Turkish products of the chemical or allied industries exports have maintained the upward despite the impact of the Covid epidemic on the world economy, increasing by 9% compared to the previous year, reaching $8.8 billion in 2020. In return, the Moroccan products of chemicals or allied industries exports have witnessed a stagnation over the three last years of the period, reaching $4.8 billion in 2020.

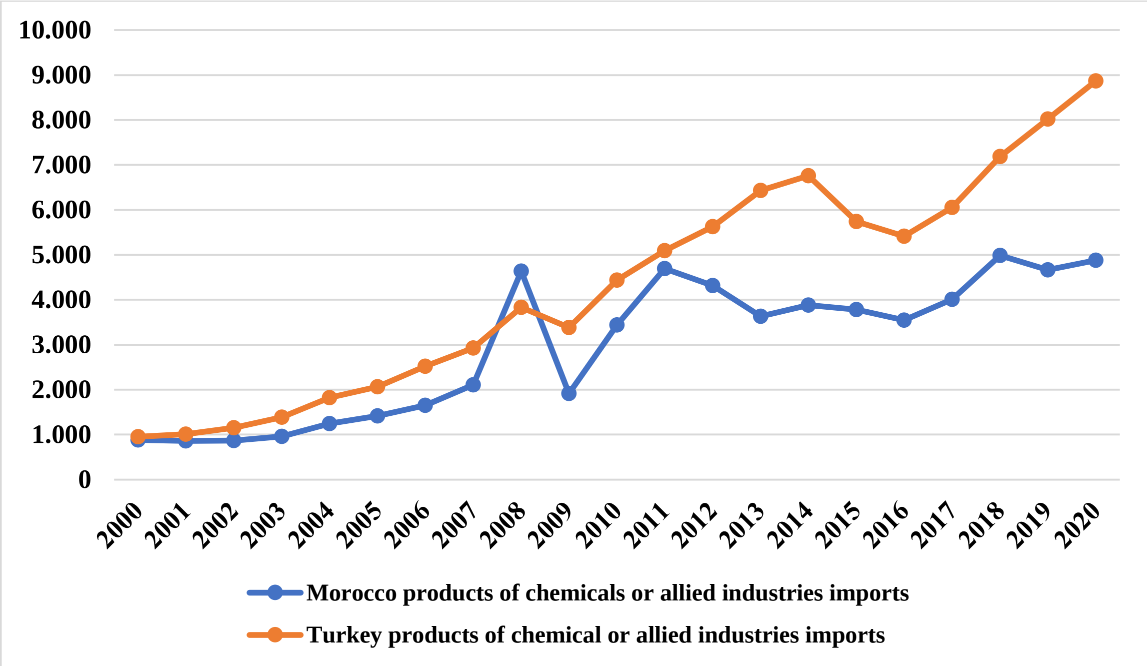

Figure 3.29: Turkey and Morocco Products of The Chemical or Allied Industries Export 2001-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author's calculation)

3.5.5.2 Moroccan and Turkish products of the chemical or allied industries import

Following the exports pathway, the Turkish and Moroccan products of the chemical or allied industries imports have experienced an increase, reaching $20 billion and $3.6 billion in 2020, respectively. Furthermore, both countries products of chemicals or allied industries imports curves have known a decline in 2008 owing the impact of the economic crisis. More specifically, the Turkish products of chemicals or allied industries imports has decline by 18% compared to the previous year, reaching $14 billion in 2009. In return, the Moroccan products of chemicals or allied industries imports has declined by 12%, reaching $2.2 billion in 2009.

After recovering from the 2008 economic crisis, the Turkish curve has known a wobbling increase from 2009 until 2020 due to different circumstances such as the fall in the value of the euro against the dollar and the decline in the price of oil and other different commodities, which negatively impacted the curve, especially in 2015 as the imports have decline by 10%, reaching $18 billion. In contrast, the Moroccan products of chemicals or allied industries imports have decreased by 6% in 2015, reaching $3 billion. Moreover, the covid period was less impactful for both countries as the Turkish and Moroccan products of chemicals or allied industries imports have stagnated at $20 billion and $3.6 billion in 2020, respectively.

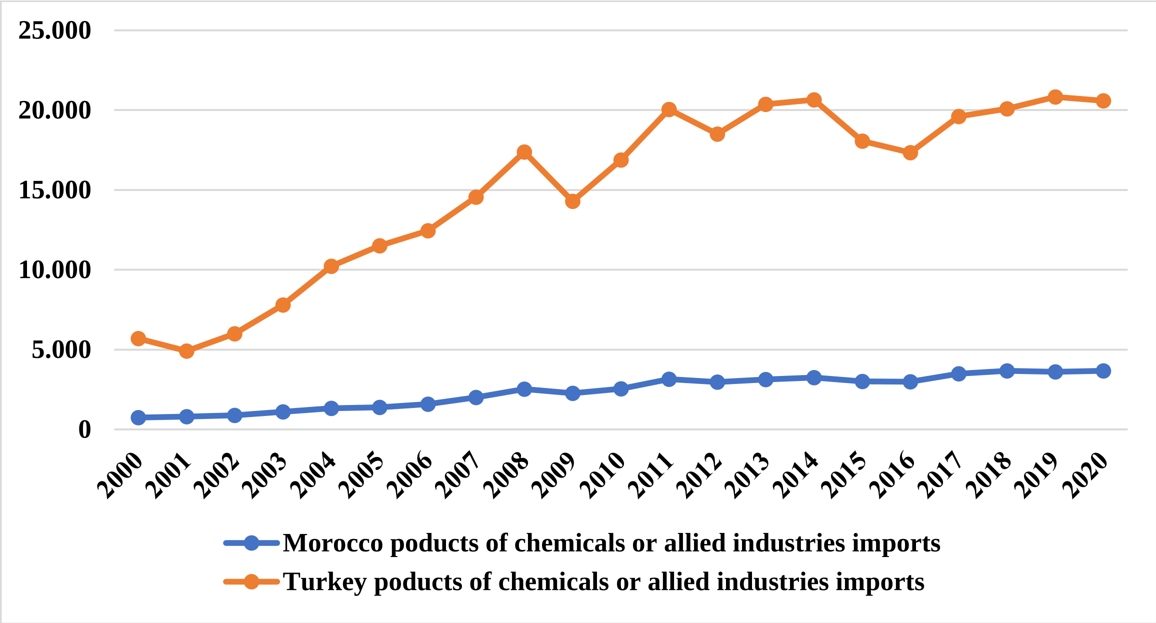

Figure 3.30: Turkey and Morocco Products of The Chemical or Allied Industries Import 2001-2020 (US$ Million)

Source: ITC and UN COMTRADE database (Author’s calculation)

4. THE INTERNATIONAL COMPETITIVENESS ANALYSIS OF MOROCCAN AND TURKISH VEGETABLE PRODUCTS, PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES AND TEXTILES AND TEXTILE ARTICLES SECTORS

Through this section, which is the most important part of our study, we are going to measure the international competitiveness of Morocco and Turkey in the three major sectors, vegetable products, products of the chemical or allied industries and textiles and textile articles, between 2010 and 2020 based on the competitiveness indexes determined in the section below.

4.1 RESEARCH METHOD AND DATA SET

Concerning the methodology of our study, we are going to measure Moroccan and Turkish international competitiveness within three major sectors (vegetable products, products of chemicals or allied industries, and textiles and textile articles) based on the Revealed Comparative Advantage index (RCA) developed by Balassa (1965). Furthermore, three different trade indices extended from the Balassa index and developed by Vollrath (1991), which are the Revealed Trade Advantage (RTA), the Relative Export Advantage (RXA) and the Revealed Competitiveness (RC), will be also included in our study as long as they take into account import data and eliminate countries and products double-counting, which provide more credibility and accuracy to the results.

4.1.1 Revealed Comparative Advantage Index

In addition to the literature review provided in section 2.3.2.2, we are going to present the RCA mathematical equation below in order to illustrate the calculation method.

$$RCA_{ij} = \frac{X_{ij}/X_{it}}{X_{wj}/X_{wt}} \tag{4.1}$$

X_{ij}: Export of products j from the country i.

X_{it}: Total export from the country i

X_{wj}: Total world exports of products j

X_{wt}: Total world exports

$RCA_{ij} > 1$: The country I has a revealed comparative advantage in j

$RCA_{ij} < 1$: The country I has a revealed comparative disadvantage in j

Where the numerator is the share of good j in the exports of country I, and the denominator is the share of good j in the exports of the world.

For more accuracy, Bender and Li (2002) have appointed index values less than 0.5 as very low competitiveness, between 1 and 0.5 as low competitiveness, between 2 and 1 as high competitiveness, and greater than 2 as very high competitiveness.

4.1.2 Revealed Trade Advantage Index

In addition to the literature review provided in section 2.3.2.3, we are going to present the Revealed Trade Advantage (RTA), the Revealed Export Advantage (RXA), and the Revealed Competitiveness (RC) indexes below in order to illustrate the calculation method:

$$RTA_{ij} = RXA_{ij} - RMA_{ij} \qquad (4.2)$$

$$RXA_{ij} = \frac{X_{ij}/X_{it}}{X_{wj}/X_{wt}} \qquad (4.3)$$

$$RMA_{ij} = \frac{M_{ij}/M_{it}}{M_{wj}/M_{wt}} \qquad (4.4)$$

$$RC_{ij} = \ln(RXA_{ij}) - \ln(RMA_{ij}) \qquad (4.5)$$

X_{ij} : Represents total exports of products j from the country i; while M_{ij} : Represent Total import of products j from the country i

X_{it}: Represents total export from the country i excluding j exports; while M_{it} : Represents Total import from the country i excluding j imports

X_{wj} : Represents total world exports of products j excluding the country i; while M_{wj} : Represent total world imports of products j excluding the country i,

X_{wt} : Represents total world exports excluding j exports excluding i; while M_{wt} : Represents total world imports excluding j imports excluding country i

The RTA index interpretation:

$RTA_{ij} > 0$: The country i has a revealed comparative advantage in j

$RTA_{ij} < 0$: The country i has a revealed comparative disadvantage in j

The RC interpretation:

$RC_{ij} > 0$: The country i has a revealed comparative advantage in j

$RC_{ij} < 0$: The country i has a revealed comparative disadvantage in j

The RXA index interpretation:

$RXA_{ij} > 1$: The country i has a revealed comparative advantage in j

$RXA_{ij} < 1$: The country i has a revealed comparative disadvantage in j

4.1.3 Data Of The Study

The data used in our study are retrieved from the Trade Map database developed by the International Trade Center (ITC), which is an online tool that publishes the export and import data of countries based on the Harmonized System (HS) codes besides other functions such as market shares and related trade balances.

Additionally, our analyses and calculations will be covering the period between 2010 and 2020 using the international data trade of both countries regarding the three sectors. However, the data trade for 2021 will not be included in our study since it was not available at the time of the preparation. Moreover, the data that will be used in our study are determined by gathering and calculating the sums of subsectors export and import belonging to each sector (vegetable products, products of the chemical or allied industries, and textiles and textile articles) from the Trade Map Database. For further information, the tables below provide the subsectors belonging to each major sector:

Table 4.1: The Subsectors Belonging to The Vegetable Products Sector

HS Code	HS Code Description
06	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage
07	Edible vegetables and certain roots and tubers
08	Edible fruit and nuts; peel of citrus fruit or melons
09	Coffee, tea, maté and spices
10	Cereals
11	Products of the milling industry; malt; starches; inulin; wheat gluten
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder
13	Lac; gums, resins and other vegetable saps and extracts
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included

Source : https://www.wcotradetools.org/en/harmonized-system

Table 4.2: The Subsectors Belonging to The Textiles and Textile Articles Sector

HS Code	HS Code Description
50	Silk
51	Wool, fine or coarse animal hair; horsehair yarn and woven fabric
52	Cotton
53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn
54	Man-made filaments; strip and the like of man-made textile materials
55	Man-made staple fibres
56	Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof
57	Carpets and other textile floor coverings
58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery
59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use
60	Knitted or crocheted fabrics
61	Articles of apparel and clothing accessories, knitted or crocheted
62	Articles of apparel and clothing accessories, not knitted or crocheted
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags

Source : https://www.wcotradetools.org/en/harmonized-system

Table 4.3: The Subsectors Belonging to The Products of The Chemical or Allied Industries Sector

HS Code	HS Code Description
28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes
29	Organic chemicals
30	Pharmaceutical products
31	Fertilizers
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other coloring matter; paints and varnishes; putty and other mastics; inks
33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations
34	Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, ‘dental waxes and dental preparations with a basis of plaster
35	Albuminoidal substances; modified starches; glues; enzymes
36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations
37	Photographic or cinematographic goods
38	Miscellaneous chemical products

Source : https://www.wcotradetools.org/en/harmonized-system

4.2 RESULTS

The results of our study will be conducted through two subsections where the international competitiveness of the three determined sectors is calculated according to the Balassa's Revealed Comparative Advantage (RCA) index in the first subsection and Vollrath's (RTA, RXA, RC) indexes in the second subsection using the data between 2010 and 2020. Furthermore, the evaluation of each sector will involve Turkey and Morocco in both subsections in order to have a clear vision of each country's competitiveness level regarding the determined sectors.

4.2.1 Revealed Comparative Advantage

In this section, the international competitiveness of the three determined sectors between 2010 and 2020 will be calculated separately according to the Balassa Index (RCA). The first subsection will be devoted to the vegetable products sector, the second subsection to the "textiles and textile articles sector and the third subsection to the products of the chemical or allied industries sector. In addition, each part will involve both Turkey and Morocco international competitiveness results regarding these sectors.

4.2.1.1 Vegetable products

The table below shows the RCA index values of the vegetable products sector between 2010 and 2020 in Turkey and Morocco:

Table 4.4: Turkish and Moroccan Vegetable Products Sectors (RCA)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Turkish RCA	2.222	1.985	1.664	1.804	1.872	1.796	1.672	1.563	1.586	1.708	1.629
Moroccan RCA	3.193	3.160	2.771	3.158	2.947	3.054	2.838	3.230	3.577	3.847	3.674

According to table 4.4 above, the results displayed show that both countries have had a comparative advantage throughout the last eleven period regarding the vegetable products sector from 2010 to 2020. In addition, Turkey's highest index value was in 2010 reaching 2.222, which is considered very high competitiveness. In contrast, Morocco's index values have known very high competitiveness during the whole period as the index values have exceeded 3 in most years.

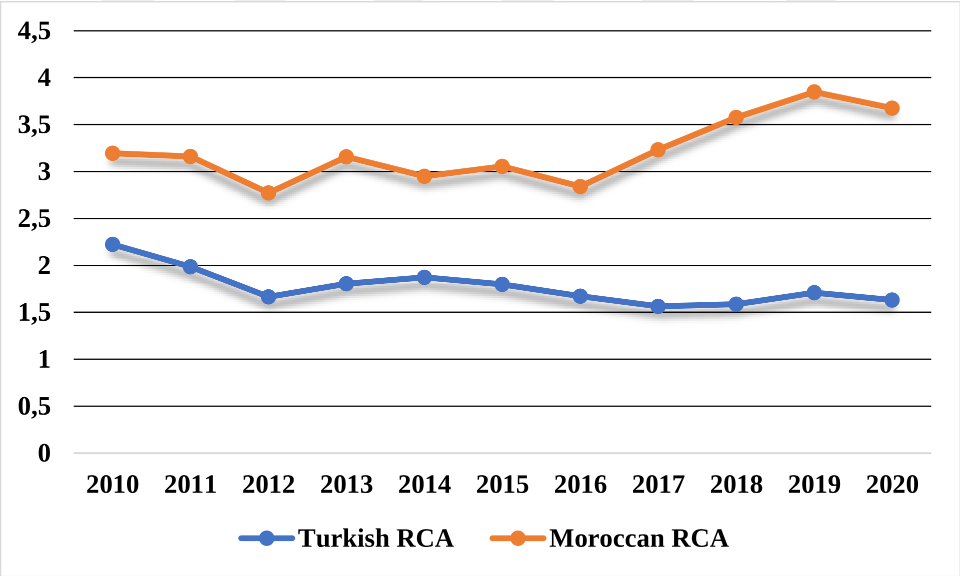

Figure 4.1: Graphical Presentation of The Vegetable Products Sector (RCA)

As shown in figure 4.1, the Turkish curve illustrates that the sector still has a comparative advantage during the determined period even though the curve has known a remarkable decrease, especially in the last five years. In contrast, the Moroccan curve experienced a fluctuating progression until 2016 before taking an upward curve in the following years.

Despite the instability in particular periods, both countries have shown a comparative advantage in the vegetable products sector throughout the ten years.

4.2.1.2 Textiles and textile articles

The table below shows the RCA index values of the textiles and textile articles sector for both Turkey and Morocco between 2010 and 2020:

Table 4.5: Turkish and Moroccan Textiles and Textile Articles (RCA)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Turkish RCA	4.492	4.427	4.143	4.175	4.106	3.915	3.900	3.815	3.851	3.608	3.585
Morocco RCA	4.403	4.080	4.136	3.799	3.531	3.087	3.240	3.193	3.037	2.810	2.425

According to the table 4.5. above, Turkish and Moroccan revealed comparative advantage values have experienced a noticeable regression over the determined period, reaching 3,585 and 2.425 by 2020, respectively. Furthermore, the highest RCA values in both countries was in 2010 whereas the lowest RCA values was in 2020. However, both countries still maintain very high competitiveness in the textiles and textile articles sector even though the RCA values have taken a downward during the last years.

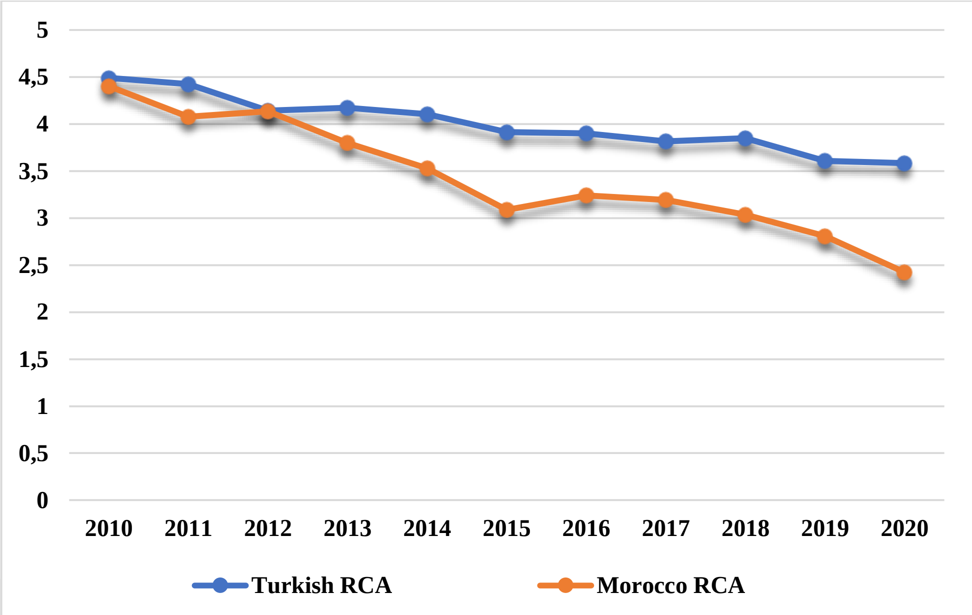

Figure 4.2: Graphical Presentation of The Textiles and Textile Sector (RCA)

As is clearly shown in figure 4.2. above, the Turkish and Moroccan curves have constantly decreased over the determined period while maintaining very high competitiveness. Furthermore, the Turkish and Moroccan curves have intersected in 2012 before pursuing their downward in the following years. However, the Turkish curve has maintained its overtaking over the Moroccan curve, which implicitly denotes that Turkey is more competitive than Morocco in the textile and textiles articles sector based on the revealed comparative advantage index values.

4.2.1.3 Products of chemicals or allied industries

The table below shows the RCA index values of the products of the chemical or allied industries sector for both Turkey and Morocco between 2010 and 2020:

Table 4.6: Turkish and Moroccan Products of The Chemical or Allied Industries Sectors (RCA)

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Turkish RCA	0.424	0.427	0.429	0.469	0.468	0.441	0.415	0.427	0.461	0.469	0.506
Moroccan RCA	2.111	2.456	2.342	1.945	1.879	1.884	1.701	1.735	1.832	1.667	1.708

According to table 4.6, the revealed comparative advantage of Turkey regarding the products of the chemical or allied industries sector has shown a very low competitiveness as all index values have not exceeded 0,5 except for the year 2020. In contrast, the Moroccan index values have shown high and very high competitiveness throughout the determined period as the index value has exceeded 2 in particular years.

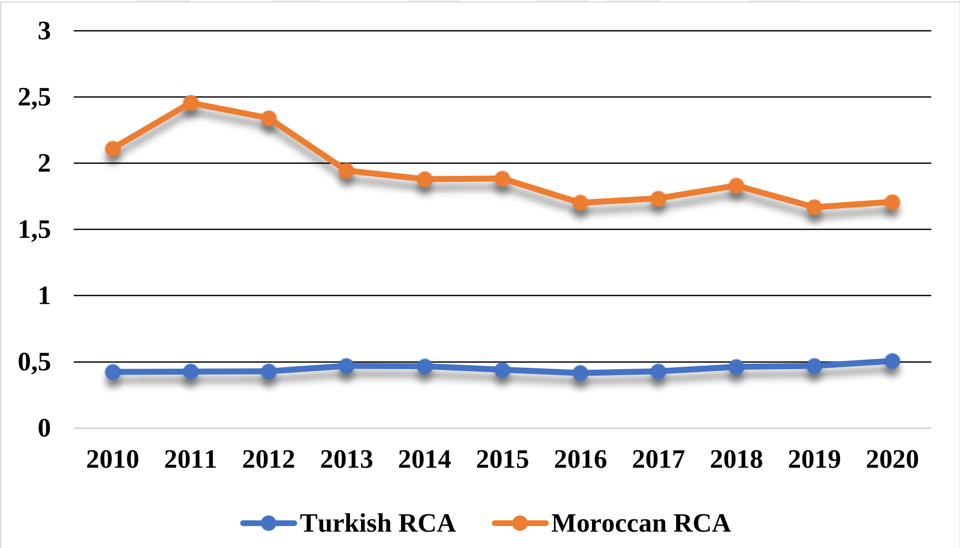

Figure 4.3: Graphical Presentation of Products of The Chemical or Allied Industries Sector (RCA)

As shown in figure 4.3 above, the Moroccan curve has known a significant decrease as the index value passed from 2.456 in 2011 to 1.701 in 2016 before stagnating in the last five years. Despite the curve's decrease, the country remained a high competitiveness in the "products of the chemical or allied industries" sector over the whole period. In contrast, the Turkish curve has experienced a steady slump maintaining a very low competitiveness throughout the determined period. In addition, the highest Moroccan RCA value was 2.456 in 2011, while the Turkish highest value was 0.506 in the last year 2020. Therefore, Morocco is more competitive than Turkey in the products of chemicals or allied industries sector despite its RCA value decline.

4.2.2 Relative Trade Advantage Results

Through this section, the international competitiveness of Turkey and Morocco regarding the three sectors is evaluated based on the Vollrath indexes Revealed Trade Advantage (RTA), Revealed Export Advantage (RXA), Revealed Import Advantage (RMA), and Revealed Competitiveness (RC). Additionally, the results are provided separately where the first subsection is dedicated to the "vegetable products" sector, the second subsection to the "textiles and textile articles" sector, and the third subsection to the "products of chemicals or allied industries" sector.

4.2.2.1 Vegetable products

The table below shows the RXA, RMA, RTA and RC indexes results of the vegetable products sector for both Turkey and Morocco between 2010 and 2020:

Table 4.7: The RXA, RMA, RTA and RC Values of The Vegetable Products Sector

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Moroccan RXA	3.383	3.353	2.911	3.358	3.118	3.254	3.010	3.464	3.861	4.199	4.036
Turkish RXA	2.313	2.052	1.703	1.857	1.933	1.851	1.717	1.598	1.620	1.755	1.673
Moroccan RMA	2.422	2.626	2.622	1.940	2.457	2.059	2.284	1.906	2.027	1.981	2.674
Turkish RMA	0.751	0.750	0.676	0.779	1.009	0.806	0.742	0.777	0.877	1.312	1.120
Moroccan RTA	0.960	0.726	0.288	1.417	0.661	1.194	0.725	1.558	1.833	2.217	1.362
Turkish RTA	1.561	1.302	1.026	1.078	0.924	1.044	0.974	0.820	0.743	0.443	0.552
Moroccan RC	0.333	0.244	0.104	0.548	0.238	0.457	0.275	0.597	0.644	0.751	0.411
Turkish RC	1.123	1.006	0.923	0.868	0.650	0.831	0.838	0.720	0.6136	0.291	0.400

According to table 4.7 above, the Turkish and Moroccan vegetable products sectors have a comparative advantage as the RTA index values are positive (above 0) between 2010 and 2020. However, the Turkish RTA value has experienced a downward throughout the determined period, handing from 1.561 in 2010 to 0.552 in 2020. In its turn, the Moroccan RTA value has wobbly increased during the last ten years, moving from 0.960 in 2010 to 1.362 in 2020. Additionally, the RC values have increased and decreased synchronously with the RTA values, providing the same interpretation regarding the sector's international competitiveness.

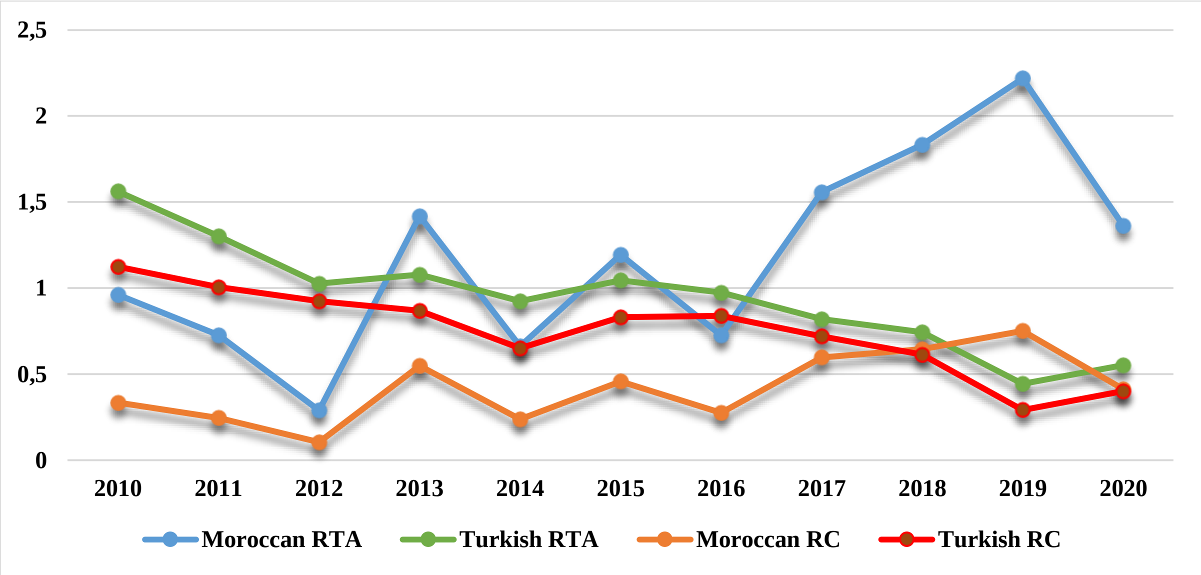

Figure 4.4: Comparative Graphical Representation of RTA and RC Values of The Turkish and Moroccan Vegetable Products Sector

As is shown in figure 4.5 above, the RTA and RC curves of Turkish and Moroccan vegetable products have simultaneously moved throughout the eleven years. Additionally, the Moroccan RC and RTA curves have known a wobbling increase over the determined period until 2019 before taking a downward by the end of 2020, while the Turkish RC and RTA curves have witnessed a wobbled decrease until 2019 before taking an upward by the end of 2020. Despite the endured decrease in particular periods, Turkey and Morocco have shown a comparative advantage in the vegetable products sector as the results have remained positive for both indexes.

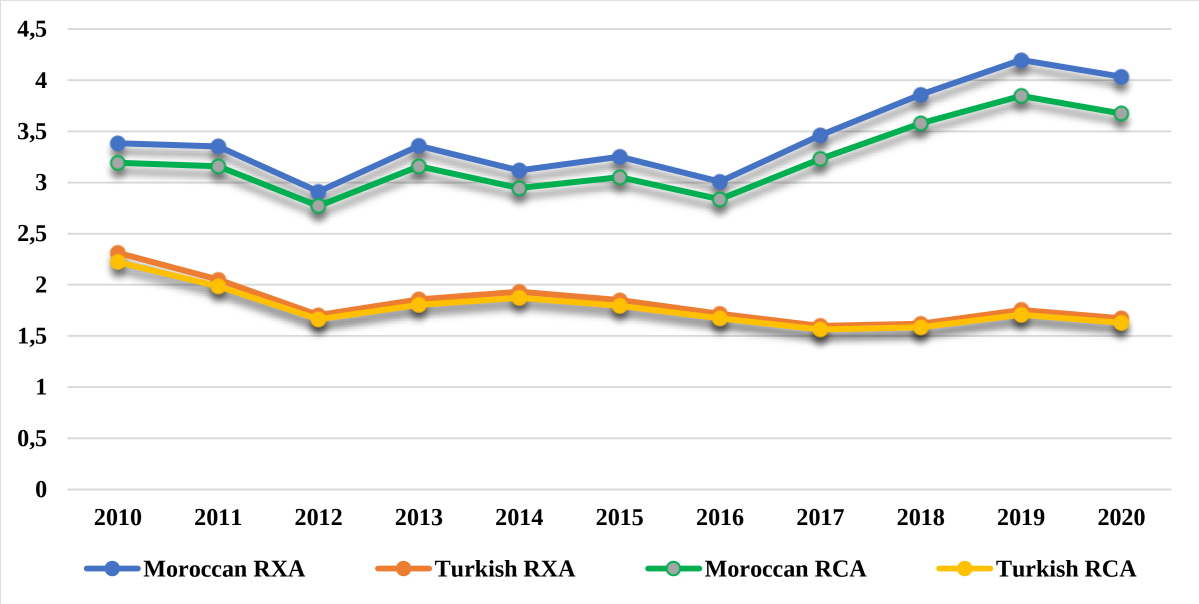

Figure 4.5: Comparative Graphical Representation of RXA and RCA Values of The Turkish and Moroccan Vegetable Products Sector

As is seen in figure 4.5 above, the Moroccan RCA and RXA curves have simultaneously experienced an instable evolution until 2016 before taking a noticeable upward in the three following years and ending the period with another decline by the end of 2020. In contrast, the Turkish RCA and RXA curves have declined over the period except in 2013, 2014 and 2019. Additionally, the RCA and RXA curves have concomitantly changed for both countries over the determined period, providing the same interpretation.

4.2.2.2 Textiles and textile articles

The table below shows the RXA, RMA, RTA and RC indexes results of the textiles and textile articles sector for both Turkey and Morocco between 2010 and 2020:

Table 4.8: The RXA, RMA, RTA and RC Values of The Textiles and Textile Articles Sector

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Moroccan RXA	**5.213**	**4.731**	**4.783**	**4.348**	**4.011**	**3.449**	**3.656**	**3.571**	**3.355**	**3.074**	**2.605**
Turkish RXA	**5.471**	**5.348**	**4.908**	**4.997**	**4.936**	**4.696**	**4.682**	**4.515**	**4.537**	**4.209**	**4.192**
Moroccan RMA	**1.826**	**1.836**	**1.875**	**1.837**	**1.880**	**1.923**	**1.862**	**1.959**	**1.948**	**1.948**	**1.806**
Turkish RMA	**1.679**	**1.512**	**1.337**	**1.319**	**1.392**	**1.342**	**1.349**	**1.302**	**1.241**	**1.310**	**1.021**
Moroccan RTA	**3.386**	**2.895**	**2.908**	**2.511**	**2.131**	**1.526**	**1.794**	**1.612**	**1.407**	**1.125**	**0.799**
Turkish RTA	**3.791**	**3.835**	**3.571**	**3.678**	**3.543**	**3.353**	**3.333**	**3.212**	**3.296**	**2.899**	**3.171**
Moroccan RC	**1.048**	**0.946**	**0.936**	**0.861**	**0.757**	**0.584**	**0.674**	**0.600**	**0.543**	**0.455**	**0.366**
Turkish RC	**1.180**	**1.262**	**1.300**	**1.331**	**1.265**	**1.252**	**1.244**	**1.243**	**1.296**	**1.166**	**1.412**

According to table 4.8 above, the Turkish and Moroccan Revealed Trade Advantage (RCA) values are generally positive over the eleven years, which means that both countries have a comparative advantage in the textiles and textile articles sector. However, the Moroccan RTA value has experienced a significant decrease, moving from 3.386 in 2010 to 0.779 in 2020. In contrast, the Turkish RTA values have remained higher than 3 in most years.

In addition, the RC values have exhibited similarity with the RTA values changes over the determined period as the RC values followed the RTA pathway in each year. Furthermore, the RTA and RC indexes' values have denoted a comparative advantage for the Turkish and Moroccan "textiles and textile articles" sectors as both indexes values are positive (above 0).

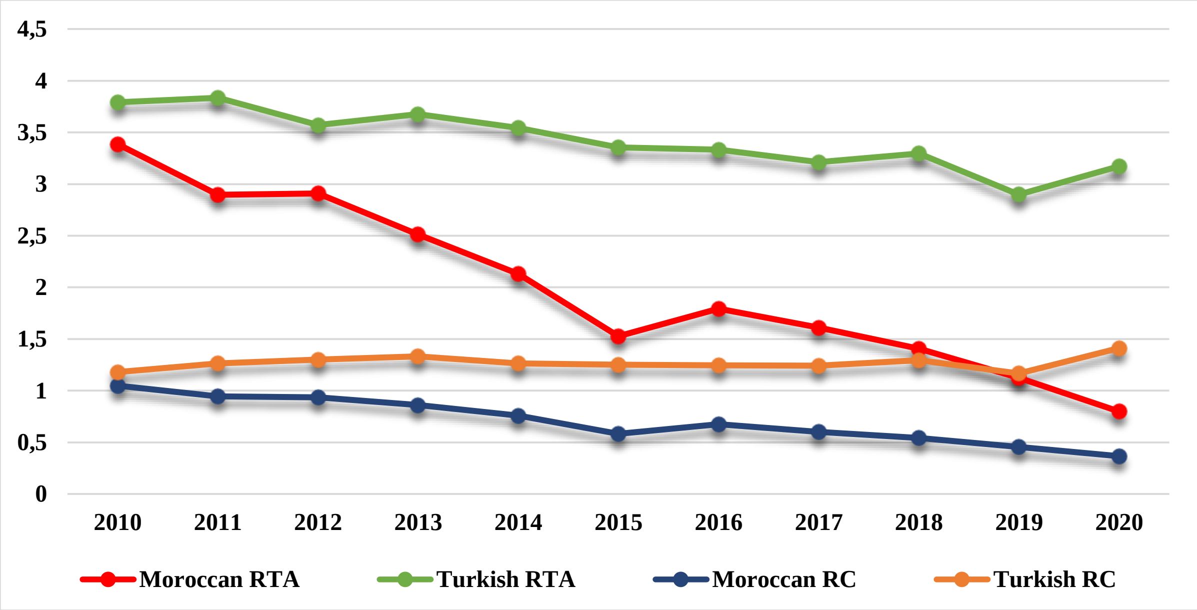

Figure 4.6: Comparative Graphical Representation of The RTA and RC Values of The Turkish and Moroccan Textiles and Textile Articles Sector

As is seen in figure 4.6 above, the Moroccan and Turkish RTA and RC curves have simultaneously changed throughout the determined period. However, the Moroccan RC and RTA curves have taken a downward during the whole period except in 2012 and 2016, whereas the Turkish RC and RTA curves have smoothly declined until 2019 before taking an upward by the end of 2020. Based on the curves evolution, Turkey is clearly more competitive than Morocco in the textiles and textile articles sector over the whole period.

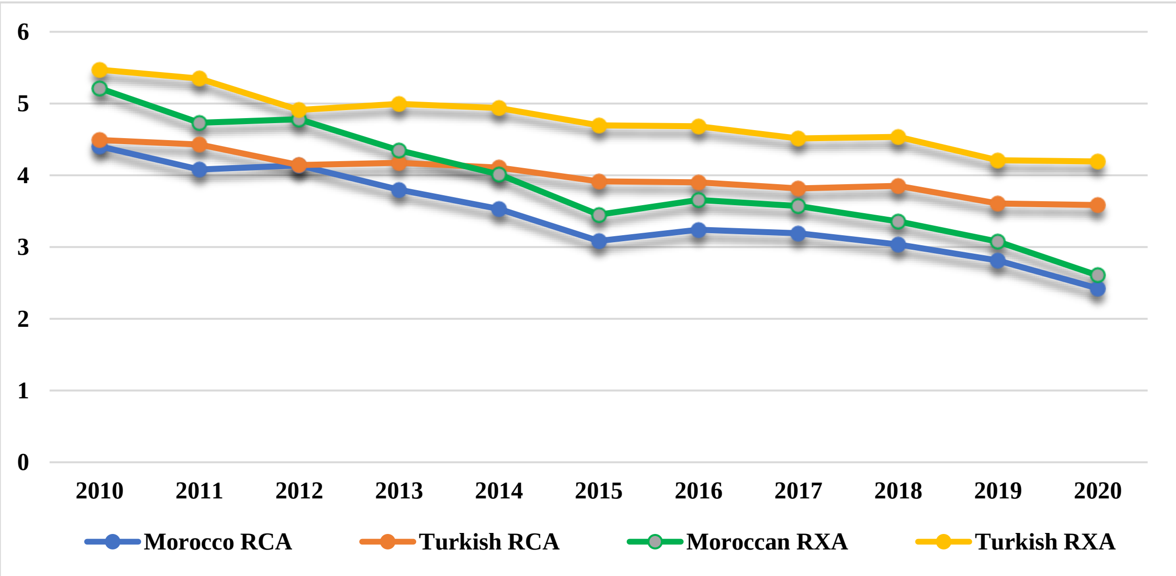

Figure 4.7: Comparative Graphical Representation of RXA and RCA Values of The Turkish and Moroccan Textiles and Textile Articles Sector

According to figure 4.7 above, the Moroccan RCA and RXA curves have experienced a significant decrease over the period except in 2013 and 2016. In contrast, the Turkish RCA and RXA curves have also declined throughout the determined period except in 2013 and 2018. Despite the curves decreases, both countries still have a comparative advantage in the textiles and textile article sector as long as the indexes values remained positives.

4.2.2.3 Products of the chemical or allied industries

The table below shows the RXA, RMA, RTA and RC indexes results of the products of chemicals or allied industries sector for both Turkey and Morocco between 2010 and 2020:

Table 4.9: The RXA, RMA, RTA and RC Values of The Products of The Chemical or Allied Industries Sector

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Moroccan RXA	2.382	2.865	2.686	2.135	2.053	2.068	1.832	1.874	2.005	1.795	1.861
Turkish RXA	0.399	0.402	0.405	0.444	0.443	0.4163	0.390	0.402	0.435	0.441	0.477
Moroccan RMA	0.753	0.766	0.724	0.763	0.765	0.834	0.726	0.804	0.725	0.6988	0.748
Turkish RMA	0.970	0.904	0.866	0.868	0.950	0.914	0.901	0.876	0.932	1.011	0.861
Moroccan RTA	1.628	2.099	1.961	1.371	1.287	1.234	1.106	1.070	1.280	1.096	1.113
Turkish RTA	-0.570	-0.501	-0.460	-0.423	-0.507	-0.498	-0.511	-0.473	-0.496	-0.569	-0.384
Moroccan RC	1.150	1.318	1.310	1.028	0.986	0.907	0.925	0.846	1.017	0.943	0.9118
Turkish RC	-0.886	-0.809	-0.759	-0.668	-0.761	-0.786	-0.836	-0.777	-0.761	-0.827	-0.590

According to table 4.9 above, the Moroccan products of chemicals or allied industries' RTA values are positive (above 0), which means that the country has a comparative advantage throughout the last eleven years. In contrast, the Turkish RTA values are constantly negative (under 0) over the whole period, which signifies that the country has a comparative disadvantage in the products of chemicals or allied industries sector. In addition, the RC index results have similarly provided the same interpretation of the RTA index as the RC values have remained positive for Morocco and negative for Turkey, which implicitly endorsed a comparative advantage for the Moroccan products of chemicals or allied industries sector and a comparative disadvantage for the Turkish products of chemicals or allied industries sector over the determined period.

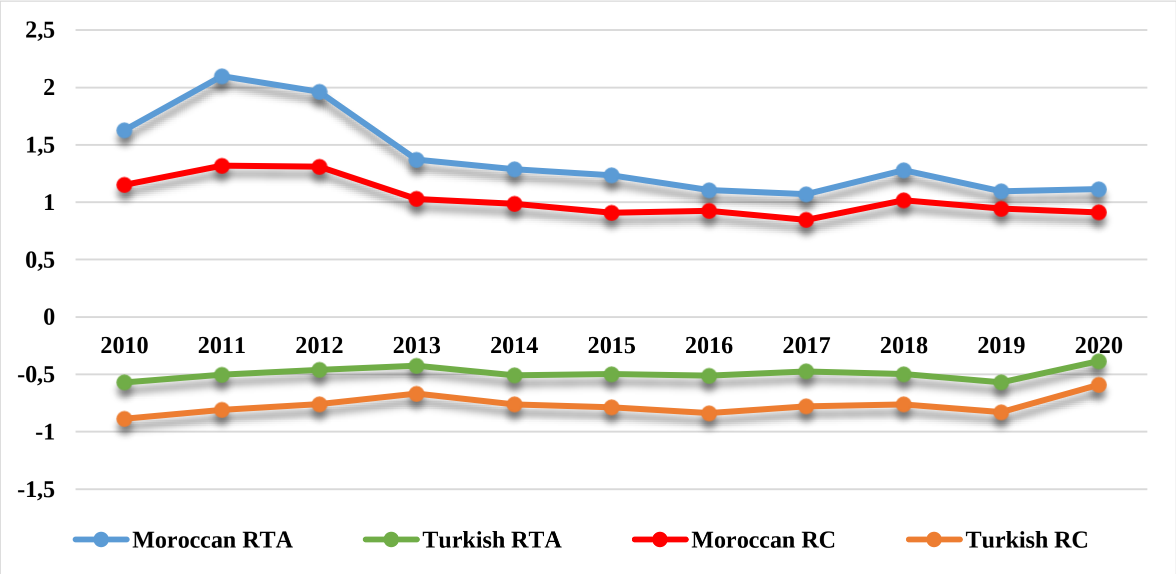

Figure 4.8: Comparative Graphical Representation of RTA and RC Values of The Turkish and Moroccan Products of The Chemical or Allied Industries Sector

As is clearly shown in figure 4.8 above, the Moroccan RTA and RC curves have simultaneously declined over the whole period excluding 2011 and 2018. However, the country has maintained its comparative advantage despite the endured decrease as long as the RTA and RC values remained positive (above 0), while the Turkish RTA and RC curves have known a negative stagnation (under 0) throughout the last eleven years, giving the competitive advantage to the Moroccan sector.

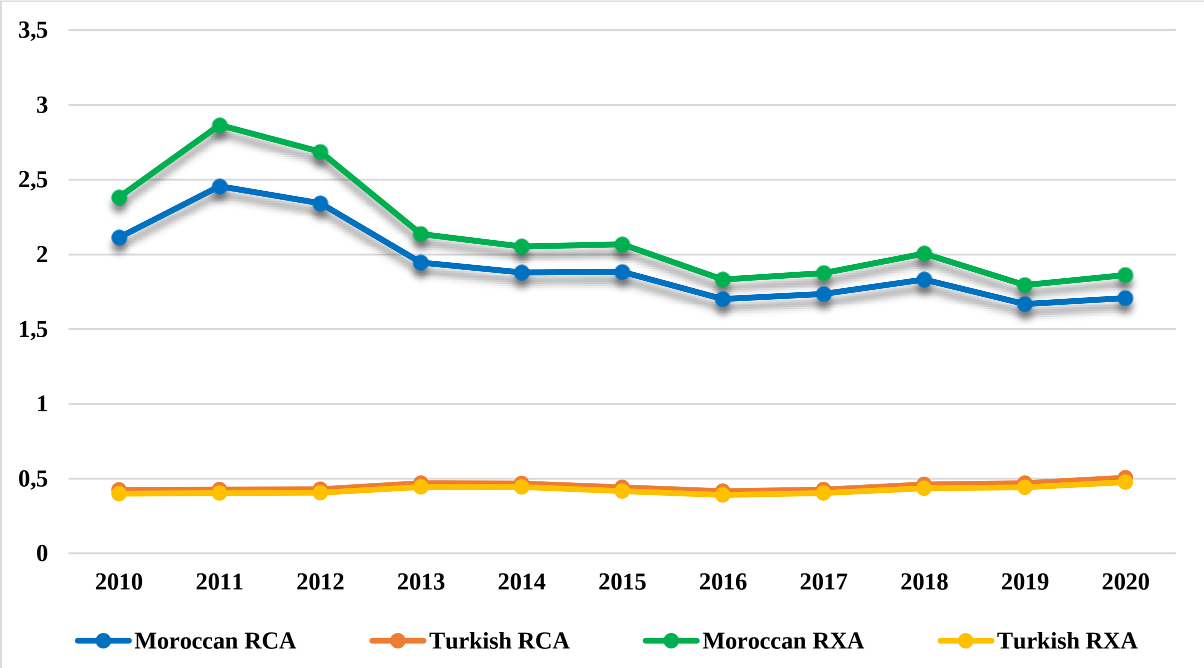

Figure 4.9: Comparative Graphical Representation of RXA and RCA Values of The Turkish and Moroccan Products of The Chemical or Allied Industries Sector

As seen in figure 4.9 above, the Moroccan RCA and RXA curves have experienced a decline over the determined period expect for the years 2011 and 2018, while the Turkish RCA and RXA curves have known a negative stagnation during the whole period. Furthermore, the RCA and RXA curves have experienced synchronous changes for both countries, showing a comparative advantage for Morocco (as the values are above 0) and a comparative disadvantage for Turkey (as the values are under 0) in the "products of the chemical or allied industries" sector.

4.2.3 The Subsectors Competitiveness Analysis Of The Selected Sectors

To proceed further in our study, we will evaluate the subsectors' competitiveness belonging to the vegetable products, textiles and textile articles, and products of the chemical or allied industries sectors based on the Revealed Comparative Advantage (RCA) index in order to unveil their contribution to the international competitiveness of these major sectors. As it is mentioned in table 4.1, table 4.2, and table 4.3 above, the subsectors codes are provided for each sector based on the Harmonized Commodity Description and Coding System

4.2.3.1 Vegetable products subsectors (RCA)

Through this section, the competitiveness of subsectors is examined based on the Revealed Comparative Advantage (RCA) index between 2010 and 2020 for both Morocco and Turkey.

Table 4.10: The RCA Index Values of Vegetable Products Subsectors in Morocco

HS CODE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
06	0.501	0.447	0.446	0.504	0.598	0.503	0.618	0.694	0.785	0.889	0.751
07	9.102	9.946	9.685	10.59	10.20	10.15	8.957	10.63	11.61	12.12	10.84
08	6.439	7.091	5.668	5.953	5.207	5.308	4.726	5.378	6.244	6.724	7.152
09	0.665	0.628	0.612	0.818	0.838	0.643	0.687	0.632	0.885	0.792	0.678
10	0.012	0.017	0.003	0.077	0.008	0.009	0.008	0.002	0.002	0.002	0.002
11	1.966	2.175	3.172	3.516	2.787	1.341	0.289	0.150	0.266	0.179	0.128
12	0.794	0.779	0.727	0.772	0.719	0.775	0.773	0.940	1.028	1.166	1.000
13	5.867	3.787	2.486	4.243	4.568	4.743	5.474	5.232	5.185	4.723	5.531
14	0.333	0.299	0.255	0.449	0.450	0.422	0.4261	0.408	0.361	0.381	0.299

According to table 4.10. above, the results have distinctly shown the competitiveness level of Moroccan vegetable products subsectors over the determined period. Additionally, the subsectors edible vegetables and certain roots and tubers (HS code 07), edible fruit and nuts; peel of citrus fruit or melons (HS code 08), and lac; gums, resins and other vegetable saps and extracts (HS code 13) have shown a comparative advantage as the RCA index values have exceeded 1 in all years. In contrast, the subsectors live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage (HS code 06), coffee, tea, maté and spices (HS code 09), cereals (HS code 10), and vegetable plaiting materials; vegetable products not elsewhere specified or included (HS code 14) have revealed a comparative disadvantage as the RCA index values are below 1 in all years.

Besides, the subsectors products of the milling industry; malt; starches; inulin; wheat gluten (HS code 11) and oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder (HS code 12) have experienced an unstable level of competitiveness as the subsectors referred to as HS code 11 had a comparative advantage between 2010 and 2015 before taking a negative downward in the last five years, while the subsector referred to as HS code 12 have shown a comparative advantage only in the last three years. Additionally, the subsector referred as to HS code 07 edible vegetables and certain roots and tubers was the more competitive, while the subsector referred as to HS Code 10 cereals was the lowest among the vegetable products subsectors.

Table 4.11: The RCA Index Values of Vegetable Products Subsectors in Turkey

HS CODE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
06	0.417	0.478	0.425	0.422	0.429	0.468	0.464	0.462	0.511	0.498	0.491
07	2.615	2.305	1.955	2.119	2.255	1.797	1.498	1.540	1.734	1.808	1.929
08	6.096	5.983	5.039	4.976	5.059	4.794	3.953	3.727	3.679	3.713	3.721
09	0.373	0.289	0.294	0.476	0.468	0.399	0.451	0.383	0.418	0.446	0.505
10	0.546	0.125	0.170	0.302	0.294	0.119	0.119	0.117	0.105	0.323	0.250
11	6.701	8.062	6.673	6.738	6.501	7.384	7.984	7.611	7.093	6.697	6.064
12	0.356	0.376	0.307	0.402	0.409	0.260	0.465	0.324	0.380	0.566	0.418
13	0.109	0.112	0.079	0.134	0.127	0.150	0.170	0.185	0.232	0.245	0.374
14	0.025	0.033	0.034	0.024	0.014	0.018	0.018	0.020	0.012	0.012	0.010

According to table 4.11. above, the obtained results have clearly distinguished the competitiveness level of the Turkish vegetable products subsectors throughout the determined period. Moreover, the subsectors Edible vegetables and certain roots and tubers (HS code 07), edible fruit and nuts; peel of citrus fruit or melons (HS code 08), and products of the milling industry; malt; starches; inulin; wheat gluten (HS code 11) have shown a comparative advantage as the RCA index values exceeded 1 in all years.

In contrast, the subsectors live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage (HS code 06), coffee, tea, maté and spices (HS code 09), cereals (HS code 10), oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder (HS code 12), lac; gums, resins and other vegetable saps and extracts (HS code 13), and vegetable plaiting materials; vegetable products not elsewhere specified or included (HS code 14) have experienced a comparative disadvantage as the RCA index values were below 1 in the whole period. Additionally, the subsector referred as to HS code 11 products of the milling industry; malt; starches; inulin; wheat gluten was the more competitive, while the subsectors referred as to HS code 14 vegetable plaiting materials; vegetable products not elsewhere specified or included was the lowest among the vegetable products subsectors.

4.2.3.2 Products of the chemical or allied industries subsectors (RCA)

Through this section, the subsectors competitiveness is examined based on the Revealed Comparative Advantage (RCA) index between 2010 and 2020 for both Morocco and Turkey.

Table 4.12: The RCA Index Values of Products of The Chemical or Allied Industries Subsectors in Morocco

HS CODE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
28	12.290	12.764	11.236	10.026	10.209	11.259	8.256	6.706	6.951	7.157	6.482
29	0.036	0.027	0.026	0.025	0.025	0.023	0.023	0.030	0.029	0.029	0.023
30	0.120	0.106	0.157	0.191	0.162	0.147	0.141	0.135	0.130	0.119	0.102
31	24.161	25.537	27.886	24.952	25.170	22.263	30.653	34.508	35.419	31.346	38.496
32	0.162	0.171	0.181	0.209	0.238	0.224	0.229	0.228	0.191	0.213	0.200
33	0.697	0.682	0.503	0.595	0.612	0.498	0.537	0.586	0.507	0.482	0.369
34	0.668	0.658	0.476	0.329	0.236	0.197	0.212	0.230	0.257	0.201	0.175
35	0.033	0.031	0.033	0.037	0.045	0.033	0.033	0.027	0.035	0.033	0.026
36	0.486	0.382	0.725	1.344	0.687	0.065	0.408	0.437	0.693	0.550	0.562
37	0.037	0.032	0.023	0.014	0.022	0.008	0.009	0.009	0.010	0.007	0.011
38	0.060	0.046	0.038	0.038	0.060	0.030	0.027	0.027	0.025	0.042	0.053

According to table 4.12 above, the RCA index values have clearly revealed the competitiveness of the products of the chemical or allied industries subsectors in Morocco throughout the determined period. Moreover, the subsectors inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes (HS code 28) and fertilizers (HS code 31) have shown a constant comparative advantage over the determined period as the RCA values have broadly exceeded 1 in all years. In contrast, the other subsectors referred to as HS code 29, HS code 30, HS code 32, HS code 33, HS code 34, HS code 35, HS code 36, HS code 37, and HS code 38 have shown a comparative disadvantage in all years. Additionally, the subsector referred as to HS code 31 fertilizers was the more competitive among the products of the chemical or allied industries subsectors over the determined period

Table 4.13: The RCA Index Values of Products of The Chemical or Allied Industries Subsectors in Turkey

HS CODE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
28	1.072	1.159	1.192	1.132	1.265	1.292	1.236	1.267	1.491	1.533	1.432
29	0.186	0.165	0.176	0.178	0.151	0.147	0.152	0.192	0.163	0.163	0.160
30	0.167	0.162	0.169	0.236	0.229	0.203	0.184	0.185	0.229	0.239	0.276
31	0.495	0.354	0.238	0.282	0.453	0.246	0.338	0.356	0.490	0.609	0.697
32	1.009	1.009	1.067	1.108	1.068	1.057	0.975	0.969	1.066	1.101	1.166
33	0.728	0.730	0.712	0.840	0.844	0.713	0.665	0.655	0.613	0.635	0.679
34	1.907	1.877	1.834	1.902	1.977	1.840	1.558	1.477	1.457	1.435	1.743
35	0.558	0.696	0.835	0.819	0.700	0.745	0.775	0.769	0.732	0.799	0.807
36	0.545	0.578	0.648	0.851	0.667	0.793	0.760	0.642	0.468	0.626	0.602
37	0.103	0.126	0.171	0.234	0.169	0.098	0.088	0.105	0.085	0.132	0.106
38	0.347	0.331	0.336	0.397	0.352	0.366	0.365	0.340	0.373	0.379	0.532

As is clearly seen in table 4.13. above, the RCA index results have highlighted the competitiveness level of the products of the chemical or allied Industries subsectors in Turkey over the determined period. In addition, the subsectors referred as to HS code 28 inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes, HS code 32 tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other coloring matter; paints and varnishes; putty and other mastics; inks, and HS code 34 soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, ‘dental waxes and dental preparations with a basis of plaster have shown a comparative advantage as the RCA index values are above 1 throughout the determined period. In contrast, the subsectors referred as to HS code 29 HS code 30, HS code 31, HS code 32, HS code 33, HS code 35, HS code 36, HS code 37, and HS code 38 have shown a comparative disadvantage as the RCA index values are below 1 over the determined period. Furthermore, the subsector known as HS code 34 soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, ‘dental waxes and dental preparations with a basis of plaster was the more competitive among the "products of chemicals or allied industries subsectors.

4.2.3.3 Textiles and textiles articles subsectors (RCA)

Through this section, the subsectors competitiveness is examined based on the Revealed Comparative Advantage (RCA) index between 2010 and 2020 for both Morocco and Turkey.

Table 4.14: The RCA Index Values of Textiles and Textile Articles Subsectors in Morocco

HS CODE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
50	0.040	0.134	0.012	0.025	0.042	0.047	0.037	0.009	0.014	0.029	0.045
51	0.697	0.304	0.607	0.656	0.879	0.655	0.697	0.419	0.487	0.361	0.428
52	0.714	0.693	0.626	0.554	0.112	0.529	0.509	0.508	0.424	0.396	0.456
53	0.125	0.198	0.117	0.085	0.252	0.109	0.034	0.030	0.056	0.099	0.356
54	0.211	0.275	0.192	0.262	0.231	0.201	0.175	0.173	0.208	0.217	0.307
55	0.788	0.906	0.552	0.702	0.793	0.568	0.529	0.582	0.594	0.467	0.890
56	0.335	0.433	0.422	0.423	0.481	0.223	0.250	0.229	0.299	0.259	0.307
57	0.773	0.681	0.648	0.728	0.802	0.845	0.829	0.870	0.911	0.930	0.900
58	0.625	0.868	1.160	1.216	1.142	0.817	0.734	0.701	1.089	0.794	1.055
59	0.030	0.079	0.112	0.214	0.079	0.055	0.048	0.153	0.095	0.179	0.203
60	0.325	0.396	0.191	0.391	0.296	0.290	0.222	0.283	0.248	0.283	0.326
61	3.930	3.837	3.792	3.226	2.926	2.417	2.460	2.388	2.294	2.069	1.804
62	10.786	9.639	10.039	9.345	8.178	6.989	7.233	7.339	7.094	6.556	5.828
63	3.945	4.044	3.652	3.051	3.280	3.409	4.046	3.537	2.953	2.647	1.610

According to table 4.14 above, the results have revealed the competitiveness level of the textiles and textile articles subsectors in Morocco over the determined period. Additionally, the subsectors referred as to HS code 61 articles of apparel and clothing accessories, knitted or crocheted, HS code 62 articles of apparel and clothing accessories, not knitted or crocheted, and HS code 63 other made-up textile articles; sets; worn clothing and worn textile articles; rags have shown a comparative advantage as the RCA index values are above 1 in all years. In contrast, the remained subsectors have shown a comparative disadvantage as the RCA index values are below 1 except for the subsector referred as to HS code 58 special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery that had a comparative advantage in particular years. Furthermore, the articles of apparel and clothing accessories, not knitted or crocheted" was the more competitive among the textiles and textile articles subsectors.

Table 4.15: The RCA Index Values of Textiles and Textile Articles Subsectors in Turkey

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
50	0.150	0.141	0.115	0.127	0.108	0.125	0.125	0.180	0.140	0.163	0.757
51	1.787	1.663	1.617	1.526	1.481	1.341	1.080	1.254	1.213	0.769	0.808
52	3.293	3.652	3.175	3.195	3.420	3.442	3.643	3.372	3.480	3.204	3.196
53	0.753	0.766	0.715	0.714	0.583	0.540	0.767	0.837	1.046	0.966	1.047
54	4.032	3.950	3.744	3.928	3.903	3.843	3.711	3.603	3.621	3.049	3.330
55	4.389	4.294	4.242	3.942	3.867	4.060	4.164	4.408	4.573	3.921	4.129
56	1.991	2.340	2.567	2.527	2.581	2.712	2.891	2.842	3.327	3.092	3.313
57	11.964	13.815	15.685	15.959	15.950	15.101	14.191	15.143	15.793	16.951	17.873
58	5.459	5.511	5.209	5.323	4.924	4.336	4.458	4.329	4.078	3.413	3.879
59	1.693	1.827	1.471	1.539	1.455	1.447	1.379	1.320	1.351	1.197	1.170
60	6.367	6.484	6.217	5.993	5.660	4.933	5.128	4.940	4.776	4.391	4.898
61	5.723	5.391	4.810	4.762	4.820	4.661	4.589	4.425	4.360	3.997	4.035
62	3.640	3.476	3.393	3.398	3.215	3.097	3.070	2.965	3.062	3.041	3.286
63	5.033	5.119	4.053	4.601	4.302	3.547	3.610	3.557	3.532	3.282	2.114

According to table 4.15. above, the obtained results have revealed the competitiveness level of the textiles and textile articles subsectors in Turkey over the determined period. Additionally, most subsectors have shown a high level of competitiveness as the RCA index values have broadly exceeded 1 in all years except for the subsectors referred as to HS code 50 silk and HS code 53 other vegetable textile fibers; paper yarn and woven fabrics of paper yarn that had a comparative disadvantage in most years since the RCA index values were below 1 throughout the period. Furthermore, the carpets and other textile floor coverings was the more competitive among the textiles and textile articles subsectors in Turkey.

5. DISCUSSION AND CONCLUSION

In the art of economic warfare nowadays, international competitiveness is seen as an essential strategic objective set by countries in order to expand their economic welfare. However, this notion is not the result of an arithmetic formula, but instead, it reflects the ability of a company, a sector of activity, or all the economic actors of a country to face competition. As a result of globalization, rapid economic, technological, and political developments, not only competition has increased, but also a change has occurred in the factors that determine competition.

According to our study, the international competitiveness of Turkish and Moroccan vegetable products, textiles and textile articles, and products of the chemical or allied industries sectors are broadly analyzed based on the Revealed Comparative Advantage (RCA) and Revealed Trade Advantage (RTA) indexes between 2010 and 2020. In subsection 4.2.1, the international competitiveness of the three determined sectors was evaluated according to Balassa's RCA index. Regarding the vegetable products sector (Table 4.2.1.1), the RCA index values of both Turkey and Morocco have shown a comparative advantage throughout the whole period. However, Morocco has revealed high competitiveness compared to Turkey as the Moroccan RCA index values exceeded the Turkish RCA index values in all years. Although the Moroccan vegetable products sector's competitiveness has declined in some particular years, the country has maintained its high competitiveness, especially in the last three years where the RCA values have reached 3.577, 3.847, and 3.674 in 2018, 2019, and 2020, respectively. In contrast, the Turkish RCA index values have decreased throughout the determined period, moving from 2.222 in 2010 to 1.629 in 2020, revealing that the country disregards a noticeable menace that could negatively impact the Turkish vegetable products sector competitiveness in further years.

Regarding the textiles and textile articles sector results (Table 4.2.1.2), both countries have generally exhibited remarkable competitiveness as the RCA index values have broadly exceeded 1 in all years. Contrary to the vegetable products sector, Turkey has shown high competitiveness in the "textiles and textile articles" sector compared to Morocco as the Turkish RCA index values have overreached the Moroccan RCA index values throughout the determined period. Even though the Turkish RCA index values have experienced a mild decrease over the period, moving from 4.492 in 2010 to 3.585 in 2020, the country still maintains its high competitiveness in the textiles and textile articles sector. In contrast, the Moroccan textiles and textile articles sector has encountered a sharp decline as the RCA index values have passed from 4.403 in 2010 to 2.425 in 2020, designating that the country's competitiveness faces a real menace and the sector could probably lose once for all its international competitiveness over the years.

In addition to the two previous sectors, the products of the chemicals and allied industries sector has also been evaluated based on the Balassa's RCA index (Table 4.2.1.3). However, the results have shown that the Moroccan "products of the chemical and allied industries" sector has a comparative advantage since the RCA index values have exceeded 1 in all years. In contrast, the Turkish RCA index values have revealed that the country has a comparative disadvantage in the "products of the chemicals and allied industries" sector since the RCA index values were below 1 over the determined period. Therefore, Turkey have to find an efficient solution in order to improve the sector's competitiveness in further years as long as the country has the potential to fulfill it. Although the Moroccan RCA index values have slightly decrease after the two first years of the determined period, the country has remained more competitive than Turkey in the "products of chemicals and allied industries" sector.

In addition to the RCA index examination, our study has included an analysis of the RTA index in order to provide more reliability to the previous results. Thus, the evaluation has encompassed the analysis of the three determined sectors based on the RTA index, following the RCA index analysis pathways.

In subsection 4.2.2. above, the Moroccan and Turkish international competitiveness of the "vegetable products", "textiles and textile articles, and "products of the chemical or allied industries" sectors were evaluated based on the Vollrath's Revealed Trade Advantage (RTA) index between 2010 and 2020 in order to give more credibility to our study.

Regarding the "vegetable products" sector, Turkey and Morocco have shown a comparative advantage since the RTA index values were positive (above 0) throughout the period. Additionally, Turkey was more competitive than Morocco in 2010, 2011, 2012, and 2014 since its RTA index values have overreached the Moroccan RTA index values. In contrast, Morocco has increased its competitiveness and moved beyond Turkey in 2013, 2015, 2016, 2017, 2018, 2019, and 2020. However, the RTA index results have contradicted the RCA index in particular years due to the inclusion of the import data in the calculation. Despite the contradicted results in 2010, 2011 and 2013, Morocco has generally shown more competitiveness than Turkey in the vegetable products sector, denoting that the Turkish sector's competitiveness is constantly falling over the years, while the Moroccan competitiveness is increasing.

According to the "textiles and textile articles" sector results, Morocco and Turkey have shown a comparative advantage since the RTA index values were positive all over the period. However, the Turkish level of competitiveness was high throughout the whole period since the sector's RTA index value has remained above 3 in most years. In contrast, the Moroccan "textiles and textile articles" sector has harshly lost its competitiveness over the years as the RTA index value has passed from 3.386 in 2010 to 0.799 in 2020, indicating that the sector is facing real menace and could definitively lose its competitiveness in further years. Additionally, the RCA and RTA indexes results have exhibited similarities over the whole period, denoting that Turkey was more competitive than Morocco in the textiles and textile articles sector in all years even though the import data was included in the calculation.

Similar to the RCA index results, the RTA index values have shown that Morocco has a comparative advantage in the "products of the chemical or allied industries" sector over the determined period, whilst in Turkey, the sector has revealed a comparative disadvantage since the RTA index values were constantly negative (below 0) in all years. Despite the RTA index decline, Morocco has remained competitive compared to Turkey as long as the RTA index values were positive (above 1) in the whole period. In contrast, the Turkish results have indicated that the country is unable to increase its competitiveness regarding the "products of chemicals or allied industries" sector since the results have remained negative in all years.

In order to give a complete viewpoint, the international competitiveness of "vegetable products", "textiles and textile articles", and "products of chemicals or allied industries" subsectors was evaluated between 2010 and 2020 based on the Revealed Comparative Advantage (RCA) index to determine the subsectors that have a significant contribution to the international competitiveness of the three major sectors (Subsection 4.2.3).

After analyzing the results, it has become feasible to determine the competitiveness level of the three sectors of each country. Regarding the "vegetable products" sector, Morocco has shown a comparative advantage since the competitiveness level has significantly increased over the years, excluding the Covid-19 period. In contrast, even though the Turkish vegetable products sector has also shown a comparative advantage in all years, its competitiveness has harshly decreased, indicating that the country is facing a critical situation and could definitely lose its competitiveness in further years.

For the "products of the chemicals or allied industries" sector, Morocco has a comparative advantage over the whole period thanks to the "fertilizer" subsector, which has a very high competitiveness level. In contrast, the Turkish "products of chemicals or allied industries" sector has shown a comparative disadvantage over the years, denoting that the sector efficiency must be reviewed as quickly as possible. Therefore, Morocco has high competitiveness compared to Turkey in the "products of chemicals or allied industries" sector.

Concerning the "textiles and textile articles" sector, the Moroccan competitiveness has experienced a sharp decline over the period, denoting that the country is losing its competitiveness promptly in one of the most crucial sectors that have a significant contribution to the Moroccan economy. In contrast, Turkey has shown a comparative advantage in the "textiles and textile articles" sector, maintaining its high competitiveness level over the years. Consequently, the competitiveness gap has widened over the years, indicating that Turkey is largely more competitive than Morocco in the "textiles and textile articles" sector.

Turkey and Morocco are one of the leading countries in the Middle East and Northern Africa regions, respectively. However, both countries have shown a comparative advantage in particular sectors and a comparative disadvantage in others. Concerning Turkey, the country has to maintain its competitiveness power in the "textiles and textile articles" sector by always making its production adaptable and flexible with the international market and following the changing demand structure of the world. In contrast, the Turkish "vegetable products" sector is currently facing a real menace as its competitiveness has harshly declined in the recent years, denoting that the necessary measures have to be taken promptly. Thus, the country has to efficiently optimize the use of its agricultural land and reduce rural migration by providing subventions to farmers and encouraging them to increase their production. Regarding the "products of the chemicals or allied industries" sector, Turkey has to give more engagement to the sector, since the study has shown a comparative disadvantage throughout the last ten years, by using its known potential, implementing different strategies and carrying out scientific research in the field in order to increase the sector’s competitiveness.

In its turn, Morocco has shown a comparative advantage in the "vegetable products" and the "products of chemicals or allied industries" sectors. Owing to the "Green Morocco Plan" implemented by King Mohammed VI, the "vegetable products" sector competitiveness has experienced a significant increase over the years. However, the country has to maintain its competitiveness by assuring high quality, keeping an eye on competitors' strategies and increasing the incentives for the branding of companies operating in the relevant sector. Regarding the "products of the chemical and allied industries" sector, Morocco has extensively benefited from the fact that the country holds more than 70% of the world's reserves of phosphate rock to increase the sector's competitiveness. However, focusing only on the phosphate resource will not ensure the sector competitiveness, instead, it is recommended to focus simultaneously on other subsectors and improve their competitiveness by developing new strategies and investing in research and technological development. Additionally, even though it has a comparative advantage throughout the determined period, the Moroccan "textiles and textile articles" sector competitiveness has witnessed a significant decline in the last years. Accordingly, the country has to pay more attention to the sector’s competitiveness by setting clear targets, acquiring new textile technologies, and adopting new strategies to improve the quality, efficiency, and marketing in order to become more competitive in the textiles and textile articles sector. Despite the weakness in competitiveness in some particular sectors, both countries have generally shown significant improvements over the last years and dispose of the required potential to compete at the regional and international levels as long as the highlighted problems will be solved in the following years. However, further studies could be held based on the results of this present study in order to unveil the evolution of these three major sectors in Morocco and Turkey over the following years.

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