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# Assessment of Trends in the Comparative Advantage and Competitiveness of the Turkish Textile and Clothing Industry in the Enlarged EU Market

## Abstract

*In this paper, Turkey's comparative advantage and competitiveness in the textile and clothing industries are analysed by using Balassa's revealed comparative advantage index and Vollrath's indices of competitive advantage for the period of 1988-2008 in the enlarged EU market. The results revealed that Turkey has overall a strong comparative advantage and competitiveness in textile and clothing in the EU market. All competitiveness indices for the years 2005-2008 showed an increasing trend for the textile industry and a decreasing trend for clothing. The decrease in the competitiveness of clothing was observed more intensively in the enlarged EU market compared to that of the EU12. These findings can be thus interpreted: the Turkish textile industry responded well to the elimination of quotas, while the clothing sector has been more vulnerable to the inclusion of low-cost labour countries in the market since 2005.*

**Key words:** Turkish textile and clothing industry, EU market, comparative advantage, competitiveness, international trade.

## Introduction

The textile and clothing industries comprise two branches that play an important role in the economic progress of countries. Not only during the industrialisation process in the 18<sup>th</sup> & 19<sup>th</sup> centuries but also nowadays, textile and clothing industries continue to support the economic growth of developing countries which have a lack of capital but have an abundance of cheap labour [1]. Similar to most of the other developing countries, the Turkish textile and clothing industries have had a significant share of production and employment in the manufacturing industry as well as of export figures of the country. When these two industries had already completed their mature periods in most of the developed countries, textile and clothing industries were transferred to Turkey, wherein they progressed and developed. However, today the mature period has now taken over in the Turkish economy [2]. Globalisation and international economic conditions, such as increasing competition from low cost countries and the elimination of previous quotas and restrictions on textile and clothing compels Turkey to adapt to this competitive atmosphere in international trade [3]. In this study, the main objective is to examine where Turkey's comparative advantage and competitiveness in textile and clothing industries lie within the framework of international trade. Balassa's and Vollrath's indices were used to determine the comparative advantage and competitiveness of the Turkish textile and the clothing industries

compared to the EU, which is the major trade partner of Turkey. In order to assess the comparative advantage and competitiveness performance of the industries in Turkey and the EU explicitly, our study comprises the old EU member countries (EU12) and the enlarged EU (EU). In this context, the EU is corresponded to EU-12 for 1986 - 94, to EU-15 for 1995 - 2004, and EU-27 from 2007 onwards, considering the enlargement process.

## General review of the textile and clothing industries in Turkey

The history of textile production in Turkey has its roots back in the Ottoman period. Especially in the 16<sup>th</sup> and 17<sup>th</sup> centuries, textile production was carried out at an advanced level. Following the foundation of the Turkish Republic, textile production experienced a great increase between the years 1923 - 1962 [4]. The industry was further strengthened with Turkey's opening to foreign markets in 1980 [5]. Throughout the years, the advance in the textile industry has affected the clothing industry positively [4]. For 2008, textile and clothing products together constituted 7.1% and 10.3% of total Turkish merchandise exports respectively [6]. In 2008 Turkey ranked 7<sup>th</sup> in terms of textile exports and 4<sup>th</sup> in terms of clothing exports in the world, both with a 3.8% share according to WTO statistics, and was the second biggest exporter to

the EU for both textile and clothing exports, following China (*Figure 1*).

The extent of the EU's share of Turkish exports is significant. In the year 2009, 51% of Turkey's textile exports and 77% of Turkey's clothing exports were to the EU15. In terms of individual countries, Germany was the biggest importer of Turkish textile and clothing products with a share of 11% and 25%, respectively, followed by Italy and the UK. Seven of the top ten textile importers from Turkey are EU member countries, and nine out of the ten biggest importers of Turkish clothing are EU countries. Germany, the UK and Spain were the top three importers with 25%, 15%, and 8% shares, respectively [7]. Turkey is also among the top 10 textile importing countries from the EU [8].

## Comparative advantage and competitiveness

Competitiveness has been defined as "the ability of firms, industries, regions, nations or transnational groups to confront international competition and to secure the sustainability of a relatively high rate of return on the factors of production, and of a relatively high level of employment" according to the OECD's definition as given by [9]. In order to understand the competitiveness of nations in international trade, there has been a significant amount of research effort [10]. These theories include Adam Smith's Theory of Absolute Advantage [11], Ricardo's

Theory of Comparative Advantage [12], Heckscher-Ohlin Trade Theory of Factor Proportions [13], Posner's Technology Trade Gap Theory [14], Vernon's Product Life Cycle Theory [15] and Porter's Competitive Advantage of Nations Theory [16].

Unfortunately, analysis of the competitiveness using these theories is complicated due to difficulties in accessing and measuring of the data required [17]. As a practical alternative, the 'comparative advantage' notion has been developed. Comparative advantage can be defined as "the ability of a given economy to manufacture a product more efficiently than other countries do; it is reflected in the directions of export and import specialisations" [18]. Accordingly an analysis of trade data is used for the assessment of a nation's comparative advantage in a product, product group or industry. Two or three digit definitions from the Standard Industrial Trade Classification (SITC) are commonly used for analysing aggregate commodity groups. The imports, exports, and trade balance of countries are utilised. Analyses of this kind are also widely applied in the textile and clothing fields [17].

Among the analysis methods of competitiveness utilising international trade data, Balassa [19, 20] defined the measure 'Revealed Comparative Advantage' (RCA) for international trade competitiveness. RCA is the ratio between the export share of a given commodity or sector in a country and the export share of that commodity or industry in the global market, as shown in **Equation 1**:

$$RCA_{ij} = (X_{ij} / X_{it}) / (X_{nj} / X_{nt}) \quad (1)$$

where  $X$  is exports,  $i$  is the country,  $j$  is the commodity/industry,  $n$  is the world or a set of countries, and  $t$  is all product groups.

The RCA index determines whether the share of a selected product group constitutes a bigger share in that country's total exports compared to that of another country or a country group. A country has a comparative advantage in a commodity/industry when  $RCA > 1$ , and has a comparative disadvantage when  $RCA < 1$ .

However, the RCA index is not without any flaws. Its asymmetry is one of the problems with it [21]. If the country has a 'comparative disadvantage' the index ranges from zero to one, whereas

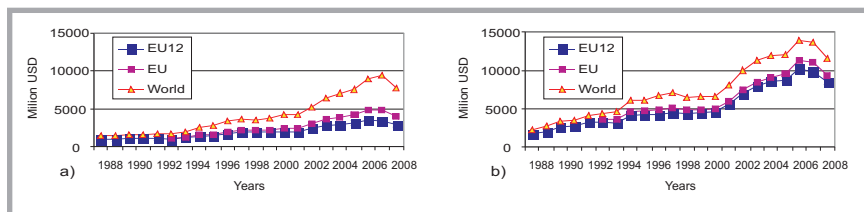


Figure 1. (a) Textile and (b) Clothing Exports of Turkey (million USD).

if it has a 'comparative' advantage, the index ranges from one to infinity [17]. The RCA has also been criticised for taking only the exports into consideration while ignoring the imports. Building on these, Vollrath [22] offered alternative measures of revealing a comparative advantage which include the effects of both the imports and exports of a country. Vollrath's indices aid in differentiating two countries' trade links and their economic association with the rest of the world. These alternative specifications of RCA are called the relative export advantage index (RXA), which equates to the Balassa index, its counterpart - the relative import advantage (RMA), the relative trade advantage index (RTA) and relative competitiveness index (RC), the formulas of which are given in **Equations 2 - 5**:

$$RXA_{ij} = (X_{ij} / X_{it}) / (X_{nj} / X_{nt}) \quad (2)$$

$$RMA_{ij} = (M_{ij} / M_{it}) / (M_{nj} / M_{nt}) \quad (3)$$

$$RTA_{ij} = RXA_{ij} - RMA_{ij} \quad (4)$$

$$RC_{ij} = \ln(RXA_{ij}) - \ln(RMA_{ij}) \quad (5)$$

where,  $X$  is the export,  $M$  is the import,  $i$  stands for the country,  $j$  for the commodity/industry,  $n$  for the world or a set of countries, and  $t$  for all product groups.

Positive values of the indices indicate a competitive/comparative advantage, while negative values indicate a competitive/comparative disadvantage. By expressing the latter two indices in a logarithmic form, symmetry is provided through the origin. Vollrath's RXA index is equivalent to the original Balassa's RCA index, but RXA eliminates the double-counting of a country and commodity in the world or set of countries. In the current research, double counting is not a problem for Turkey, because it is not yet a member of the EU. RTA or RC may be more preferential as they provide a better picture of the actual comparative advantage by including both export and import figures [23]. However, the index also has some limitations: it is very sen-

sitive to very small values of exports and imports [21, 24].

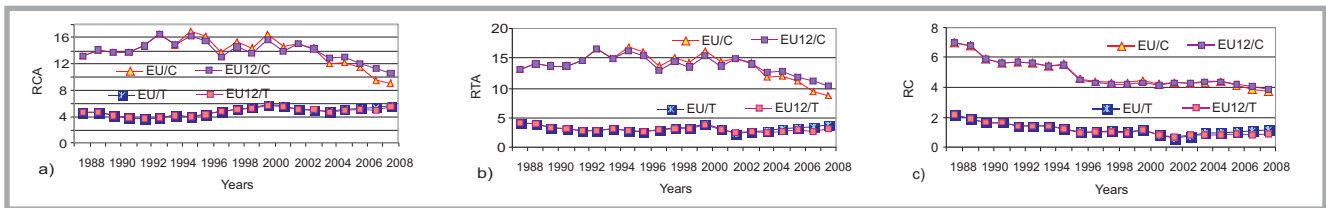
## Methodology

The analysis is based on the annual time series data on textile and clothing exports and imports, obtained from the United Nations (UN) trade statistics of the 2-digit Standard International Trade Classification (SITC) Revision 3 and World Trade Organization (WTO) Total Merchandise Trade over the period 1988 to 2008. This period was selected as being long enough to permit longer-term trends to be identified, and based on the availability of a complete data set for both of the product groups selected. From the 2-digit SITC Rev.3 listing, textile and clothing products were identified according to SITC65 (Textile Yarn, Fabrics, Made-Up Articles, and Related Products) and SITC84 (Articles of Apparel and Clothing Accessories), respectively.

## Application of Balassa's and Vollrath's Indices to Turkish Textiles and Clothing

In this section an empirical examination of Turkey's revealed comparative advantage in the textile and clothing industries is provided. The results reveal that Turkey has a strong comparative advantage in both textile and clothing in the whole of the EU. The indices indicate that Turkey's comparative advantage in the clothing industry is stronger than that in the textile industry. The findings reveal that not only old EU member countries (EU-12) but also new member states are significant trade partners of Turkey in textile and clothing products.

The initial period of our study indicates the post liberalisation period of Turkey. In the frame work of „January 24 Decisions” in 1980, Turkey switched its economic policy from import substituting industrialisation to export-led growth strategy. In addition to various supportive components and arrangements directed to the foreign trade liberalisation, Turkey



**Figure 2.** Indices for Comparative Advantage and Competitiveness of Turkish Textile and Clothing Industries (a) Balassa's RCA index, (b) Vollrath's RTA index, (c) RC index. T: Textiles, C: Clothing. **Note:** RTA values give very close values to those of the relative export advantage RXA (=RCA) due to the very low values of RMA (relative import advantage).

aimed to accelerate its export performance by devaluation of the TL (Turkish Liras- the Turkish currency) [2]. In this respect, both of the sectors indicated a revealed comparative advantage at the end of 80's. During this period, the textile and clothing sectors were two of the industries where increases in foreign and domestic investments took place. However, in 1994, Turkey experienced an economic crisis with the recession in the world economy and gulf crisis. This may have indicated a decrease in the revealed comparative advantage and competitiveness of Turkey in the clothing sector, which was marked by a decrease in all indices for textile products for the 1988 - 1993 time period, as seen in *Figure 2*.

In the middle of the 90's, the other most significant phenomenon in Turkey's foreign trade policy was the establishment of 'the Customs Union' between the EU and Turkey in 1996. As a result, various regulations in import and export regimes and laws were made in order to comply with EU norms. The index results present an increase in Turkey's comparative advantage in the textile sector after the customs union agreement in 1996 and EU's 3<sup>rd</sup> enlargement in 1995. The enlargement of the EU to fifteen member countries had a positive contribution to the comparative advantage of textile products. Especially after the customs union agreement and the enlargement, the revealed comparative advantage and competitiveness of textile industries increased until the year 2000.

However, after 2000 the results show the descending comparative advantage of Turkey for both sectors. In 2000, not only external economic factors, such as the development of euro/dollar parity against the euro in international markets and oil crises, but also domestic factors such as the implementation of the exchange rate policy, which was in line with the inflation target, affected both sectors. After the economic crises in January 2001,

Turkey changed her exchange rate system from a currency peg to the floating exchange rate system. However, this change caused the appreciation of the TL [25]. The diminishing effect of the revealed comparative advantage of Turkey in textile products in the EU market continued until 2005. During the same period, in May 2004, the EU's largest enlargement occurred, with the accession of 10 new countries; thus one may argue that the 5<sup>th</sup> enlargement of EU contributed to the decrease in Turkey's revealed comparative advantage in the textile and clothing industries 2005 is a significant date for the textile and clothing industry because all textile and clothing quotas and restrictions were eliminated all over the world by the WTO. In 1974 a system of trade restrictions were introduced by GATT (now WTO) members, the so-called Multifiber Trade Arrangement, in order to protect domestic textile industries. [26,27]. The members of GATT decided to lift the quotas on textile and clothing imports over a period of 10 years, from January 1, 1995 to January 1, 2005. When China, with the cheapest labour and being the largest textile and clothing producer and exporter, joined the WTO in 2001, quotas on Chinese textile and clothing exports to the EU were to be lifted as well [3]. Consequently a rapid increase occurred in Chinese exports to the EU with the elimination of the quotas. Similar to most of the exporter countries, Turkey was concerned about losing its competitiveness in the EU market. In these global situations, Turkey's textile and clothing exports have continued to increase in value, but not in quantity.

In order to support the Turkish textile and clothing industry, the Fashion and Textile Cluster Project was implemented between the years 2005 - 2007. The Project, financed by pre-accession funds of the EU with a 13 million € budget, aimed to increase the international competitiveness of SMEs (Small and Medium size Enterprises) in the Turkish textile

and clothing sectors [28]. Before this, the world's first and only state-funded trademark incentive and support program Turquality™ became operative in August 28, 2003. This program aimed to strengthen the competitiveness of Turkish firms by encouraging the creation of global trademarks. Both Balassa's and Vollrath's results indicate that Turkey's comparative advantage and competitiveness in textile products improved slightly from 2005 to 2008 both in the EU-12 and the enlarged EU market. However, a permanent decrease in clothing products could not be avoided even with these precautions, the reason for which might be the competition from low-cost countries in the EU market. The clothing industry is more labor-intensive compared to the textile sector, which is relatively capital-intensive [17].

For clothing products, both indices indicate that Turkey holds a significant comparative advantage and competitiveness, but this trend is in decline. It can be noticed that after the 5<sup>th</sup> enlargement of the EU in 2004, the indices indicate that Turkey's comparative advantage and competitiveness was higher for the EU-12 compared to that in the whole EU. Similarly, as seen in *Figure 2*, the decrease in the competitiveness of Turkish clothing products in 2004-2008 was felt more intensively in the EU market compared to that in the EU12, which might be due to the fact that the average income in the EU is lower than that of the EU12. Thus cost efficiency may be a more important driver in the enlarged EU market compared to that in the EU12. Especially in 2008 was a significant decrease observed, which might be due to the global economic crisis experienced in August 2008, which spread from the USA throughout the world.

## ■ Summary and conclusions

Turkey's comparative advantage and competitiveness with respect to the EU

market in textile and clothing products were examined by employing Balassa's and Vollrath's indices for the period of 1988 and 2008. All indices present that Turkey had a strong revealed comparative advantage and competitiveness in textiles, with those of clothing products being even stronger for the entire period examined.

1. Turkey has experienced year to year variations of competitiveness indices over the past three decades for textile and clothing products. The comparative advantage in textile products indicated a significant increase from 1995 to 2000, but after a slow down period, a rising trend was observed after 2005 both in the EU-12 and enlarged EU market. The six rounds of enlargement of the EU made a positive contribution to Turkey's competitiveness in textile products.
2. The year to year variations in the competitiveness indices of clothing were higher than those of textiles. Contrary to the textile industry, none of the supports and regulation efforts has been able to boost Turkey's comparative advantage and competitiveness in clothing products since 2005. High values of indices indicate a significant export market share in the EU textile market. Furthermore, except the 4th enlargement in 1995, other enlargements of the EU in 2004 (EU-24) and 2007 (EU-27) did not have a positive impact on Turkey's trade in the clothing industry. The decline of the competitive indices was felt more intensively in the whole EU compared to that in the EU12 - the 12 old member countries.
3. Increasing competition from low cost countries, the elimination of quotas and restrictions on textile and clothing by the WTO as well as a strong trend in real currency appreciation have severely threatened Turkey's comparative advantage and competitiveness. The comparative advantage of these sectors, especially clothing, has migrated to countries with a cheap labor force.
4. The Turkish textile and clothing sector should also cope with these circumstances by accelerating productivity gains, branding, specialisation, tending towards the production of higher value-added products by innovation, R&D activities, (fashion) design, and keeping wage growth in line with profitability

5. Furthermore, Turkey should take advantage of its geographical proximity to the EU market, the established textile and clothing infrastructure, the presence of a low-skilled labour force, and raw material supply.



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