



## Revealed Comparative Advantage of Turkish Cotton Sector

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### Abstract

Cotton which is the main raw material of the textile industry occupies an important place in Turkey's agriculture and economy. Cotton is a strategic product for the national economy. It provides income, employment and other contributions to economic development. The aim of this study is to determine the competitiveness of Turkey's cotton sector. The study calculated Balassa's Revealed Comparative Advantage (RCA) index and Revealed Symmetric Comparative Advantage (RSCA) index. The data were obtained from database INTRACEN. According to the results, Turkey has a comparative advantage in cotton sector.

**Keywords:** Competitiveness, cotton, RCA, Turkey.

### Introduction

Agricultural sector has a very important place in Turkey's economy. Agricultural sector is the largest employer sector in Turkey and it has a significant contribution to Gross Domestic Product (GDP), exports and rural development<sup>1</sup>. Agricultural sector represents 8.3 percent of the Gross Domestic Product (GDP) and the sector provides employment 24 percent of the total labor force<sup>2</sup>.

Today, Turkey is the 7<sup>th</sup> largest agricultural producer and exporter in the world. Turkey's agricultural exports estimated at \$ 17 billion in 2013 and agriculture's share in Turkey's export is approximately 10-11%. Turkey has a huge agricultural potential because it has a very suitable ecologic conditions and land resources. The main agricultural products are cotton, grapes, ground nuts, and apricots<sup>3</sup>. One of the most important agricultural products in Turkey is cotton. Turkey is one of the largest cotton producer in the world, with output 846.000 tons in 2014. Total area devoted to cotton cultivation in 2014 was estimated at 468,000 hectares. According to the TURKSTAT in 2013, the value of cotton exported by Turkey was \$1.9 billion.

The main aim of this study is to determine the competitiveness of Turkey's cotton sector. We examined competitiveness of Turkey's cotton sector for the period 2001-2013. This study used Balassa's Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) indexes.

### Methodology

The study based on secondary data. In study export data for the period 2001-2013 was used. The data was obtained from the International Trade Centre (ITC) database. The Harmonized System (HS 2-digit) in the study used.

In this study used next indicators:

**Revealed Comparative Advantage (RCA) index:** Revealed comparative advantage (RCA) index is often used to measure the country's international competitiveness in certain products or industries. The RCA index was formulated by Bela Balassa in 1965 and since then it is known as the index of Balassa in the literature. RCA index is used in many empirical studies to determine a country's strong sectors<sup>4</sup>. The Revealed Comparative Advantage (Balassa's RCA) index is calculated as follows<sup>5</sup>:

$$RCA_{ij} = \left[ \left( \frac{X_{ij}}{X_i} \right) \div \left( \frac{X_{iw}}{X_w} \right) \right]$$

Where;

$RCA_{ij}$  = revealed comparative advantage of commodity  $j$  from country  $i$

$X_{ij}$  = exports of country  $i$  of commodity  $j$

$X_i$  = total exports of country  $i$

$X_{iw}$  = world exports of commodity  $j$

$X_w$  = total world exports

The values of the index vary from 0 to infinity ( $0 < RCA_{ij} \leq \infty$ ). The country has a comparative advantage in  $RCA_{ij} > 1$ . If  $RCA_{ij} < 1$ , it is considered that the country has a comparative disadvantage in certain group of products or industries.

**Revealed Symmetric Comparative Advantage (RSCA) index:** RCA index is asymmetric, because it takes a value between zero and infinity. For solving this problem, Dalum et al. (1998) proposed Revealed Symmetric Comparative Advantage index for calculation of comparative advantage. RSCA is formulated as follows<sup>6</sup>:

$$RSCA_{ij} = (RCA_{ij} - 1) / (RCA_{ij} + 1)$$

Where, RCA value of the Balassa index for product  $j$  in Turkey. RSCA ranges between -1 and +1. Its positive value indicates

comparative advantage of the country in export of the commodity and vice versa<sup>7</sup>.

### Results and Discussion

Turkey is an important cotton producer and also exporter. Turkey's cotton exports have more than doubled between 2001 and 2013. During 2001-2013, Turkey's cotton exports grew at an average annual rate of 6-7 percent, rising from \$840 million to \$1 928 million. But the share of cotton exports in total agricultural exports declined from %19 in 2001 to %10 in 2013. The EU and North African countries are largest export markets for Turkish cotton.

Turkey is a major importer of cotton. Since the 2000's, Turkey's imports of cotton have increased, because production cannot provide domestic consumption. Cotton is the main raw material for the Turkish textile industry. Turkey imports of cotton

increased during 2001-2013. In the year 2013, cotton import value was 2.9 billion US dollars and increased by 215 percent over the same period. The USA, Greece and Central Asian countries are the leading cotton suppliers to the Turkish market<sup>8</sup>.

In this study we analyzed the comparative advantage of Turkey's cotton exports. RCA and RSCA indexes for Turkey cotton exports are given table-1. The indexes were calculated for each year between 2001 and 2013. According to the analysis the Balassa's revealed comparative advantage (RCA) index is bigger than one ( $RCA > 1$ ). RSCA also has a positive value. This means that Turkey has a comparative advantage in cotton sector. According to the results the comparative advantage of Turkey's cotton sector has declined during the period 2001-2013. The RCA index has decreased from 4.55 in 2001 to 3.36 in 2013. The RSCA index also declined from 0.64 in 2001 to 0.54 in 2013.

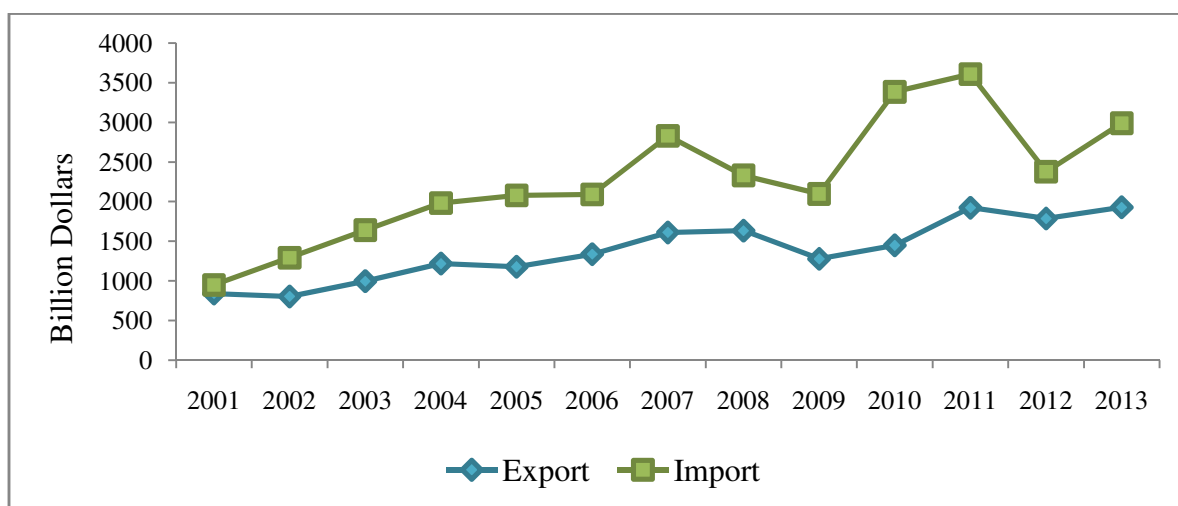


Figure-1  
 Evolution of cotton export and import of Turkey

Table-1  
 Comparative Advantage Indexes of Turkey's Cotton Export

Year	RCA	RSCA
2001	4.55	0.64
2002	3.87	0.59
2003	3.65	0.57
2004	3.61	0.57
2005	3.52	0.56
2006	3.67	0.57
2007	4.00	0.60
2008	3.78	0.58
2009	3.60	0.57
2010	3.28	0.53
2011	3.63	0.57
2012	3.16	0.52
2013	3.36	0.54

Source: Calculated by author

## Conclusion

Cotton is one of the most important agricultural crops in Turkey. Cotton has a special place in Turkish economy. It provides income, employment and other contributions to economic development. Turkey has a significant potential in the global cotton trade. Turkey's cotton exports increased 130 percent during 2001-2013. In this study we analyzed the comparative advantage of cotton sector in Turkey. RCA and RSCA indexes used to analyze of the comparative advantage of Turkish cotton sector during the period 2001-2013. The findings clearly showed that Turkey has comparative advantage in cotton, but the competitiveness of cotton was decreasing in during period. The results show both the RCA and RSCA indices decreased steadily over the past decade. Reduce the costs will help to increase the exports of the cotton sector. Further lower costs will increase the competitiveness of cotton sector. Higher exports will also help to increase the economic growth.

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