

A STUDY OF THE REVEALED COMPARATIVE ADVANTAGE IN THE TEXTILE AND CLOTHING INDUSTRIES BETWEEN IRAN AND TURKEY

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Abstract:

The paper investigates revealed comparative advantage (RCA) and trade map index (TM) for the textile and clothing industries between Iran and Turkey during 2001-2009. The results of the RCA indicated that, Iran recorded a relatively weak comparative advantage in the export of textile industry and no comparative advantage in the clothing industry for a short period from 2001 to 2003, while Turkey recorded a strong comparative advantage in both textile and clothing industries during the whole period. Given the fact that the two counties are neighbors and both have access to each other's markets makes us conclude that Iranian textile and clothing industries will be the net loser. Estimating TM index illustrated that in both textile and clothing industries the world market have been declining. Based on the TM index, while Iran has been a loser, in contrast, Turkey has been a winner in both industries. Thus, Iran needs better comprehension of the world market and requires taking necessary steps through marketing, adoption of new technology and quality improvement in order to assert its place in the world market of the textile and clothing industry.

Keywords: *Textile and clothing export, revealed comparative advantage, trade mapping*

JEL: L67, O53, F14, F10

1. INTRODUCTION

Promoting export based on comparative advantage makes domestic production units plan for the world competitive markets. Comparative advantage has many applications and it has efficient and real law as stressed by Paul Samuelson. The concept of advantage is one of the main foundations of the international trade policies, but the concept has been modified due to the evolution in the world trade conditions. Comparative advantage, which is the modified form of absolute advantage, was transformed to dynamic comparative advantage and eventually to competitive advantage in order to explain the reality of the trade between the countries.

Competition is the most important element of globalization. Identifying the comparative advantage of each country in different economic areas and comparing economic indices with those of other countries to know close rivals are the most important steps to increase the competitiveness of each country. Throughout this process, the competition goes beyond the regional and national levels towards the global level and inefficient markets are forced to give up the competition. So, advantage measuring indices of the commercial productions of countries gain importance.

Textile and clothing industries have seen many changes and rapid growth in the past decade; this indicates the existence of a growing demand for various products of textile and clothing industries. Since clothing after food and housing has been the third in the list of human needs, it has a significant role in any country's GDP and employment. Textile industry has a long history in Iran; it has a great share in providing domestic needs and employment. It comprises 4% of the added value in Iran and 10% of the total export of the country. While foreign investment in this industry is low compared to the other sectors, it has a large job creating capability compared to other industry; in fact 18% of the employment in the manufacturing sector belong to the clothing and textile industry (Roshan, 2011). Due to the employment capacity in the clothing industry, the study of the advantage of the textile and clothing industries in Iran is important from different perspectives: First, the weak areas of domestic industries need to be identified and obstacles need to be removed. Second, identifying new markets and making the domestic

production units compatible with foreign taste is a real need. Finally, learning from the experience of a successful competing country leads to more opportunities in world markets. So, the paper examines textile and clothing industries in Iran and Turkey.

2. THEORITICAL BASIS

Theories of international trade that have emerged from the discussions of Adam Smith (1774) and David Ricardo (1817) could be classified into traditional and modern theories. Traditional theories of international trade, emphasizing on factors of production ratio between countries were doubted by Leontief after worldwide II. He provided evidence from the trade pattern of US and other countries that questioned relevance of traditional theories and led to the rise of new theories like Neo-factor and Neo-Technology theories. Incorporating factors such as human capital, the new theories claimed to remove the deficiency of traditional theories. Theories of new technology started from incomplete competition and increased the descriptive power of the international trade theory by introducing discussions like technology gap and technology advantage and researchers such as Posner (1961), Vernon (1966), Krugman (1987) and Porter (1990) elaborated the subject. Table 1 summarizes the main classifications of traditional and modern international theories.

Table1. Summary of the International Trade Theories

Traditional Theories:			
Theory	Theorist	Summary of Theory	Basic Principle
Absolute advantage	Smith (1776)	Each country is specialized in the production and export of goods than can produce more efficiently.	
Comparative advantage	Ricardo (1817)	A country lacking absolute advantage, can be specialized in the production and export of goods with less absolute disadvantage	
Factor abundance	Heckscher (1919) Ohelin (1933)	Differences in the factor intensity of constant returns to scale production functions and differences in the factor endowments of the two countries lead to trade between countries	
Opportunity cost	Haberler (1936)	Each country produces and exports goods that need less opportunity cost	
Modern Theories:			
Similarity of Preferences	Linder (1961)	Taste and economies of scale have more important role in determining the advantage & description of industrial goods trade	
Technology	Posner	Technology gap is the main factor in determining of trade	

advantage	(1961)	advantage
Production life cycle	Vernon (1966)	Vernon develops the product life cycle model to explain trade, conceptualizing it in terms of two factors: the nature of the product; and the development level of the country. He suggests three stages of a “product life cycle”: the new product, the mature product and the standardized product stages
Dynamic comparative advantage	Krugman (1991)	Krugman develops a general equilibrium model to explain the spatial concentration of economic activities by focusing on three factors: increasing returns, transport costs and the demand for manufacturing goods. Efficiency in production and skill and expertise are some factors that change Comparative advantage
Competitive advantage	Porter (1990)	Competitive advantage occurs when an organization acquires or develops an attribute or combination of attributes that allows it to outperform its competitors. These attributes can include access to natural resources, such as high grade ores or inexpensive power, or access to highly trained and skilled personnel human resources

Source: (Hossein, 2007)

3. LITERATURE REVIEW

Salimifar & Mirzaei Khalil Abadi (2002) studied the comparative advantage of the production and export of pistachio in Iran. To do so, they used the RCA and DRC indices respectively to calculate the comparative advantage of the export and production. The results of their study showed the existence of a comparative advantage both in the production and export of the pistachio in Iran.

Utkulu, U. and Seymen, D (2004) studied the comparative advantage and the competitiveness of Turkey’s export in various economic sectors in relation to European union. In this study Balassa method was used for calculating the comparative advantage. The results showed that if the stable consumption of the goods continued between Turkey and European Union, it would have a significant impact on the country’s comparative advantage and competitiveness.

Azizi, I & yazdani, S (2006) investigated Iran’s export market of apples focusing on the comparative advantage. Their investigations based on RSCA and RCA showed that apples in Iran had export comparative advantage, but its competitive advantage was declined.

Ashrafi, M & Karbasi, A & Sadrolasheafi, S.M (2007) Computed the comparative advantage of the raisin export utilizing RSCA and RCA indices. The obtained results illustrated that during the examined period (1961-2001) the export of raisin in Iran had comparative advantage, and the status of this product became better in

the export market of Iran after Iran's revolution. Moreover, the degree of certainty about continuing presence of Iran in the world market increased in the mentioned period.

Hoseini (2007) applied RCA and TM for the leather industry of Iran. The results of this study showed that despite the growth of Iran's leather export during the first three years (1999-2002), RCA index was smaller than the unit and Iran lacked the export advantage, and only in 2003 this index changed to advantage. TM index showed that while Iran was among the winners of the leather market, its share has been declining during the recent years.

Di Maio, M. and Tamagn, F (2007) focusing on the analysis of RCA index during the period of 1980-2000 for Italy, came to the conclusion that the speed of world trade in Italy was changing during two investigated decades and increasingly was becoming more competitive and specialized in goods production.

According to Wenwu, Z (2011), USA is the largest clothing importing country in the world, as developing countries such as; China and Mexico compete intensively on the USA clothing market. He calculated and compared market share (MS), revealed comparative advantage index (RCA) and net trade balance (NTB) of China and Mexico's clothing industry on the USA market from 1999 to 2008. The results indicated that China's competitive advantage is catching up with and exceeding that of Mexico's in this period.

Jiang, A. Q. and Zhang, R (2011) analyzed developing situation of Shaoxing textile industry. Three export evaluation indexes (international market share, trade competitiveness and revealed comparative advantage) were selected to analyze international competitiveness of Shaoxing textile and clothing. At last, it was proved that Shaoxing textile and clothing has very strong competitive advantage. Several suggestions have been proposed to strengthen this competitiveness.

4. METHODOLOGY

There are two main approaches to the comparative advantage measuring index; traditional and modern. The indices like domestic resource cost (DRC) and revealed comparative advantage (RCA) belong to the traditional approach and trade mapping (TM) and constant market share analysis (CMS) are related to the modern approach. Given the available data in this research (2002-2009), one traditional index (RCA) and one modern index (TM) were investigated to compare the textile and clothing industry in Iran and Turkey.

4.1. The evolved index of Balassa

Thomas Vollrath (1991) in his article, developed Balassa's criteria with regard to all countries and goods for expressing global comparative advantage, and proposed the following:

Where, x_a^i is the value of the product 'a' exported by country, 'i'. x_t^i , is the total value of country 'i' export. x_a^w Is the value of global export for the product 'a' and x_t^w stand for the total value of global export.

The criteria is that; the RCA greater than one indicates the existence of comparative advantage for the export of product 'a' for country 'i' and the RCA less than one indicates the absence of comparative advantage.

4.2. Trade mapping index (TM)

Trade program introduced by the World Trade Center for the analysis of goods export application depends on the information obtained from the sustainable market share. In this analysis, the growth of the product 'i' export for the country 'i' (δ_{ij}) was compared with the growth of the same product's import and the growth of the world total import(r). Trade planning is divided into four quadrants that are classified based on the export products in the winners' and losers' part with respect to their placement in the growing or declining markets.

Table 2. The general form of trade mapping

	Characteristics of each quadrant
First quadrant: winners in the growing markets	$\delta_{ij} > r_i > r$
Second quadrant: losers in the growing markets	$r_i > r < \delta_{ij}$
Third quadrant: losers in the declining markets	$\delta_{ij} < r_i < r$
Forth quadrant: winners in the declining markets	$\delta_{ij} > r_i, r_i < r$

This index has larger applicability compared to the previous indices and is more important, particularly when the country size matters (Greenaway & Milner, 1993).

4.3. Data collection

In order to calculate the given indices in the Textile and Clothing Industries, the statistics related to the amount of export and import in both industries in Iran, Turkey and the world and also the total amount of export and import in Iran, Turkey and the world were needed. The following data was extracted from the given statistics in the economic reports of world Trade organization (WTO).

5. ANALYSIS AND RESULTS

5.1. Revealed Comparative Advantage (RCA)

Revealed Comparative advantage index for both Textile and Clothing industries was computed using the given data from the reports of world Trade organization, based on evolved index of Balassa for the time period between 2001 and 2009 for both countries. Moreover, after the Computation and assessment of their growth rates for different years, the results were given in Table 3

It is worth mentioning that although Iran had an ascending trend in the value of the textile export during most of the studied years except 2006 and 2009, the results of RCA Computation presented in Table 3 show that in the Textile industry, Iran had export Comparative advantage only during the period of 2001 till 2003, which means RCA is larger than the unit. But gradually this advantage changed to the lack of advantage and the index became smaller than the unit. This change could have various reasons like lack of the availability of the raw material with high quality and cheap cost during some years, delayed export subsidies payment, depreciated production machines, lack of efficient investment in important branches like marketing and production, production of outdated goods, presence of powerful competitors such as Turkey and China and etc. On the other hands, this lack of advantage during the mentioned period had some fluctuations; in a way the growth rate of advantage for the Textile industry was decreasing and it was negative for most of the years. However, Turkey had much more powerful and stable advantage in its Textile industry during the examined period. The observable reasons for the Turkey' success could be its active presence in the global markets and vast advertisement by satellite and thus forming regional taste in a way that it became possible for them to penetrate into the domestic markets of their rivals like Iran. It was a process that couldn't be possible without the multidimensional support of Turkey's government from domestic production. Comparing the performance of the given two countries by means of ratio (RCA Iran/RCA Turkey) during a ten- year period locating RCA of Turkey in the numerator and RCA of Iran in the denominator showed that this index had a growth of 71% which could be result of the efficient performance of Turkey in reaching the regional markets like Iran. Even the domestic markets of Iran had a role as of a competitor in losing the Textile Comparative advantage in Iran. Regarding the Clothing industry in Iran, the results showed that it lacked advantage during the whole period, the reasons for which could be low production

of the goods with Comparative value at the level of global markets, lack of identification and introduction of well-known Iranian brands at the international level and etc. The statistics of table 4 shows that in 2008, only 2-million – dollar clothing was imported into the country via customs that can't provide even a retail trade department in a metropolitan city like Tabriz with clothes. This fact illustrates high volume of clothing trafficking in Iran stemming from tariffs of %90 for clothing import and lack support and incentives for domestic producers. This fact has made Iran's market a profitable place for smuggling of clothing. This research believes that smuggling goods has been one of the main factors having impact on the dropping of comparative advantage of Iran's clothing industry from 2003 till now. The 160% growth of comparative index (RCA, Iran/RCA, and Turkey) in Clothing industry based on the mentioned reasons illustrates Turkey's comparative advantage as an alternative for Iran's in clothing industry.

Table 3 Revealed Comparative advantage (RCA) of Textile Industry in Iran and Turkey

year	RCA of Iran's textile industry	growth rate	RCA of Turkey's textile industry	growth rate
2001	1.13	-	5.3	-
2002	1.26	0.11	5.0	-0.06
2003	1.04	-0.16	4.9	-0.01
2004	0.85	-0.12	4.8	-0.01
2005	0.77	-0.09	5.0	0.03
2006	0.55	-0.28	4.9	-0.01
2007	0.64	0.16	4.9	-0.005
2008	0.58	-0.09	4.6	-0.06
2009	0.63	0.10	4.5	-0.02
2010	0.60	0.05	4.8	0.06

Source: Results of the research

Table 4: Revealed Comparative advantage of clothing industry in Iran and Turkey

year	RCA of Iran's Clothing industry	growth rate	RCA of Turkey's Clothing industry	growth rate
2001	0.200	-	6.74	-
2002	0.240	0.20	7.14	0.05
2003	0.210	-0.12	6.86	-0.04
2004	0.128	-0.39	6.28	-0.08
2005	0.107	-0.16	6.11	-0.02
2006	0.068	-0.33	5.54	-0.09

2007	0.094	0.20	5.24	-0.05
2008	0.094	0.004	4.56	-0.12
2009	0.091	-0.03	4.50	-0.02
2010	0.055	0.06	4.86	0.08

Source: the research findings

5.2. Trade Mapping (TM)

Trade mapping for textile and clothing industries using the available data by the World Trade Organization was computed from 2002 to 2009. The analysis of TM index showed that the global market of Textile industry was declining during most of recent years. The status of Textile industry in Iran based on the given index illuminated that Iran was the loser of the declining market in 2002, 2003, 2006, and 2009, the loser of the growing market in 2008, and the winner of the declining market 4 in- between years. Iran's market had some fluctuations during the studied period so, it can be inferred this market was declining on average and Iran left the market and became a loser. The reasons for this as mentioned above were depreciated production machines, lack of investment in important branches like marketing and production, lack of updated products, and etc. The analysis of this index illustrated that the global market of Clothing was declining during the past years. The status of Iran in Clothing industry based on the given index indicated that Iran was the winner of the declining market in in 2002, the loser of the declining market in 2003 and 2008,, , and the winner of the growing market in 2009. Although Iran's condition had fluctuation during this period, it was possible to conclude that on average, the market was declining and Iran was the loser. The analysis of the status of the Textile and Clothing industries in Turkey using TM index, summarized in Table 5 and Table 6 showed that on average Turkey was the winner of both global markets. Moreover, growing and declining of these two industries in Turkey were more in line with the global fluctuations. In other words, Turkish economy was influential and influenced in both areas at the global level, while incompatibility of the Iran's industries with the global fluctuations introduced Iran's targeted markets as the local and regional ones that easily could be replaced by enterprises of the rival countries like Turkey.

Table 5: TM index of the Textile industry

year	the growth of the Textile export in Iran and Turkey	the growth of the total import of the	the growth of the Textile import of the	evaluation of the global	evaluation of Iran and Turkey
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	(percent)	world(percent)	world	market		
2002	Iran	7	4	3.4	growing market	Winner
	Turkish	7.6				Winner
2003	Iran	10	16	12	declining market	Loser
	Turkish	24				Winner
2004	Iran	-3	21	5.12	declining market	Loser
	Turkish	22				Winner
2005	Iran	2.1	13	4	declining market	Loser
	Turkish	10				Winner
2006	Iran	-9.1	5.14	6.7	declining market	Loser
	Turkish	7.3				Loser
2007	Iran	25	15	9	declining market	Winner
	Turkish	17				Winner
2008	Iran	2.4	5.15	6.4	declining market	Loser
	Turkish	5				Winner
2009	Iran	-17	-23	-15	growing market	Loser
	Turkish	-8.17				Loser
2010	Iran	20	21	19	declining market	Winner
	Turkish	16				Loser
	Iran	8	7.10	4.6	declining market	Loser
	Turkish	7.9				Winner

Source: the research findings

Table 6: TM index of the Clothing industry

year	the growth of the Clothing export in Iran and Turkey (percent)	the growth of the total import of the world(percent)	the growth of the Textile port of the world	evaluation of the global market	evaluation of Iran and Turkey	
2002	Iran	12	4	3	declining market	Winner
	Turkish	7.21				Winner
2003	Iran	25	16	13	declining market	Winner
	Turkish	23				Winner
2004	Iran	-20	21	12	declining market	Loser
	Turkish	3.12				Winner
2005	Iran	-10	13	5	declining market	Loser
	Turkish	7.5				Winner
2006	Iran	-18	5.14	15	declining market	Loser
	Turkish	8.1				Loser
2007	Iran	44	15	12	declining market	Winner
	Turkish	15				Winner
2008	Iran	21	5.15	1.5	declining	Winner

	Turkish	-2			market	Loser
2009	Iran	-25	-23	-13	growing	Loser
	Turkish	-15			market	Loser
2010	Iran	-28	21	11	declining	Loser
	Turkish	10			market	Loser
	Iran	1.0	7.10	5.6	declining	Loser
	Turkish	8			market	Winner

Source: the research findings

7. CONCLUSION

In the percent research, revealed comparative advantage (RCA) and trade mapping (TM) for the textile and clothing industries of Iran were used from 2011 till 2010. Regarding the given calculations, the comparative advantage of textile industry in Iran faced some fluctuations experiencing a slight advantage in first 3 years but lacked advantage during the other years studied. Considering clothing industry, Iran lacked advantage that was intensified during some years. These fluctuations should be noticed by authorities, since the percent fluctuations during the studied years showed lack of specialized policies. With respect to the significant role of the textile and clothing industries in employment, Iran has not been able to find an acceptable status in the world markets. It can be said that there hasn't been an efficient marketing system for these two related industries. Also, some of the present obstacles for the textile and clothing industries of Iran consist of:

1. Lack of access to cheap and high quality raw materials.
2. Lack of punctual paying of export subsidies.
3. Depreciated production machines.
4. Lack of efficient investment in the important branches of marketing and production.
5. Lack of updated products.
6. Presence of the powerful competitors like China and Turkey

Considering the trade mapping (TM) index and descending growth of the textile import in the world, Iran was a winner during some years, but on average, it was the loser of the declining markets. Iran was the winner of the clothing market during some years. As a result, the research suggests that authorities should not only examine the quality and competition power of the products, but also investigate the new permeable markets, in order to maintain Iran's share in the world markets. Moreover, they need to devise influential solutions for the multidimensional growth of the export of the textile industry, particularly the clothing industry.

Based on the RCA index, Turkey benefited from relatively powerful comparative advantage in both textile and clothing industries during the whole period. However, TM index in this country had some fluctuations, since the textile and clothing industries were the losers of the market during some years. On the whole, Turkey was the winner of the market in both industries on average. The reason of the fluctuations could be the presence of powerful competitors for Turkey. Finally, it can be said that the Turkish government had an increasing support for both of these important economical industries and Turkey was the winner of the market during the whole period on average.

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