

The Empirical Research of the Competitiveness Based on the Informationization of China's Textile & Clothing Industry

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Abstract: Based on international trade statistics, this paper compared international market share (MS) of four textile & clothing exporting countries (regions): China, the European Union, Turkey, India and calculated and compared their competitive advantage index (CA). The results showed that although China's textile and clothing industry's international market share was higher, but less competitive than the other countries. The reason is that Chinese textile and clothing industry is in the low-end of the global value chain. And promoting the informationization level of the textile and clothing industry is able to effectively improve the enterprise's core competitiveness, thereby enhancing the international competitiveness of the industry to achieve in the global value chain upgrading.

Keywords: competitiveness; informationization; textile & clothing industry

1 Introduction

Textile and clothing industry is a typical labor-intensive industry; so many developing countries become the world's main regions which the textile industry transfers to because of their lower labor costs. The production and exports of these regions grow rapid and the international market share is expanding. Developing countries have become the main body of the world textile industry instead of developed countries. As the largest developing country, China's textile exports accounted for 26% of world textile exports in 2008, apparel exports for 33%; textile exports for 4.6% of China's total exports, apparel exports for 8.4%. China has become the largest exporter of textiles and apparel, occupying an important position. So it has its practical significance to value the level of international competitiveness.

In summary, industry competitiveness evaluation based on the international market competition stage, studying an industry study comparing international competitiveness of industries. It is not a point on the time - percentage coordinate system, but some trends over time. It is a relative concept and must be compared with other subjects. Therefore, this paper took an empirical analysis of the world's textile and apparel trade data from 1999 to 2008 and selected a few other countries as a comparison object. In this paper, we took international market share (MS) and competitive advantage index (CA) as two indicators of China textile and clothing industry's

international competitiveness. The results show that China's textile and clothing industry is less competitive and needs further improvement. The experience of developed countries tell that information technology can promote the industrialization, improve the product grade and quality, speed up the clothing pattern design and materials development, strengthen marketing channels and brand building, so as to realize the rise in value chain in of the global, acquiring more value-added (Zhang Xiaoqian, etc., 2006). Therefore, it is a viable strategy to improve the information level of textile and clothing enterprises and promote its upgrading in the global value chain.

2 Empirical Studies

In order to analyze more clearly the changes in the pattern of the world textile industry, this paper will be studied in the following breakdown for the textile and apparel.

2.1 International Competitiveness

2.1.1 Export market structure analysis and study selection

According to the World Trade Organization Trade Statistics report, the textiles market concentrations (CR15) from 2000 to 2008 were above 90%, indicating that the 15 countries or regions are the main world's textile export market. The average growth rates are in table 1 below:

As we can see from Table 1, in the top 15 countries, the average growth rates of ten countries are positive. The growth rate of the developing countries is significantly

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higher than that in the developed countries and most are in Asia. Mainland China rows in first by 19.09%. It shows that China's growth rate should be much higher than the world level and it is increasingly becoming a major exporter of textiles in the world with market share increasing rapidly.

Table 1:2000-2008: the average export growth rates (%) of the major textile exporting countries

China	Turkey	India	UAE	Thailand	Pakistan	EU	USA
19.09	12.46	7.94	7.87	6.38	5.93	4.42	1.66
Japan	Indonesia	Hong Kong	Korea	Taipei	Mexico	Canada	
0.55	0.59	-1.15	-2.51	-3.13	-3.13	-1.28	

(UAE= United Arab Emirates)

The following analysis is about the world apparel market structure. World clothing exports market is similar to textile export market .Its market concentration is also high. The world export markets apparel market concentration (CR15) were 80% from 2000 to 2008.The average growth rates are as shown in table 2:

Table2: 2000-2008 the average export growth rates (%) of major apparel exporting countries (regions)

Vietnam	RC	China	Bengal	Turkey	EU	Pakistan	India
22.06	17.99	16.21	10.07	9.59	9.04	7.78	7.78
Tunisia	Malaysia	Indonesia	HongKong	Thailand	Mexico	USA	
6.79	6.10	3.61	1.79	1.52	-6.81	-7.95	

(RC=Remonstrance Cambodia)

As we can see from Table 1, the growth rates in the developing countries are still higher than that in the developed countries .Most concentrated in Asia. China rowed in the third by 16.21% average annual growth. The developing countries become the main body of the current world textile and clothing exports. The growth rate of China is the most significant, followed by Turkey and India. The growth rate of the EU is also one of the largest in the world and the growth rate of U.S is reducing. So this article selects the European Union, Turkey and India as the comparison objects to make further empirical analysis.

2.1.2 International market share

International market share refers to a country's total exports of certain products accounting for the percentage of the world total exports of the same products. The formula is:

$$MS_i = X_{ij} / \sum_j X_{ij} \quad (1)$$

In the formula (1): MS_i is the international market share of j products in i country; X_{ij} is the exports of j kinds of products in i country; $\sum_j X_{ij}$ is the total exports of such products in the world, i represents different

exporting countries. Clearly, the greater the MS of a particular product is, the larger its share in the international market is and the greater the country's international competitiveness of these products is.

Table 2 shows China's share of world trade in textile and apparel market share grows from 1999 to 2008 and its clothing international market share is over the European Union for three consecutive years, becoming the world's largest exporter. There is a gap for textiles in the international market share, comparing with the EU. From the international market share, China become more prominent in the textile and apparel exports of the world. But it could not explain the overall competitiveness of the situation. We should make reference to other indicators.

Table3 1999-2008, the international market share of four major textile and apparel exporting countries

Time	China		UK		Turkey		India	
	T	C	T	C	T	C	T	C
1999	8.82	16.17	-	-	2.35	3.50	3.00	2.61
2000	10.25	18.31	34.35	24.11	2.33	3.32	3.44	3.14
2001	11.45	18.79	34.39	24.14	2.66	3.40	3.81	3.06
2002	13.51	20.56	34.21	25.12	2.79	4.01	3.70	2.80
2003	15.88	23.04	34.79	26.53	3.10	4.40	3.84	2.86
2004	17.17	23.97	36.61	29.03	3.30	4.34	4.00	2.85
2005	20.23	26.91	33.49	29.15	3.48	4.29	3.87	3.01
2006	22.27	30.63	33.58	26.79	3.47	3.82	4.27	3.27
2007	23.50	33.37	33.86	29.94	3.67	4.05	3.97	2.79
2008	26.08	33.15	32.06	31.05	3.76	3.76	4.10	3.00

(T=textile, C=clothing)

2.1.3Competitive Advantage Index

Combining exports with imports of certain types of goods, the competitive advantage index expands the amount of information. Formula is as follows:

$$CA_{ij} = \frac{X_{ij} / \sum_j X_{ij}}{\sum_i X_{ij} / \sum_i \sum_j X_{ij}} - \frac{M_{ij} / \sum_j M_{ij}}{\sum_i M_{ij} / \sum_i \sum_j M_{ij}} \quad (2)$$

In the formula (2), the first half of the part is the country's revealed comparative advantage index and the latter half is the share of a country's total imports of certain products relative to its share in the total world trade compared with the revealed comparative advantage Index. The index reflects the more comprehensive information of a country's data of the export and import.

Figure 1 and Figure 2 show that the value of Turkey's apparel CA declines more, but still large, indicating that the apparel industry is more competitive. Its textiles CA are more stable despite the fluctuations in value in recent years, maintaining at about 3. India's textile CA values also decreased. But the overall level is still the highest and the industry is competitive. Its textile import data was missing, only four CA values .which are also at a high level. EU's textile, apparel CA values are less than 0.5 and the CA value is negative, indicating the competi-

tiveness is weaker than the other three. CA value of Chinese textiles has been rising, but there is still a gap to Turkey, India, indicating the competitiveness of its textile products has to be raised. There is a little fluctuation of the CA value of the whole clothing, a slight upward trend in recent years. Due to missing data, we can compare the status of the last five years of China with India. But the competitiveness of its clothing is not strong and there is an urgent need to improve.

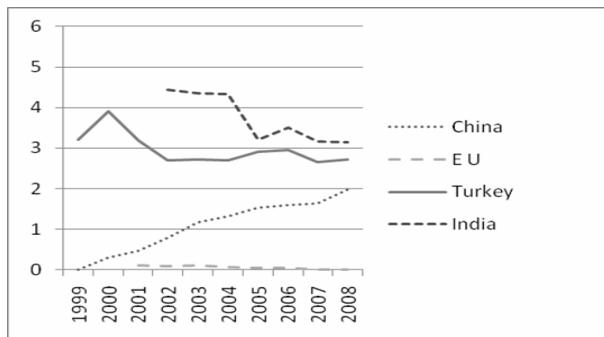


Figure1:1999-2008, the CA value of clothing 2000-2008 of the four major textile exporting countries (regions)

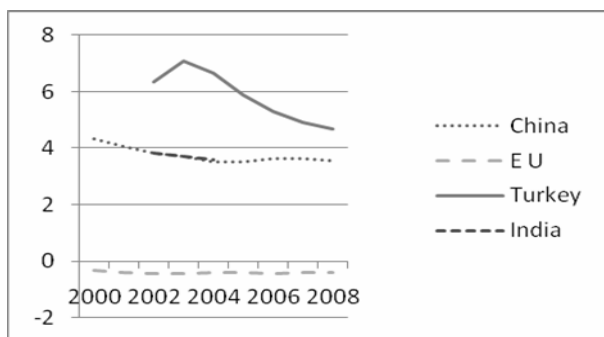


Figure 2: the CA value of four exporting countries (regions)

According to the theory of global value chain, through breaking down the textile and clothing industry value chain, we can get five major aspects :design development, textile processing, sewing production, production coordination, brand marketing and the added value of each link is very different, becoming a "U" type of "high - low - high" (excellent, Zhang Min, 2008). It can be seen, with the brand or the control of a large wholesale and retail network, the textile and clothing enterprises can obtain the highest added value through engaging in brand marketing, fashion design and new fabric development and other sectors.

Combining the above empirical analysis, although Turkey's and India's market shares are lower than that of China, they have more strong international competitive advantage, indicating that their competitive advantages

are not dependent on the rich resources and low labor costs. The higher the precedence in the global value chain, the more value it can get. Moreover, although these indicators show that the EU's is the least competitive; we should note that the EU's share in world markets has been the largest (2008 slightly lower than that of China). Meanwhile, the EU's old clothing- producing countries, such as Italy and France are always firmly in control of the global textile and clothing industry value chain, engaging in the brand marketing, fashion design and new fabric development and other sectors (Zhuo Yue, Zhang Min, 2008). China's textile and clothing industry mainly relies on low-cost competition and other traditional means of competition in the world market and it is not a strong textile and clothing industry in the global apparel value chain. It only lies in the lower rank of the link.

2.2 Promotion Strategy

According to the theory of industrial competitiveness, in terms of a national industry, to achieve international competitiveness is to obtain a competitive advantage on the international market. Industrial competitiveness is composed by the business strategy, structure and competition, factor conditions, demand conditions, related industries (Cheng Xin, 2009). The enterprise informationization is to apply the information resource and the information technology to producing, management, innovation and so on, which can promote the competitive power from demand, production, marketing, design research and development, product innovation, organization management and so on. Doing this can integrate the above several aspects to form a coherent organism.

First of all, information technology has a range of spillover effects over the economy by changing the production costs, management costs and transaction costs to change the competitiveness of enterprises and expanding and changing the fields of competition through the derivatives scope and the ways of competition. Second, the information technology has different economic spillover effects. We can improve the competitiveness of enterprises through the implementation of the difference strategy (Zhang Haitao, etc., 2007). Combining the characteristics of textile and clothing industry, we can establish the competitiveness model of textile and clothing enterprises based on the information technology, as Figure 3.

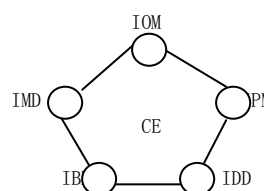


Figure 3, Competitiveness Model of the Textile Industry based on Information

(IOM = the informationization of Organization and management, IMD = the informationization of Market demand, PM= the informationization of Production Management, BM=the informationization of Brand Marketing, IDD = the informationization of Design and development, CE= Competitiveness of enterprises)

3. Conclusions

The research about the export market share and export competitiveness of textile and apparel described the position of the Chinese textile and apparel industry in the world market position. Although China is the leading exporter and it maintains the high market share, but China's textile and clothing enterprises have been in a low-end of the global value chain and encounter the rule parameters barriers when they make efforts to increase rates (such as technology barrier, environment barrier, laborer standard barrier and the regular parameter barrier and so on). Through the analysis about influential role of informationization, it is an effectively way to enhance China's textile and clothing industry in the global value chain position by the implementation of enterprise information. It is necessary to be given adequate attention.

References

- [1] Zhang Xiaoqian, Gu Xinjian, Xu Yuanyuan. Information Technology ASP Model of Textile and Clothing Industry [J], *Journal of Textile Research*, 2006 (9), P:117 .
- [2] Yang Jinling. The Empirical Analysis of International Competitiveness of Textile and Clothing Industry in China [J], *International Trade*, 2008 (9), P: 90-91.
- [3] Liu Chongli, Li Wei, Chen Jing, China, The Competitive Advantage of China's Textile Exports in the Quota-Free Era - the Empirical Analysis Based on Market Structure and Competitiveness [J], *Economic Studies*, 2009 (2), P:122-123.
- [4] Cheng Xin, The Research about Our International Competitiveness of Textile and Clothing Industry Based on RCA-based Index of the Diamond Model [J], *International Business Studies*, 2009 (1), P:25.
- [5] Zhuo Yue, Zhang Min. The Income Distribution and "Tragic Growth" in the Global Value Chain - Based on the Analysis of Textile and Clothing Industry [J], *Industrial Economy of China*, 2008 (7), p: 132.
- [6] Zhang Haitao, Gao Ling, Gao Desheng, The Enterprise Competitive Power Model and Cultivation Based on informationization Manufacturing [J], *Information Science*, 2007 (8), p: 1206-1207.