



China BDO-PTMEG-Spandex Industry Chain Report, 2009-2010

May 2010

Property right statement: Copyright of charts, tables and sentences in this report belongs to ResearchInChina (Beijing Waterwood). For charts or tables marketed as from other sources, original publishers own the copyright. The quoted data in this report are collected from public sources. If there is any problem related to property right, please do not hesitate to contact ResearchInChina.

3. Overall Development of China's Spandex Industry

3.1 Status Quo

Based on the developed technologies learning from foreign countries and driven by the investment fever in China of multinational enterprises including Invista and Hyosung, the spandex industry of China has achieved great advancement. At present, the industry of China has stepped into its mature stage.

Many domestic enterprises like Huafeng Spandex and Yantai Spandex have possessed substantial production scale and their own key technologies, so they are very strong in technical maturity, product stability and cost controlling. Many multinational enterprises lavish to build factories in China, a move indicates that China's demand capacity of spandex has further strengthened. In other word, the tensive supply-demand condition in domestic market has been under control in the main. In 2009, China's spandex capacity totaled 336,000 tons, registering 65% of the total worldwide. Therefore, China has become the first largest spandex manufacturer in the world. With the increasingly tough environmental protection standard in developed countries, the global major spandex producers have began to have their eyes glued in Chinese market.

Hampered by technology factors, domestic spandex products are mainly of regular specifications, with relatively low differentiation. In 2009, the spandex differentiation rate in China was no more than 35%, lagging far behind the 50% level of developed countries. Meanwhile, the financial meltdown hit the export of spandex, which resulted in the production drop of spandex between 2008 and 2009. Although the on-stream availability has rebound to 90% or even 100% in November, 2009, the overall on-stream availability in this industry was about 60% due to the weak risk resistance capacity of SME. However, with the boost of upstream export and domestic demand, the overall on-stream availability in early 2010 had reached 92% or above. All in all, the whole industry has represented an upward spiral.

Operating Rate of China's Spandex Industry, Nov., 2009

Nature of Enterprise	On-Stream Availability
Large Enterprises (Huafeng Spandex, Yantai Spandex, Youli Investment Holding)	.
SME	80-90%
Others	90%

Source: ResearchInChina

3.2 Demand & Supply

3.2.1 Change of Demand & Supply

Stimulated by the development of downstream demand market and high profit of spandex products, investment in spandex became very popular before 2005. During the period of 2001 and 2005, the average annual capacity of spandex increased by 69.6%, and the average annual output rose by 59.9% while the apparent demand increased by 38.9%. After 2005, the growth of textile export declined because of trade friction, which drove the spandex demand slow down.

During 2006 and 2009, the average annual capacity and output reduced to 13.4% and 8.7% respectively, while the average annual apparent demand increased by 14.4%. This meant that the whole spandex industry had stepped into another round of upward spiral. In 2009, the spandex capacity reached 336,000 tons, up 7.1% year on year; the output realized ** tons, up 2.9% year on year; and the apparent demand was**tons, up 19.1% year on year.

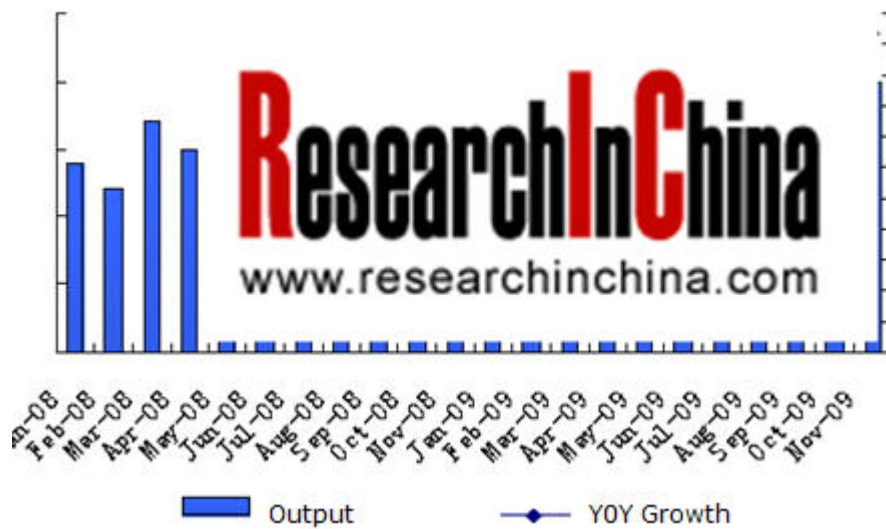
Capacity, Output and Apparent Demand of Spandex Industry in China, 2001-2009 (Unit: ten kiloton)

Year	Capacity	Yield	Apparent Demand
2001	2.5	1.7	3.5
2002			
2003			
2004			
2005			
Average Annual Growth, 2001-2005	69.6%	59.9%	38.9%
2006			
2007			
2008			
2009			
Average Annual Growth, 2006-2009	13.4%	8.7%	14.4%

Source: ResearchInChina

.....

Monthly Output & Year-on-Year Growth of China's Spandex Industry, 2008-2009 (Unit: ten kiloton)



Source: China Petroleum and Chemical Industry Association, ResearchInChina

3.2.2 Supply

3.2.2.1 Output

In terms of supply, the spandex capacity of China had realized 336,000 tons in 2009, while the output had reached ** tons, with the self-sufficient rate touching 84%. The leading spandex suppliers in the Chinese market include Zhejiang Huafeng Spandex, Invista, Hyosung (Jiaying, Zhuhai), Youli Investment Holding and Yantai Spandex. With advanced technology and high quantity, the five giants, whose overall capacity was 162,000 tons with 48.5% of the total nationwide, target middle- and high-end market.

Nevertheless, the supply of spandex in high-end market of China still lags behind, depending heavily on import. Although great efforts have been made to turn around the situation, the supply-demand tension in high-end market can not be handled fundamentally in the short run restricted by underdeveloped technology and equipments.

Leading Spandex Manufacturers in China, 2009(Unit: ten kiloton)

Manufacturers	Capacity
Zhejiang Huafeng	4.2
Hyosung (Jiaying, Guangdong, Zhuhai)	3.87
Youli Investment Holding	
Invista (Shanghai, Foshan)	
Yantai Spandex	
Hangzhou Banglian	
Zhejiang Yibang	
Shei Yung Hsin Spandex	
Zhejiang Huahai	
Taiguang Chemical Fiber (Changshu)	
Hangzhou Sunrise Soandex	
Zhejiang Artex Fiber	
Xiamen Lilong Spandex	
Shaoxing Seasheart	
Xinxiang Bailu Chemical Fiber	

Lianyungang LDZ	
Shaoxing Longshan	
Liaoyuan DeHeng	
Zhejiang KPT	
WuHuan Spandex (Shaoxing)	
Shandong Ru Yi	
Zhejiang Wally	
Hangzhou Shumeier	
Hangzhou Asahikasei	
Shaoxing YouBang	
Sum	33.6

Source: ResearchInChina

3.2.2.2 Distribution by Region

In terms of distribution by region, spandex manufactures are mainly spread in Zhejiang, Jiangsu, Shandong and Guangdong. In particular, Jiangsu and Zhejiang provinces have become the spandex cluster with the collective capacity of **.

Distribution of China's Spandex Industry by Region, 2009



Source: ResearchInChina

3.2.3 Demand

3.2.3.1 Demand

During 2001 and 2009, the spandex demand in China increased by 28.2% each year on average. However, the demand growth seemed to slow down affected by downstream export trading and enlarging demand base in 2007-2009. Nevertheless, alongside with the recovery of downstream export market and expansion of domestic market, the spandex demand in 2009 reached ** tons, up 19.1% year on year and increased by 17.4% comparing to that of the same period in 2007.

Spandex Demand of China, 2001-2009(unit: ten kiloton)



Source: ResearchInChina

3.2.3.2 Demand Structure

In terms of demand structure, the demand of spandex for covering yarn, circular knitted yarn and wrap yarn takes up a large proportion, representing **of the total demand in the market. At present, the spandex for based wrap yarn and circular knitted yarn has been out of stock. Moreover, the downstream market of wrap yarn is home textiles, an industry with rigid demand. This ensures the demand shares of spandex to the fullest extent.

Downstream Demand Structure of Spandex, 2009



Source: ResearchInChina

3.3 Market Price

3.3.1 Spandex Market Price Tendency, 2006-2009

Generally speaking, the supply exceeded the demand in spandex industry in 2009. The average market price of spandex 40D in the whole year was less than RMB ** per ton, down 16.3% year on year. And in the early 2009, it even slumped to RMB ** per ton duet to the financial chaos.

In May 2009, spandex price rose to ** driven by the cost hike. Meanwhile, with the rebound of downstream textile export and boost of domestic demand, the price of spandex 40D maintained the level of ** per ton by large in the second half 2009.

.....

3.3.2 Related Industries' Influence on Spandex Market Price

Hampered by the downstream demand of spandex, the spandex price was relatively low before Jan.-May in 2009. Although the prices of raw materials in the upstream decreased to some extent, the price difference of spandex-PTMEG-MDI was controlled below RMB ** per ton. In May 2009, the spandex price began to rise with the recovery of downstream demand, while the prices of main raw materials of PTMEG and MDI experienced a mild growth, which widened the price difference of spandex-PTMEG-MDI. In March 2010, the price difference touched the highest point to RMB 35,800 per ton or so.

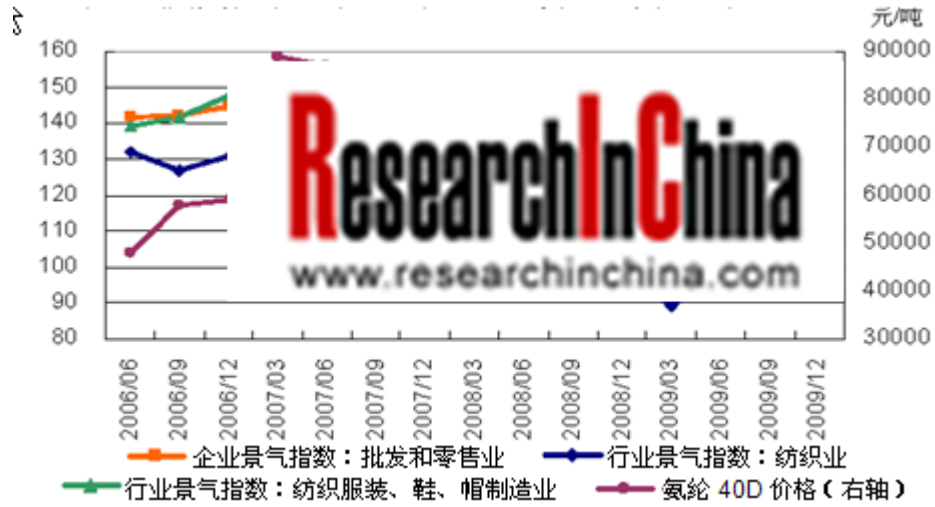
Influence of Main Upstream Raw Materials on the Price of Spandex 40D, 2008-May 2010



Source: www.Chemsin.com; ResearchInChina

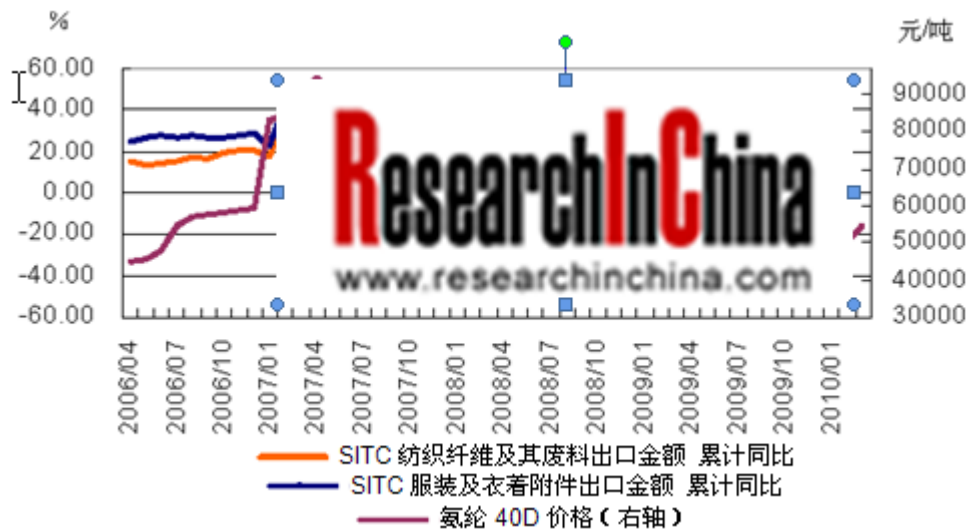
The spandex price is closely related to the development of the downstream industries including textile, garment, shoes and hats sectors.

Influence of Climate Indices of Related Industries on the Price of Spandex 40D of China, Jun. 2006-Dec. 2009



Source: Wind; ResearchInChina

Influence of Export of Related Industries on the Price of Spandex 40D of China, Apr. 2006-Jan. 2010



Source: ResearchInChina

3.4 Competition Pattern

By the end of 2009, China had more than 30 spandex enterprises and one third of them were listed companies, such as Huafeng Spandex, Yantain Spandex, Youli Investment Holding, etc.

In terms of capacity, the concentration rate of spandex industry in China is comparatively low. Huafeng Spandex, topping the list, only occupies 12.5%. And the accumulated capacity proportion is no more than 33.5% of the total. Owing that the spandex industry itself features low capacity base and small scale, there is little difference in capacity proportion among different enterprises in this regard.

Market Shares of Spandex Brands by Capacity in China, 2009



Source: ResearchInChina

.....

Product Differentiation Rates of Leading Domestic Spandex Manufacturers, 2009

Company	Product Differentiation Rate
Huafeng Spandex	50%
Hyosung	
Youli Investment Holding	
Yantai Spandex	<40%

Source: ResearchInChina

Product Gross Profit Margins of Leading Domestic Spandex Manufactures, 2009



Source: ResearchInChina

3.5 Import & Export

According to China Customs, the export and import trading of spandex products is mainly conducted by two ways of customs coding, i.e., spandex elastic single yarn (not over 50 turns per meter if twisted or untwisted) customs code: 54024410; and spandex yarn (spandex long thread multi-strand yarn or cabled twist), customs code: 54026920.

3.5.1 Spandex Elastic Single Yarn

During 2007-2009, Chinese import & export volume of spandex elastic single yarn saw little fluctuation, and the export volume was always above two times the import volume. Yet, the export value fluctuated sharply in a comparable way and showed the declining trend from 2007 to 2009. The export sum reached US\$175.42 million in 2009, down 16.8% yr-on-yr, which was mainly inflicted by financial crisis, the decreasing demand and a sharp drop in the average unit price of products.

.....

Import Volume & Export Volume of China's Spandex Elastic Single Yarn, 2007-2009 (unit: kiloton)



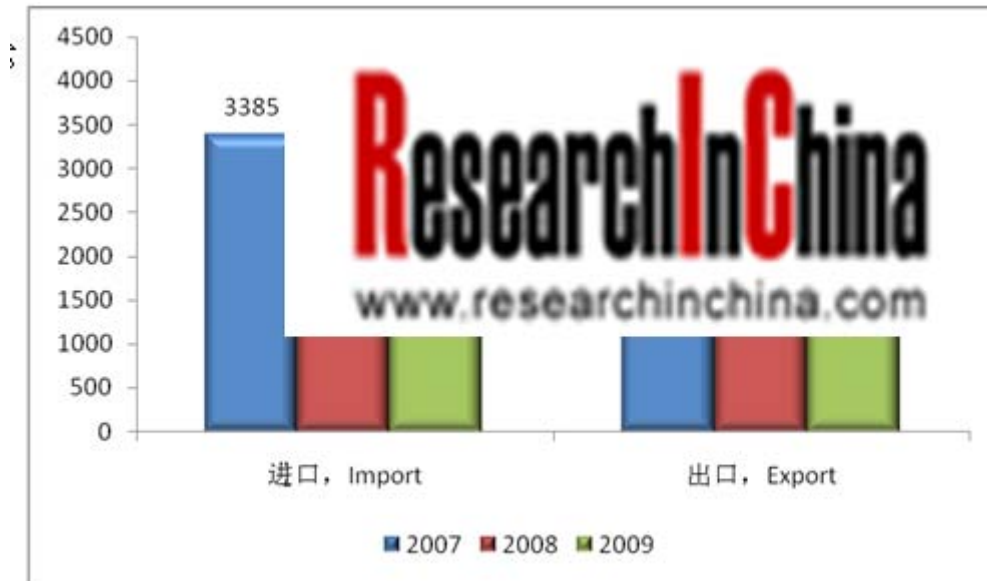
Source: China Customs, ResearchInChina

3.5.2 Spandex Yarn

During the period from 2007 to 2009, Chinese export volume of spandex yarn witnessed greater fluctuation in export volume than in import volume, particularly in 2009, the export volume amounted to 1338.3 tons, down 47.2% yr-on-yr; while the import volume hit 4124.6 tons, up 35% yr-on-yr.

.....

Import Volume & Export Volume of China's Spandex Yarn, 2007-2009(unit: tons)

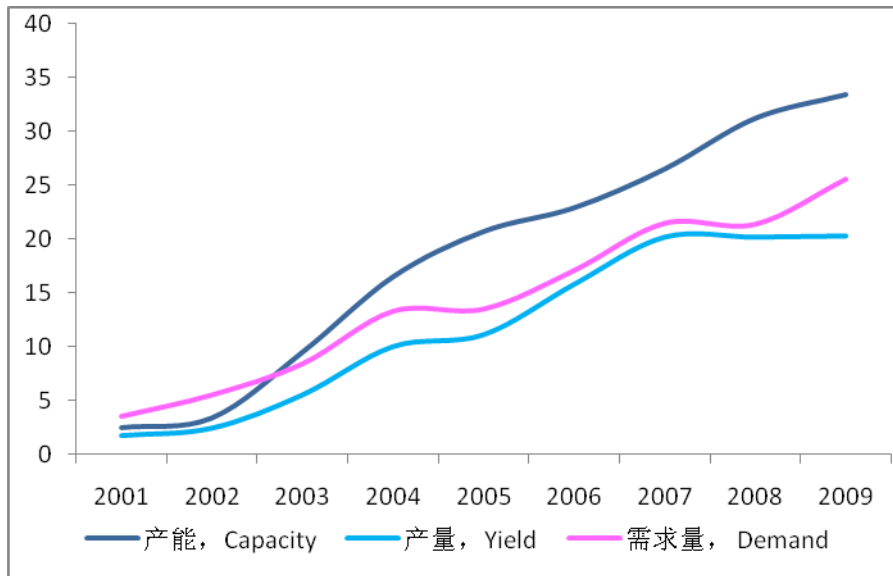


Source: China Customs, ResearchInChina

3.6 Prospect

Seen from the running trend of the supply and market in Chinese spandex market, Chinese spandex industry is in the ascending stage currently, with the higher growth of demand than that of supply.

Supply & Demand Trend of China's Spandex, 2001-2009 (unit: ten kiloton)



Source: ResearchInChina

Regarding upstream and downstream industries, the supply of upstream PTMEG and pure MDI is in sufficiency, and there is little room for the rising of prices, effectively ensuring the raw material cost of spandex production. A case in point is PTMEG supply. Suppose that a ton of spandex requires 0.8 tons of PTMEG, China's demand for PTMEG was 269,000 tons in 2009, which, compared with the production capacity at the time, saw a gap down to 39,000 tons. With new PEMEG facilities put into operation, the demand-supply gap will further narrow down to 31,000 tons in 2010.

Change of PTMEG Supply to Spandex Industry in China, 2007-2010

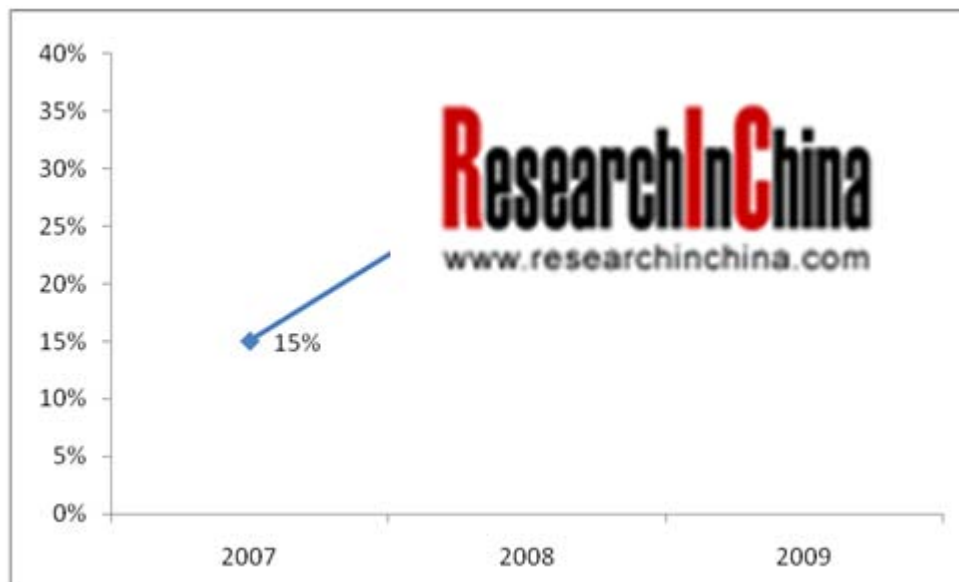
	Production Capacity, 2007	Production Capacity, 2008	Production Capacity, 2009	Production Capacity, 2010F
PTMEG	13.5	15.5	23	30.6
Spandex	26.5	31.2	33.6	42.1
PTMEG for Spandex Industry (Spandex * 0.8)	21.2	24.9	26.9	33.7
PTMEG Supply-Demand Gap	7.7	9.5	3.9	3.1

Source: ResearchInChina

In the meantime, the downstream traditional industries are turning for the better and the exportation shows the recovery, as well as the new demand brought by the extended application of spandex, there is a huge demand for spandex in the market in the future. Although the demand of Chinese spandex market will keep rapid growth in China in the following years, the growth rate will slow down along with the expanding cardinal number and the gradual saturation of the market.

As far as the product structure is concerned, the product structure of Chinese spandex market still desires to be greatly improved. Concerning the differentiated spandex, the differentiation rate is merely 35%, far behind the spandex differentiation rate of 50% in the developed countries. Yet, from the spandex projects under construction or to be constructed during the period of 2010 to 2011, the spandex to be newly added in the next two years are mostly the differentiated variety. If the newly built projects puts into production, the product differentiation rate of China-made spandex will be above 45% in 2011, basically meeting the level of the developed countries.

Differentiation Rate of China's Spandex, 2007-2009E



Source: ResearchInChina

→ Related Reports

- **China Lithium Carbonate Industry Report, 2009-2010**
<http://www.researchinchina.com/Htmls/Report/2010/5869.html>
- **China Coal-to-ethylene Glycol Industry Report, 2009**
<http://www.researchinchina.com/htmls/Report/2010/5865.html>
- **Company Study of Danhua Chemical Technology, 2009**
<http://www.researchinchina.com/htmls/Report/2010/5863.html>
- **China Denitration Industry Report, 2009-2010**
<http://www.researchinchina.com/htmls/Report/2010/5859.html>

About ResearchInChina

ResearchInChina (www.researchinchina.com) is a leading independent provider of China business intelligence. Our research is designed to meet the diverse planning and information needs of businesses, institutions, and professional investors worldwide. Our services are used in a variety of ways, including strategic planning, product and sales forecasting, risk and sensitivity management, and as investment research.

ResearchInChina also offers subscription products for clients, including Market Weekly, Market Monthly and Market Quarterly on various industries. Market Weekly (Monthly and Quarterly) is the important step to understand the investment potential in China market.

We have over 600 clients worldwide, including the largest commercial and investment banks; insurance companies; research institutions; financial services firms; mutual funds; manufacturers; utilities; and industrial and technology clients.

Address: Room 1008, A2, Tower A, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080

Tel: 0086-10-82600828, 82600893

Fax: 00-86-10-82601570

Mail: report@researchinchina.com