

# **Taiwan Textile Industry Analysis & Investment Opportunities**



Department of Investment Services,

Ministry of Economic Affairs

# Table of Contents

<b>I. Global Trends of Textile Trade.....</b>	<b>1</b>
(I) Total Global Exports .....	1
(II) Rankings of the World's Top Ten Exporting Countries .....	2
<b>II. The Status Quo of Taiwan's Textile Industry.....</b>	<b>4</b>
(I) Supply and Demand of the Textile Industry .....	4
(II) Gap in Industry Supply Chain, Investment Niche and Prospective Foreign Investors .....	8
(III) Major Suppliers in Taiwan .....	11
<b>III. Optimal Choices for Foreign Investors .....</b>	<b>12</b>
(I) Investment Nylon 6.6 in Taiwan .....	12
(II) Taiwan's Future Role in the Nylon 6.6 Textile Filament Fiber ...	13
<b>IV. Successful Examples of Cross-national Strategic Alliances and Foreign Investments in Taiwan.....</b>	<b>15</b>
(I) Invista-Far Eastern.....	15
(II) Rhodia.....	15
<b>V. Industrial Investment Incentives .....</b>	<b>16</b>
<b>VI. Industry-Academia Collaborations in Taiwan .....</b>	<b>20</b>

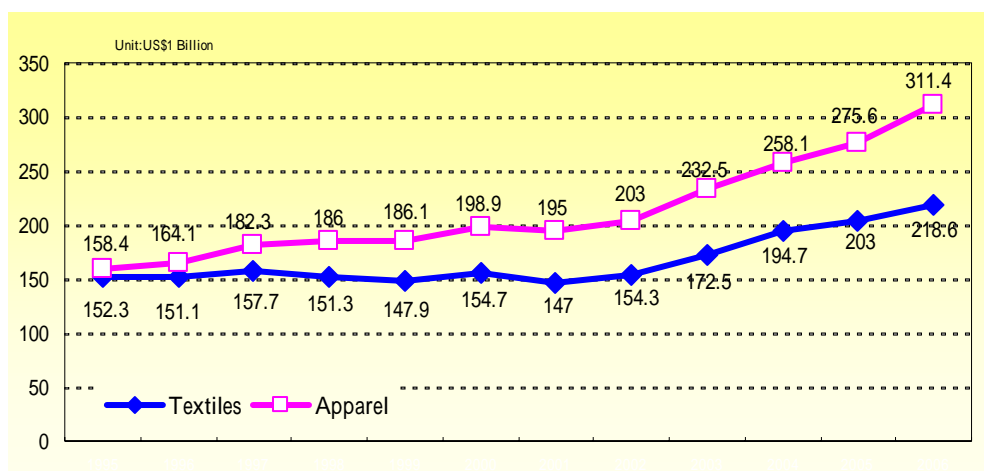
# I. Global Trends of Textile Trade

## (I) Total Global Exports

There has been quite a significant replacement of high-income countries by low-income countries in textile and apparel production following the start of the post-quota era in 2005. According to WTO data, exports of global textiles and apparel were worth US\$530 billion (see Fig. 1) in 2006; this represented a 10.74% growth compared with 2005, which exceeded the 6% growth rate in 2005.

A closer observation shows that textile exports were worth US\$218.6 billion in 2006, an increase of 7.68% compared with the previous year; this growth rate also exceeded the 3.9% growth rate in 2005. Apparel exports were worth US\$311.4 billion in 2006, and the 12.99% growth rate for apparel exports topped the rate for textiles, also exceeding the 6.4% apparel export growth rate in 2005.

Figure 1. Value of Global Textile and Apparel Exports

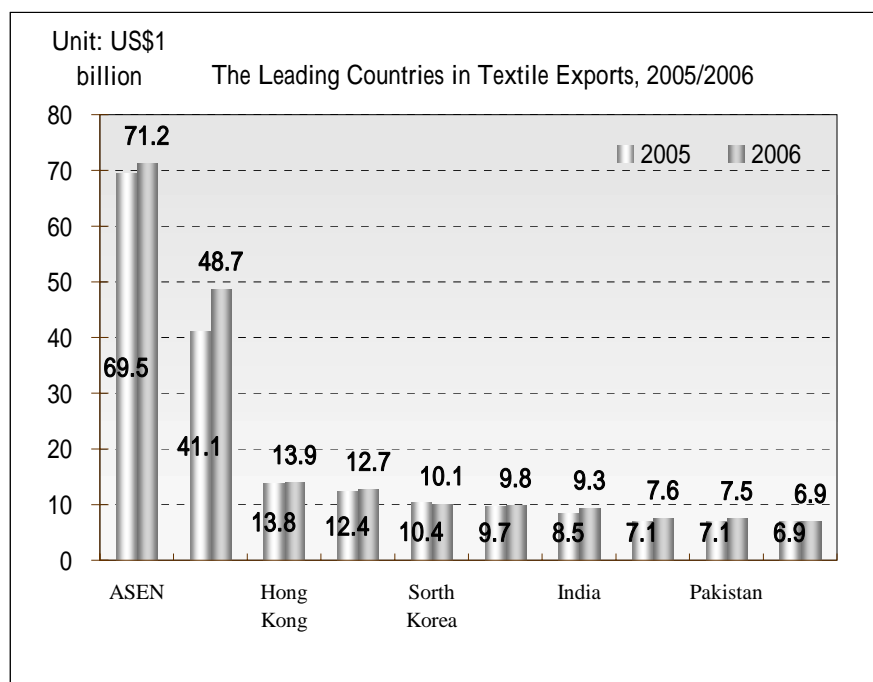


Source: WTO, ITIS Project, November 2007

## (II) Rankings of the World's Top Ten Exporting Countries

A comparison of the export value from the world's ten leading textile and apparel export areas in 2006 and 2005 (see Figures 2 and 3) shows that textile exports from the European Union, China, Hong Kong, the U.S., Taiwan, India, Turkey, and Pakistan have grown, with China enjoying the most significant growth. Chinese textile exports grew from US\$41.1 billion in 2005 to US\$48.7 billion in 2006, a growth rate of 18.49%, which was lower than the 23% growth rate in 2005. The relatively high-income East Asian countries particularly Hong Kong, South Korea, Taiwan, and Japan had lower textile exports in 2005 than in 2004, and this trend continued in 2006.

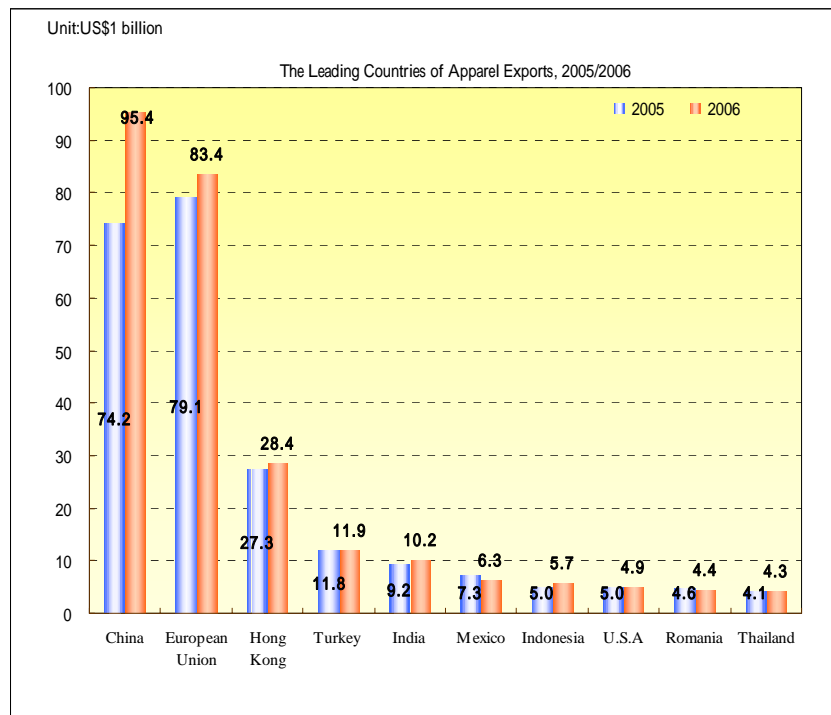
Figure 2. Changes in Textile Exports from the World's Ten Leading Exporting Countries



Source: WTO, ITIS Project, November 2007.

Observing the world's ten leading apparel exporting countries, we can see that all countries except Mexico, the U.S., and Romania enjoyed a growth in exports. China captured the leading spot from the EU and became the world's top apparel exporter. China's apparel exports grew by 28.57% in 2006, which was even higher than its growth rate of 19.87% in 2005.

Figure 3. Changes in Apparel Exports from the World's Ten Leading Exporting Countries



Source: WTO, ITIS, November 2007

## II. The Status Quo of Taiwan's Textile Industry

### (I) Supply and Demand of the Textile Industry

#### (i) Current Developments

When we look back at the development of Taiwan's textile industry since it started in 1945, the preliminary stage of development was mainly focused on cotton yarn and woven fabrics. After the development of the overall economic construction plan, Taiwan's textile industry adhered to import substitution policies and started to encourage the imports of machinery and raw materials to increase production in order to satisfy the domestic demands of Taiwan's cotton textiles and to further boost foreign exports. In the export expansion stage from 1961 to 1970, the industry started to produce its own synthetic fiber to satisfy the increased demand for raw materials in the textile industry. Textile goods also expanded from cotton products to synthetic fiber products, and during the fast development of the 1960's, the foundation for Taiwan's synthetic fiber industry was firmly established. In the 1970's, apparel and clothing accessories became the main products exported by Taiwan's textile industry, giving the industry an indicative export status. To this day, Taiwan's textile industry has a complete upstream, midstream, and downstream production and supply chain system from raw materials to the final production (see Figure 4). Based on an excellent synthetic fiber industry, it has developed into a matured and successful industry with synthetic fiber as its main raw material (see Table 1).

Table 1: Taiwan's Textile Industry Development Stages

Industry Development	Textile Industry Development	Main Textile Industry Stage Representative
Economic Rebuilding (1945~1950)	Recovery (1945~1950)	Cotton Textiles
Essential Goods Industry Development (1951~1960)	Development (1951~1960)	Cotton Textiles
Light Industry Development	Export Expansion	Synthetic Fibers

(1961~1970)	(1961~1970)	
Heavy Industry Development (1971~1980)	Growth (1971~1980)	Apparel
Strategic Industry Development (1981~1990)	Maturity (1981~1990)	Apparel
Development of High Tech and Industry Structure Adjustment (1991~)	Conversion (1991~)	Synthetic Fiber Textiles and High Tech Textiles

Source: TTRI, 56.(2006.)

## (ii) Output Value

In accordance with the data from the Department of Statistics, MOEA, Taiwan's textile industry had a total output of about NT\$350.6 billion from January to September 2007, representing an increase of 1.5% compared with the same period in 2006. The synthetic fiber industry had an output value of NT\$113.56 billion, or 32.4% of the output of the textile industry as a whole, which represented an increase of 0.15% over the same period in 2006. The output of the textile industry (yarn and fabric) had a value of NT\$207.08 billion, and this accounted for the largest share of the textile industry as a whole (59.1%), and represented an increase of 3.99% compared with the same period in 2006. The output of the apparel and accessory industry had a value of NT\$29.97 billion, which was down by 8.55% over the same period in 2006. (See Table 2)

Table 2. Output Value of Taiwan's Textile Industry

Unit: NT\$1 million

Year	Synthetic fiber industry	Spinning and weaving industry	Apparel and accessory industry	Total (% increase in value)
2001	113,476	318,998	73,040	505,514(-)
2002	123,609	307,959	65,830	497,399(35.86)
2003	141,051	290,432	63,123	494,606(32.88)
2004	163,528	305,983	59,241	528,752(32.52)
2005	153,629	269,838	48,761	472,228(34.09)
2006	151,263	262,939	43,611	457,813(-)
2007 (projected)	155,045	266,883	41,259	463,187(35.00)
2008 (projected)	156,500	270,000	40,000	466,500(36.00)

Jan.–Sept. 2007	113,560	207,078	29,974	350,611
Comparison of same periods in 2006/07	0.15%	3.99%	-8.55%	1.50%

Source: Department of Statistics, MOEA, adapted by TTRI ITIS Project, Nov. 2007

From Table 3, it can be observed that the increased output of Taiwan's synthetic fiber industry was mainly attributable to growth in domestic sales. While exports fell by 7.27% from January to September 2007, compared with the same period in the previous year, domestic sales grew 6.02% during the same period, while inventories dropped. The 3.99% increase in output value by the mid-stream segment of the weaving industry was primarily due to the growth in exports (5.41% increase). It can be seen that through the more specialized division of labor by the upstream synthetic fiber and mid-stream spinning and weaving industry segments, Taiwan's textile industry has maintained strong competitiveness in exports. Due to the rise in the output of the synthetic fiber industry and growing domestic sales, Taiwan's synthetic fiber market appears to be growing, which is chiefly attributable to the exports of textiles and woven products.

Table 3. Textile Exports and Domestic Sales for Taiwan

**Unit: NT\$1 million**

Period	Synthetic fiber industry		Spinning and weaving industry		Apparel and accessory industry	
	Domestic sales	Exports	Domestic sales	Exports	Domestic sales	Exports
Jan – Sept 2006	46,638	44,783	120,317	73,782	16,183	23,121
Jan – Sept 2007	49,447	41,529	122,354	77,777	14,917	21,978
Amount of increase/decrease	2,809	-3254	2,037	3,995	-1,266	-1,143
% change	6.02%	-7.27%	1.69%	5.41%	-7.82%	-4.94%

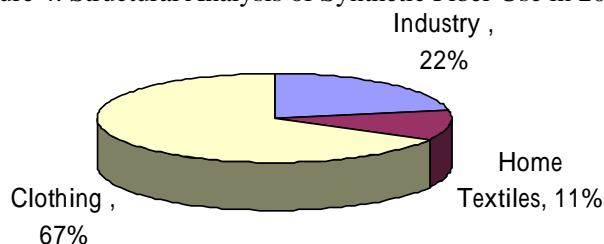
Source: Department of Statistics, MOEA, adapted by TTRI ITIS Project, Nov. 2007

Note: Because the Department of Statistics, MOEA conducts its surveys using questionnaires and an estimation matrix as opposed to what the Customs normally uses (declared value of goods during customs clearance), the export values in this table differ from those reported by Customs.

### (iii) Domestic Demand

The 2007 survey results showed that the proportion of apparel, home, and industrial textiles of Taiwan's textile industry structure changed from 69:13:18 in 2004 to 67:11:22 in 2006 (see Figure 5). In other words, apparel and home textiles each dropped by 2% while industrial textiles rose by 4%. The meaning behind this data shows that while the government's guiding policies have had a considerable effect, companies themselves are willing to invest their resources in developing towards industrial textiles. In terms of exports, in 2006, the export value and quantity for industrial textiles were clearly higher than in 2004, indicating that Taiwan's industrial textiles definitely have a competitive edge in the international market.

Figure 4. Structural Analysis of Synthetic Fiber Use in 2006



Source: Compiled by TTRI ITIS Project, Nov. 2007

If we define domestic demand by adding imports and subtracting exports from production, Table 5 shows that the domestic demand peaked in 2004 at NT\$200.2 billion and has been decreasing since then. It is estimated that the domestic demand increased slightly in 2007. In addition, exports accounted for 82.6% of output value, which was a slightly lower percentage than in 2006.

Table 4. Size of Taiwan's Textile Industry Market

Unit: NT\$100 million

Year	Output value	Import Value	Export Value	Domestic market demand	Exports as portion of output (%)
2000	5,775	903	4,730	1,948	81.9
2001	5,050	796	4,256	1,589	84.3
2002	4,966	855	4,191	1,630	84.4
2003	4,952	1031	4,152	1,831	83.8
2004	5,294	902	4,193	2,002	79.2
2005	4,680	840	3,787	1,733	80.9
2006	4,578	890	3,828	1,640	83.6
2007	4,632	891	3,828	1,695	82.6

Source: Department of Statistics, MOEA; Office of Statistics, Directorate General of Customs, MOF; Textile Industry Research Institute ITIS Project, November 2007

## (II) Gap in Industry Supply Chain, Investment Niche and Prospective Foreign Investors

In the 1970's, apparel and clothing accessories became the main products exported by Taiwan's textile industry, giving Taiwan's textile industry an indicative export status. To this day, Taiwan's textile industry has a complete upstream, midstream, and downstream production and supply chain system from raw materials to final production (see Figure 4). Based on an excellent synthetic fiber industry, it has developed into a matured and successful textile industry with synthetic fiber as its main raw material.

Figure 5. The Supply Chain of Textiles



In addition, the USA will also focus on the production of nylon short fibers and carpet filament fibers, and reduce the production of textile filament fibers. Statistics show that the USA's textile filament fiber output was 72,000 tons in 2001, but it reduced to 36,000 tons in 2006. It is expected to continue to decrease to 26,000 tons in 2011, while the production capacity is expected to decline by 31%.

Table 5. Global Main Production Area of Synthetic Fiber in 2006

Unit : 1,000 tons

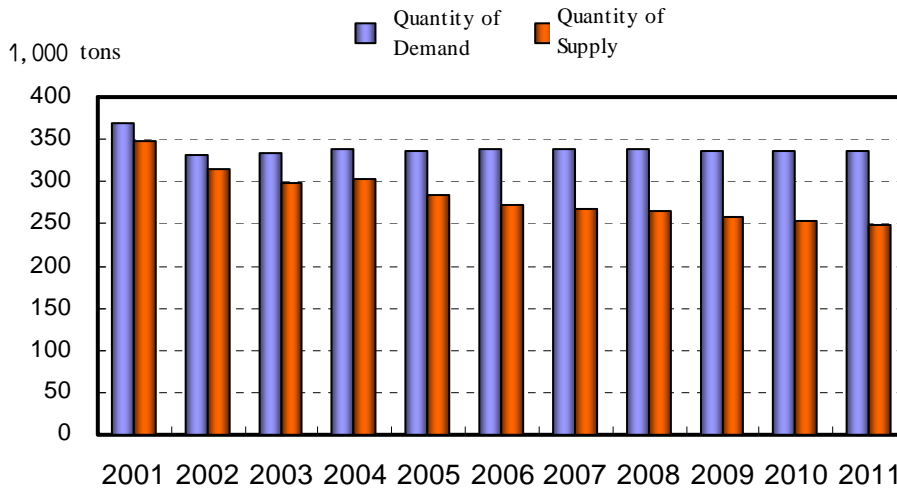
Area	Polyester Filament Fiber	Polyester Staple Fiber	Nylon Fiber	Acrylic Fiber	Synthetic Fiber	Cellulose Fiber	Chemical Fiber	Share%
Japan	270	213	123	243	925	66	991	2.6
	-4.2	-0.2	-0.7	-7.1	-3.1	-0.9	-3.0	
South Korea	735	515	165	48	1,513	6	1,519	4.1
	-15.1	-1.4	-5.7	-49.2	-11.4	0.2	-114.4	
Taiwan	1,185	613	415	149	2,383	132	2,516	6.7
	-7.1	-16.3	-0.3	6.9	-7.8	15.6	-6.8	
China	9,913	6,133	852	839	17,882	1,435	19,317	51.6
	11.3	11.4	18.3	7.1	11.3	20.3	12.0	
ASEAN	1,256	906	129	81	2,382	330	2,712	7.2
	-1.3	-5.0	6.2	4.2	-2.2	2.2	-1.7	
India	1,175	745	90	104	2,114	307	2,421	6.5
	13.0	21.2	7.5	-6.3	14.3	3.9	12.9	
U.S.A.	407	835	1,056	4	2,416	27	2,443	6.5
	-10.0	-8.9	-2.4	-93.8	-8.1	-42.3	-8.7	
West European	617	538	544	735	2,487	449	2,937	7.8
	-9.5	-0.6	-1.3	-0.2	-3.0	5.7	-1.7	
Global Total	16,194	11,483	3,928	2,507	34,581	2,872	37,454	100.0
	4.9	3.9	1.7	-5.1	3.3	10.4	3.8	

Source : JCFA, Japan Chemical Fibers Association, 2007

Nylon 6.6 textile filament fibers are suitable for products with greater ductility functions, which are usually represented by athletic wear. With the constant expansion of the global market scale in athletic wear, it is estimated that the demand for nylon 6.6 textile filament fiber will not show a reduction trend in the future. It is expected that in the next few years, supply will not be able to meet the demand. Statistics show that the 2006 global excess of

demand was 65,000 tons, and it is predicted that in 2011, the excess demand will reach 87,000 tons (see Figure 6).

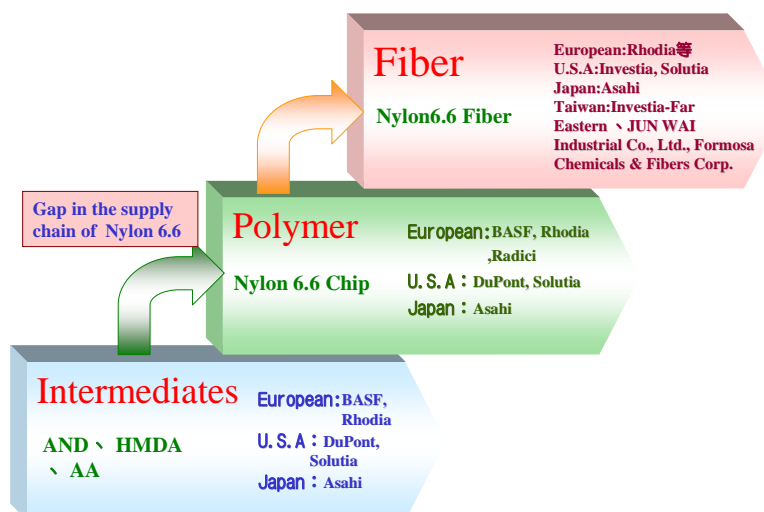
Figure 6. Global Supply and Demand of Textile Filament Fiber of Nylon 6.6



Source: CMAI (2007); Compiled by TTRI ITIS Project, Nov. 2007

CMAI data shows that the main production region for nylon 6.6 is Western Europe, and this product’s output reached 141,000 tons in 2001. However, by 2006, it had already decreased to 103,000 tons, and it is estimated that by 2011, the output will continue to plunge to 95,000 tons, and at the same time, production capacity will also decline by 7.7%. This is because Western European companies are keen on the opportunity of safety airbags and have proactively increased the production of industrial filament fibers, while reducing the production of textile filament fibers.

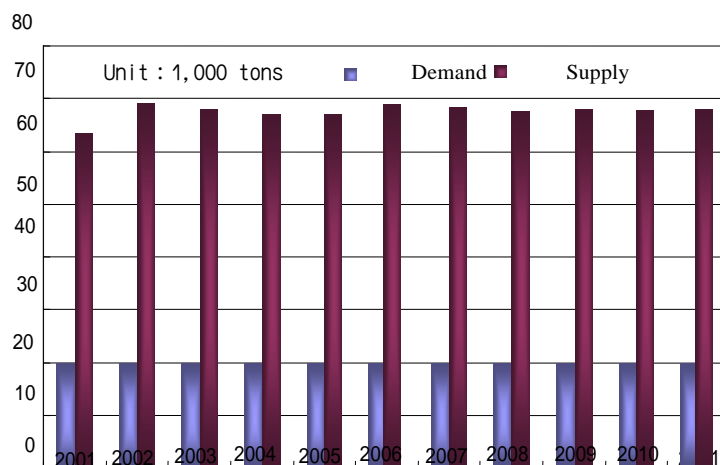
Figure 7. The Supply Chain of Nylon 6.6



### (III) Major Suppliers in Taiwan

Although Taiwan is a major producer of textile filament fibers, most domestic companies produce Nylon 6. There are several Taiwanese companies that produce Nylon 6.6, including Invista-Far Eastern Co., JUN WAI Industrial Co., Ltd., and Formosa Chemicals & Fiber Corp. due to the key materials in the up-stream supply chain led by DuPont, Solutia, Rhodia, BASF, and Asahi (see Figure 7). However, in the future, insufficient output is foreseen mainly because Taiwan is a major global provider of functional fabrics. Currently, 70% of the suppliers of the world famous athletic brands come from Taiwan, so in the nylon 6.6 value chain, Taiwan mainly produces the final fabric. However, for the fiber end, the domestic output of Nylon 6.6 is very limited, staying at 20,000 tons in the last few years (see Figure 8), As a result, the output of Nylon 6.6 does not meet the domestic demand.

Figure 8. Supply and Demand of Nylon 6.6 Textile Filament Fiber in Taiwan



Source: CMAI (2007); Compiled by TTRI ITIS Project, Nov. 2007

### **III. Optimal Choices for Foreign Investors**

Taiwan's nylon textile industry production and value chain structure development are complete, from the upstream petrochemical raw material to the downstream yarn, woven fabric (knitted and loomed), dyeing and finishing, and apparel. Compared to the development in other countries, because of its strategic geographical location, Taiwan has an advantage in its industry cluster and can therefore fully apply convenient resources.

#### **(I) Investment Nylon 6.6 in Taiwan**

##### **1. Taiwan's nylon industry with complete supply chain**

Taiwan's nylon textile industry production and value chain structure development are complete, from the upstream petrochemical raw material to the downstream yarn, woven fabric (knitted and loomed), dyeing and finishing, and apparel. Compared to the development in other countries, because of its strategic geographical location, Taiwan has an advantage in its industry cluster and can therefore fully apply convenient resources. (repeated above paragraph???)

##### **2. Taiwan with experienced production technology and skills in Nylon 6.6**

Of the four major chemical fibers of rayon, acrylic, polyester, and nylon, three of them have begun to decline in Taiwan, and Taiwan now only has a piece of the international market in nylon, with a continually growing output. In recent years, mainland China started to catch up, taking the leading global position in polyester, and their next step will take over the nylon market. Currently, mainland China is actively developing nylon 6.6 products, but

cannot acquire the key technology and experience. However, Taiwan already has the advantage of nylon 6.6 textile filament fiber production technology.

### 3. Taiwan's textile industry with excellent human resources

Taiwan is a major supplier of nylon 6 particles and fiber, with exports of particles to mainland China that make up 58% of their nylon 6 particle imports and 60% for fiber. Taiwan has a mature nylon 6 polymer and spinning technology, such as the Formosa Plastic Group's upstream petrochemical business, which has been developed over a long time and has strong vertical integration ability. As early as in the 1970's, it has complete nylon 6 particle production technology. Although the nylon 6 spinning equipment has been converted to nylon 6.6, the investment on more equipment must be increased, including manifolds and hot godet rollers. But regardless of the spinning speed, crimping and temperature control, Taiwan's technology is more advanced than that of mainland China. This is why mainland Chinese nylon businesses have been striving to lure Taiwan's high tech talents. This reveals that the quality of Taiwanese personnel is superior to that of the Chinese. In addition, Taiwan's textile industry also has excellent management and technological abilities with superior quality workforce. This is a great advantage in the development towards high value added textiles.

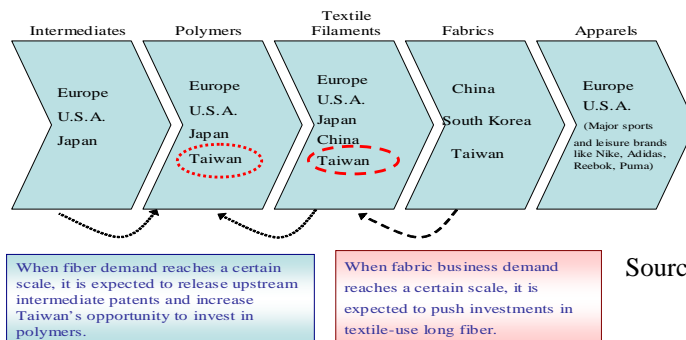
#### **(II) Taiwan's Future Role in the Nylon 6.6 Textile Filament Fiber**

With Taiwan's nylon 6 foundation, its quality of nylon 6.6 spinning technology and textile-use long fiber is superior to that of mainland China, especially the domestic producer of nylon 6.6 textile filament fiber, Suntex, which has a wrapping technology that is first in the world. Because of limited product quality, mainland China's nylon 6.6 textile filament fiber mostly relies on imports, and currently, 41% of mainland China's imported nylon 6.6

textile filament fiber comes from Taiwan which plays an important role in exporting nylon 6.6 textile filament fiber to mainland China.

In addition, Taiwan's current proportion of nylon 6.6 textile-use long fiber fabric production is 20% that of nylon 6, with about 268,000 tons of nylon 6.6 textile-use long fiber fabric produced in 2006. With a global athletic and leisure textile market scale that is growing at a rate of 20% annually, in 2010, it can be expected that production will be expanded for nylon 6.6 textile filament fiber, driven by the demand from downstream fabric businesses. At that time, the nylon 6.6 industry value chain will be distributed as shown in Figure 9.

Figure 9. 2010 Nylon 6.6 Industry Value Chain Prediction



Source: Compiled by TTRI ITIS Project, Nov. 2007

## **IV. Successful Examples of Cross-national Strategic Alliances and Foreign Investments in Taiwan**

### **(I) Invista-Far Eastern**

INVISTA, headquartered in the United States, has one of the world's largest integrated fiber and polymer businesses with a strong global presence. It developed a joint venture with Taiwan Far Eastern Textile company to establish Invista-Far Eastern company in 1998 to produce Nylon 6.6. Because this company produces differential products, it is the main supplier of fibers for functional sportswear and high quality fashion clothing in Taiwan. On the other hand, Invista-Far Eastern also transfers its marketing experiences and technical services to its customers in order to assist its customers in promoting their products. In the meantime, it could also expand the Taiwan's market of Nylon 6.6.

### **(II) Rhodia**

Rhodia, the second leading producer of Nylon 6.6 fiber in the world, established a branch office in Taiwan in 1976. In 1991, Rhodia established a production plant in Miaoli which produces engineering plastics for automotive, electrical, electronic, consumer and industrial applications.

## V. Industrial Investment Incentives

### 1. Tax Incentives

The Taiwan government offers tax incentives for industrial development in accordance with government policies aimed at encouraging corporate investments and increasing R&D, personnel training, and new equipment and technology among Taiwan companies. The incentives below have facilitated in the growth of many newly emerging industries while assisting with the transformation of Taiwan's traditional industries, and their contribution to the upgrading of Taiwan's industries and technologies cannot be ignored.

Items of Incentive	Contents of Incentive
Incentives for Company	<p><b>1. Incentive for Research &amp; Development (R&amp;D)</b>            A company set up in accordance with the Company Law of ROC can have a tax credit of up to 30% of the amount invested in R&amp;D against its business income tax payable. It may amortize the credit over five years starting from the year the expenditure is made. R&amp;D expenses should be those for the company's research on new products or technologies, improvement of their production or service providing technology, and improvement of manufacturing processes. All such expenses should be incurred by the R&amp;D department of the company. If R&amp;D is conducted by outside researchers (i.e., foreign university, college or research institute), the researchers should apply for approval from the related government institutions.</p>
	<p><b>2. Incentive for Personnel Training</b>            A company set up in accordance with the Company Law of ROC can have a tax credit of up to 30% of the amount invested in personnel trainings against its business income tax payable. It may amortize the credit over five years starting from the year the expenditure is made. The expenses should be for the development of company employees or relevant training activities relating to its business, conducted either in-house or by outside training agents.</p>
Incentives for Company	<p><b>3. Incentive for New Equipment or Technology</b>            A company set up in accordance with the Company Law of ROC can have a tax credit of up to 30% of the amount invested in personnel trainings against its business income tax payable. It may amortize the credit over five years starting from the year the expenditure is made. The expenses should be for the development of company employees or relevant training activities relating to its business, conducted either in-house or by outside training agents.</p>
Emerging, Important, and Strategic Industries	<p>The government provides Five-Year Exemption or Investment Tax Credit to investors in specific industries defined as "emerging, important, and strategic." By a majority vote of the shareholders those companies can choose to apply the Five-Year Exemption and forfeit the Investment Tax Credit in 2 years from the first day that the first shareholder makes payment for the shares. Once selected, the choice can not be reversed by any means</p>
Investment in Scanty Natural Resources Areas	<p>If a company invests up to a specific amount of its capital or employs a specific number of employees in a specific industry of a county or township area with scanty natural resources or with slow development, it may credit up to 20% of the total investment against the profit-seeking enterprise income tax payable. This is effective in each year within a period of five years from the year of investment.</p>

Items of Incentive	Contents of Incentive
Establishment of Logistics and Distribution Centers	The revenue received by a logistics and distribution center for providing warehousing and simple processing of goods for delivery to domestic customers shall be exempted from business income tax. The center shall be either commissioned domestically or established by a foreign company, or by the branch office of a foreign company.
Establishment of Operational Headquarters	For a company that establishes its operation as headquarters in Taiwan reaching a certain scale with significant economic effect, its income derived from providing management or research and development services to related foreign companies that they have acquired (i.e., royalties income, profit from investment, and gain from the disposition of properties), is exempt from business income tax. In addition, the company may procure publicly owned land at preferential prices.
Preference for Overseas Chinese' Investment	The Statutes for Investment by Overseas Chinese has been enacted to encourage Overseas Chinese investments in Taiwan. The preferential measures regarding the imposition of inheritance tax on the amount of the investor's investment as examined by the Investment Commission stipulates Overseas Chinese who are authorized to invest in Taiwan based on the Statutes for Overseas Chinese Investment are entitled to a 50% reduction in inheritance tax based on the appraised value of inheritance as assessed according to the Inheritance and Gift Law.
Science Park/Economic Processing Zone/Bonded Factory or Warehouse	A company may claim some indirect tax incentives if it is incorporated within a Science-Based Industrial Park or an Economic Processing Zone, or if it sets up a bonded factory or bonded warehouse according to the regulations issued by the Ministry of Finance. The main indirect tax incentives are: 1.Import of raw materials, fuel, supplies, semi-finished material from foreign country 2.Import of machinery 3.Export of its product/service to foreign country 4.Purchase of raw materials, fuel, supplies, semi-finished material, machinery from ROC tax area

## 2.Non-Tax Incentives

Items of Incentive	Contents of Incentive
Measures for Encouraging the Development of Leading New Products	In order to encourage new product development by private manufacturers with R&D potential, the government may provide a subsidy of up to half of the cost of development and matching funds for the other half. The Scope of eligible products as bellowing:
Measures for Encouraging the Development of Leading New Products	<ul style="list-style-type: none"> <li>• Products of emerging, important, and strategic industries</li> <li>• Products employing key technologies that surpass current standards of industrial technology in Taiwan.</li> <li>• Products that have a strong linking effect and good market potential, and that can stimulate the development of related industries</li> <li>• Intellectual property rights revert to the developing company</li> </ul>

Items of Incentive	Contents of Incentive
Corporate Participation in the Development of Technology	<ul style="list-style-type: none"> <li>• The Department of Industrial Technology, Ministry of Economic Affairs, sets up Technology Development Programs for purpose of encouraging enterprises to carry out R&amp;D. An enterprise which has R&amp;D capability and carries it out for technological products can apply for subsidies under the Industrial Technology Development Program. The related programs are as follows:</li> <li>• Companies that have an R&amp;D team, R&amp;D experience, and basic R&amp;D management capability may apply under the Industrial Technology Development Program</li> <li>• If two or more companies cooperate in the joint development of industrial technology, or carry out technological innovation for the service industry, system innovation, or the development of integrated solutions for emerging service systems, or if R&amp;D is carried out in the form of technological development and service R&amp;D by multiple companies, to clarify the rights and obligations involved in the cooperation and to institute a feasibility study for the establishment of a strategic alliance, application can be made under the Pilot Research Promotion Program for R&amp;D Alliances</li> <li>• If the project utilizes innovative technology, promotes an innovative business model, or involves research in the R&amp;D support or R&amp;D peripherals industry, application can be made under the Strategic Service Oriented Research &amp; Development Program</li> </ul>
Corporate Participation in the Development of Technology	<ul style="list-style-type: none"> <li>• For the establishment of R&amp;D centers within the territory of the Republic of China by domestic enterprises, application may be made under the Program for Encouragement of the Establishment of Industrial Technology Innovation Centers in Taiwan by Domestic Enterprises</li> <li>• For R&amp;D centers established within the territory of the Republic of China by foreign companies, application may be made under the Program for Encouragement of the Establishment of Industrial Technology Innovation Centers in Taiwan by Foreign Enterprises</li> <li>• Small and medium enterprises that are making an initial move into R&amp;D in technical products may apply under the Small Business Innovation Research Program</li> <li>• If the target of a company's development of technology is within the scope of innovative or demonstration information applications, application may be made under the IT Applications Promotion Project.</li> </ul> <p>Enterprises intending to engage in R&amp;D can assess their current operating scale and R&amp;D conditions, and then apply to the Ministry of Foreign Affairs for a subsidy. For details of the different subsidy programs, please check the following websites:</p> <ul style="list-style-type: none"> <li>• Industrial Technology Development Program (ITDP)</li> <li>• Industrial Technology Development Alliance Program (ITDAP)</li> <li>• Strategic Service Oriented Research &amp; Development Program (SRD)</li> <li>• Industrial Technology Innovation Center Program (MNCD)</li> <li>• Multinational Innovative R&amp;D Centers in Taiwan (MNCF)</li> <li>• Small Business Innovation Research Program (SBIR)</li> <li>• IT Applications Promotion Project (ITAP)</li> </ul>
R&D Center	<p>The Multinational Innovative R&amp;D Centers in Taiwan Program is an important element in the International Innovation and R&amp;D Base Plan, which forms part of the Executive Yuan's Challenge 2008 National Development Plan. Several leading international corporations including Intel, Hewlett Packard, Dell, Sony, Microsoft, IBM and Ericsson have established 15 R&amp;D centers in Taiwan. The Ministry of Economic Affairs (MOEA) estimates that within 5 years 30 multinational corporations will have set up innovative R&amp;D centers in Taiwan.</p>
R&D Center	<p>The R&amp;D companies incorporated according to the Company Law may apply for five-year tax holiday according to the Statute for Upgrading Industries. The R&amp;D companies may also obtain other incentive schemes such as support for human resources, funding, etc.</p>

### 3. Low-Interest Loans

To accelerate the industrial development and economic growth, a special fund has been set aside by the Development Fund of the Executive Yuan for cooperation with banks in providing various kinds of special low interest loans. These include preferential loans for small and medium-sized enterprises (SMEs) to upgrade and purchase automation equipment, and loans to private enterprises for purchasing pollution control and pollution treatment equipment. In addition, the government has allocated NT\$100 billion from new postal deposit funds for the "Medium and Long-term Capital Loan Plan." Private investors whose projects have a value of NT\$100 billion or more may apply for loans under this plan.

### 4. Government Participation in Investments

Investors can ask the government to participate in their investment projects (maximum of 49% of total capitalization). The following government agencies represent the government in providing capital: Sci-Tech Development Fund and other development funds, Chiao Tung Bank, Management Committee of the Executive Yuan Development Fund.

**Investment Priority:** Investments focused on industries such as petrochemicals and semiconductors to promote Taiwan economic development plans. Recent investments focused on the 10 Emerging Industries such as information, telecommunications, aerospace, digital content, biotechnology, among others.

## 5. Incentives for Investment Locations

(i) Science Parks

(ii) Export Processing Zones

(iii) Industrial Parks

(iv) Mixed Industrial/Commercial Zones

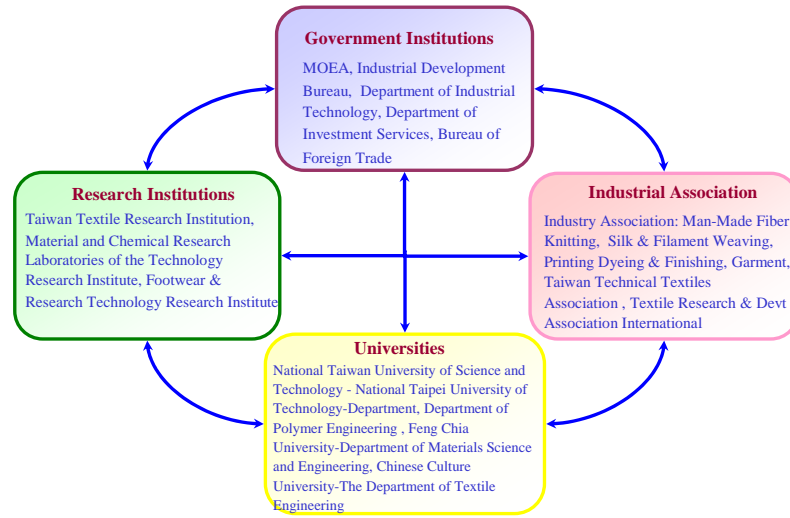
(v) Environmental Technology Parks

## VI. Industry-Academic Collaborations in Taiwan

With joint promotion by the government, industry, academia, and research organizations, Taiwan's textile industry, with the exception of apparel textiles, is also enthusiastically developing home and industrial textiles, which is one of its priorities in technological innovation, product R&D, and marketing. It is expected that in 2008, the ration of apparel, home, and industrial textiles will be 6:2:2, and in 2015 it will be 5:2:3. In order to understand Taiwan's current textile industry structure, the Taiwan Textile Research Institute (TTRI) conducted a survey in 2005 and regularly updates its results every two years.

Taiwan's textile industry has specialized research organizations, tertiary institutions, and industry associations. It therefore has sufficient support in research and development, production, and marketing. Therefore, the industry, government, academic, and research are all integrated in the promotion of Taiwan's textile industry.

Figure 8. Taiwan's Government, Industry, Academic, and Research Cooperative Institutions



Source: Compiled by TTRI ITIS Project, Jan. 2008