THE DEVELOPMENT OF THE CHINA APPAREL INDUSTRY

A Report Presented Jointly

by

China Textile University

&

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Foreword

The Harvard Center for Textile and Apparel Research (HCTAR) is pleased to make available this report, researched and written by Professor Gu Qingliang and his associates of the China Textile University, on the development of the Chinese apparel industry. In order to help understand the global apparel and textile sectors and imports and exports to and from the United States, HCTAR has sponsored research and reports on developments in China and Western Europe (France and England).

The U.S. Department of Commerce Merchandise Trade Statistics reported that in 1997 U.S. apparel imports, valued at $48.4 billion, were received from more than 175 countries. The U.S. imported $7.4 billion dollars of apparel from the People's Republic of China (P.R.C.), more than from any other country. Imports from Mexico ranked second at $5.3 billion.

In the period 1991-97, imports of apparel from China rose at the annual rate of 12 percent compared to the 34 percent annual rate of increase from Mexico and the 11 percent a year annual rate of increase in all apparel imports. The specification of points of origin of trade and valuation issues has resulted in unusually large discrepancies in reports of trade statistics by China and the U.S. The U.S. Department of Commerce, Commerce News, April 29, 1996, reported: "Each country's import statistics are consistently greater than the other's exports."

HCTAR is concerned that Western audiences better understand the operations of the apparel industry of China, including its size, structure, management, performance, technology, human resources, and organization for exports. It is also vital to appreciate the wholesale and retail distribution of apparel within China and the potential for growth of China's domestic market as economic development occurs.

There are doubtless complexities in data and concepts that make translations to Western audiences difficult. We are well aware of these complications from our meetings over the draft manuscript with Professor Gu and his associates and from our earlier visits to apparel plants in China. Despite such questions, it is vital that Western audiences be better informed as to the developments in this sector in China.

We acknowledge the assistance of Professor Gary Jefferson of Brandeis University and Professor Tom Rawski of the University of Pittsburgh. This report is the work of Professor Gu and his associates.

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Preface

Since the initiation of economic reforms and open policies in the late 1970s, China's economy has been among the fastest growing in the world. Dramatic changes caused by these reforms have touched virtually every aspect of China's economy and society. The introduction of a market system in China has fundamentally changed industry structure, firm ownership, and the nature of relationships between supply channel partners. China's textile and apparel industries provide an excellent example of those changes.

China has the largest apparel industry in the world with more than 3.9 million workers employed in an estimated 47,000 establishments in 1995.[1] In that year, Chinese apparel factories produced 9.685 billion garments (in units).[2] China's total apparel exports were valued at approximately US$24 billion.[3]

The majority of China's apparel exports are designed by foreign customers and made from imported fabrics. Most of these garments are intended for mass markets, with moderate or low prices. A few factories produce high quality clothing for high-fashion foreign brands.

In 1995, official figures indicate that the largest importer of Chinese apparel products was Japan, followed by Hong Kong and the United States.[4] However, it is important to note that these official figures do not reflect the fact that a big part of Hong Kong's apparel imports from China were then transshipped to other countries, most notably the U.S. and Japan.[5] About 80% of U.S. imports from China travel via intermediaries, with Hong Kong accounting for all but 3-4 percent of intermediary trade.[6] Such transshipments have made the accurate assessment of the ultimate destination of China's apparel exports nearly impossible.

China's sewing industry has long been concentrated in its coastal region. Coastal concentration continued after the introduction of market reforms due to the region's experience managing apparel production, its relatively convenient transportation and communication, good infrastructure, and "external economies of scale,"[7] such as easy access to financial institutions, trading companies, and export agents. However, rising labor costs and the instability of raw materials supply[8] along the coast have driven the apparel industry from coastal areas to inland locations, forming a more geographically dispersed industry. Coastal firms have been compelled to move inland to achieve lower labor costs as firms in other Asian countries (as well as inland Chinese firms) become more competitive in the apparel industry. Furthermore, the coastal areas have been among the earliest regions in China to implement economic reforms, resulting in increased competition from Chinese private investors and

[1] Almanac of China's Textile Industry, 1996, p. 24.

[2] Ibid., p. 207.

[3] Ibid., p. 25.

[4] Ibid.

[5] See Appendix A, Table 3 for detailed information on transshipments.

[6] "Comparison of the 1992-1993 Merchandise Trade Statistics of the United States and the People's Republic of China," CB-96-56, US Department of Commerce News, Economics and Statistics Administration, Bureau of the Census, Washington, DC 20230.

[7] The Global Economy in Transition, second edition, by Brian J. L. Berry, Edgar C. Conkling, D. Michael Ray, Prentice-Hall International, Inc., 1996, p p. 242, 262, 466.

[8] Historically, China's government policies dictated that the apparel industry be concentrated in the coastal areas, with the textile industry located in inland locations as well as in the coastal areas. In the mid-1980's, changing government policies led to the migration of textile firms to inland and western locations under local control. This has led to decreased stability in textile supply to the coastal regions.

foreign investors in the apparel industry in that area.[9] Privately-owned enterprises, with their modern equipment and greater flexibility in product type, distribution channels, and types of incentive systems, are particularly fierce competitors.

In 1992, China initiated efforts to establish a market economy. Reforms were expanded in previously untouched areas -- for example, foreign retailers were allowed entry into China for the first time, major changes were introduced in the structure and role of financial institutions, and government policies that disallowed forward and backward integration in the fiber-textile-apparel-retail channel were removed. These reforms improved the flexibility and responsiveness of the Chinese apparel industry. Over time, the Chinese apparel industry has progressed from being largely volume-driven (to meet domestic demand which far exceeded supply) in the 1960s and 1970s, to being export-driven (to bring foreign currency into the country) in the 1980s and early 1990s, to being more consumer-oriented in order to survive and prosper in the late 1990s. Private firms compete through better market intelligence and more flexibility in their production systems, incentive systems, and channels of distribution. A few State-Owned Enterprises (SOEs) with strong support from local government perform well by taking advantage of easy access to funds, advanced equipment, and raw materials, although the majority of SOE's performance has lagged that of private firms. Responsiveness to market needs is further enhanced by the direct sourcing of apparel products by foreign brands and the sophisticated marketing skills of joint-venture (JV) partners.

Notes

1. The 1996 Almanac of China's Textile Industry derived its statistical figures from the third industry census, which covered township level and above with independent accounting system enterprises and village, jointly-operated, private, and individual enterprises with an annual sales revenue above 1 million RMB. The difference in statistical coverage has made the figures in the 1996 Almanac on the high side relative to those in previous years' editions of the Almanac of China's Textile Industry.

2. This report contains some inconsistent data, in part because different data sources have somewhat different industry coverage and use different statistical methods. We have tried to note these discrepancies as they arise in the report.

3. Whenever the data reported by Chinese sources differ from those reported by U.S. sources, the Chinese figure is reported in this report. Some research has been done by both sides to reveal the causes of these differences, as reported, for example, in "CB-96-56, U.S. Department of Commerce News, Economics and Statistics Administration, Bureau of the Census, Washington, DC 20230.

[9] The low barriers to entry in the apparel industry (especially the low capital investment required) led to early entry into this industry by private investors with limited capital as well as by foreign investors interested in "testing the waters" in China without incurring substantial risk.

1. Industry Indicators

1.1 Factory Output Volume

China is the largest apparel producer in the world with factory output of about 9.685 billion pieces in 1995, 24.2% higher than the previous year of 7.8 billion pieces.[10]

Table 1.1-1 Growth of Apparel Factory Output, 1978-1995, in billions of pieces[11]

Year	Output	Annual Growth Rate	Year	Output	Annual Growth Rate
1978	0.673		1987	2.260	NA
1979	0.744	11%	1988	2.911	29%
1980	0.945	27%	1989	3.003	3%
1981	1.008	7%	1990	3.175	6%
1982	0.985	-2%	1991	3.384	7%
1983	1.004	2%	1992	4.266	26%
1984	1.106	10%	1993	6.368	49%
1985	1.267	15%	1994	7.816	23%
1986	NA	NA	1995	9.685	24%

Notes: NA = Not Available

Compound Annual Growth Rate (CAGR) = 17%

1.2 Textile and Apparel Exports

Textile and Apparel Exports

Apparel and textiles[12] have been important Chinese exports since the introduction of economic reforms in the 1970s, representing, for example, 29.38% of the value of total Chinese exports in 1994.[13] Although textile and apparel exports as a percent of total Chinese exports declined to 25.5% in 1995,[14] the textile and apparel industries continue to be important in bringing foreign currency into China. In 1995 these industries ranked second in export value,[15] but together were the leading net currency earners among Chinese exports.

[10] Almanac of China's Textile Industry, 1996, p. 207.

[11] Data Source: Almanac of China's Textile Industry, 1996, p. 207.

[12] The textile category includes fiber.

[13] Xi Yujun, The Information of Textile Foreign Trade, China Textile News Publishing House, 25th, January, 1996.

[14] Xi Yujun, The Information of Textile Foreign Trade, China Textile News Publishing House, 25th January, 1996.

[15] Mechanical and electronic industries ranked first among Chinese exports. This category includes machinery, electric equipment and accessories, recorders, video-recorders, and accessories.

Apparel Exports

During the mid- to late-1990s, apparel represented roughly two-thirds of China's combined textile and apparel exports in value.[16] As shown in Table 1.2-1, apparel exports grew at a compound annual growth rate of 22.2% during the 19-year period from 1978 to 1997. In 1994, China replaced Hong Kong as the leading apparel exporter in the world, reaching US$23.722 billion,[17] and accounting for 16.7% of the global apparel export market. Most Chinese apparel exports were basic, inexpensive items.

As shown in Table 1.2-2, in 1994, 21 countries or regions each imported more than US$100 million worth of apparel from China; the largest importer of Chinese apparel among these was Hong Kong, which imported over 30% of China's total apparel exports. These 21 countries or regions represented over 80% of China's total apparel exports.[18]

Apparel exports by Joint Venture Enterprises (JVEs) have been booming, representing US$8.75 billion in 1994, or 36.9% of the total China's apparel exports.[19]

Table 1.2-1 Chinese Apparel Exports, 1978-1997[20]

Year	Apparel Exports (in US$ billions)	Annual Growth Rate	Year	Apparel Exports (in US$ billions)	Annual Growth Rate
1978	0.708		1988	4.872	30.0%
1979	1.059	49.6%	1989	6.130	25.8%
1980	1.635	54.4%	1990	6.848	11.7%
1981	1.864	14.0%	1991	8.998	31.4%
1982	1.949	4.6%	1992	16.748	86.1%
1983	2.060	5.7%	1993	18.428	10.0%
1984	2.653	28.8%	1994	23.721	28.7%
1985	2.050	-22.7%	1995	24.049	1.4%
1986	2.915	42.2%	1996	25.000	4.0%
1987	3.748	28.6%	1997	31.754	27.0%

Compound Annual Growth Rate (CAGR) = 22.2%

[16] See Table1.2-3.

[17] It is worth comparing these numbers to those of the US Department of Commerce, which reports apparel imports from China of US$6.3 billion and textile imports of US$1.0 billion, for a total of $7.3 billion and US apparel imports from China of US$7.4 and textile imports of US$1.4 billion, for a total of $8.8 billion. See "Comparison of the 1992-1993 Merchandise Trade Statistics of the United States and the People's Republic of China.

[18] Cheng Zhenghua, Towards the Garment Market of 2000, April, 1995.

[19] Prior to 1978, this number was 0, since JVEs were not allowed in China.

[20] Sources: 1978-1994 data from Cheng Zhenghua, Towards the Garment Market of 2000, April, 1995. 1995 data from The Information of Textile Foreign Trade, China Textile News Publishing House, 25 January, 1996. 1996-1997 data from China Fashion Weekly, May 8, 1998.

Table 1.2-2 Value of China Apparel Exports by Country or Region of Destination, 1994[21] (Value is given in US$ Million)

Rank	Country/ Region	Value	Share (%)
1	Hong Kong	7,159	30.18
2	Japan	5,652	23.87
3	USA	2,427[22]	10.23
4	Germany	691	2.91
5	Australia	435	1.83
6	Russia	388	1.64
7	S. Korea	344	1.45
8	UK	304	1.28
9	Sweden	239	1.00
10	Canada	222	0.94
11	Italy	210	0.89

Rank	Country/ Region	Total Value	Share (%)
12	Taiwan	201	0.85
13	U. Arab	188	0.79
14	S. Arab	186	0.78
15	France	168	0.71
16	Macao	166	0.70
17	Malaysia	149	0.63
18	Netherlands	148	0.62
19	Switzerland	128	0.54
20	Singapore	120	0.51
21	Poland	112	0.47
22	Others	4,085	17.22
	Total	23,722	100.00

Table 1.2-3 China's Apparel Industry Exports as a Percent of Total Textile & Apparel Exports, 1978-1997[23]

Year	Share (%)
1978	29.1
1979	31.7
1980	37.5
1981	41.0
1982	43.8
1983	41.5
1984	41.8
1985	38.7
1986	40.9
1987	39.3

Year	Share (%)
1988	43.0
1989	46.7
1990	49.5
1991	53.8
1992	66.1
1993	57.9
1994	66.7
1995	63.3
1996	67.4
1997	69.7

[21]Source: Cheng Zhenghua, Towards the Garment Market of 2000, April, 1995, A Collection of Treatises on Clothing and Accessories in China, 1985-1995, Shanghai Fashion & Accessories Society, 1985-1995.

[22] This is different from the U.S. Department of Commerce (DOC), which reports apparel imports from China of US$6.3 billion in 1994. It could be that the U.S. DOC is adding some of the transshipment volume reported above as exports to Hong Kong. Or, it may be that Chinese figures consider only the value-added from "processing contractors," which use imported fabric provided by the customer, whereas the U.S. DOC considers total value of garments imported (unless US textiles were used).

[23] Source: China Customs.

1.3 China's Apparel Imports

As shown in Table 1.3-1, China's apparel imports have grown rapidly since 1978, with a compound annual growth rate of 47.1% from 1978 to 1996. The table indicates a sharp increase in China's apparel imports in 1992, which can be attributed by economic reforms that first allowed foreign retailers access to China's market. In 1996, China's total apparel imports were US$1044.48 million.[24]

In 1994 there were six countries or regions that individually exported more than US$10 million of apparel products to China. Hong Kong ranked first, with 33.4% of China's total apparel imports.[25] By 1996, Japan has surpassed Hong Kong as the largest source of apparel imports into China.[26]

As shown in Table 1.3-4, Chinese apparel imports of knitwear have steadily declined during the 1990s, from 33.23% in 1992, to 17.49% in 1996. In 1994, garments made of woven fabric comprised 72% and knitwear 28% of all apparel imports.[27] In 1995, an estimated 80% of imported garments were made of woven fabric, whereas 20% were knitwear.[28]

Table 1.3-1 Growth of China's Apparel Imports, 1978-1996 (in Millions of US$)[29]

Year	Imports	Annual Growth Rate
1978	1	
1979	5	400%
1980	21	320%
1981	15	-29%
1982	7	-53%
1983	3	-57%
1984	6	100%
1985	15	150%
1986	14	-7%
1987	17	21%
1988	28	65%
1989	38	36%
1990	48	26%
1991	61	27%
1992	402	559%
1993	510	27%
1994	572	12%
1995	970	70%
1996	1044	8%

CAGR = Compound Annual Growth Rate = 47.1%

[24] Fashion Times, May 29 1998, p. 5.

[25] See Table 1.3-2.

[26] See Table 1.3-3.

[27] Source: Cheng Zhenghua, Towards the Garment Market of 2000, April, 1995, A collection of Treatises on Clothing and Accessories in China, 1985-1995, Shanghai Fashion & Accessories Society, 1985-1995.

[28] The Information of Textile Economy, Research Centre of China Textile Economy & Information Centre of China Textile Council, 12th Feb. 1996.

[29] Sources: 1978-1994 data from Research Center of Textile & Apparel Economy, 1995. 1995 data from Almanac of China's Textile Industry, 1996. 1996 data from Fashion Times, May 29 1998, p. 5.

Table 1.3-2 Chinese Apparel Imports from Countries or Regions, 1994[30]

Country &Region	Value (million US$)	Percent of Total Imports (%)
Hong Kong	191	33.4
Japan	165	28.8
Taiwan	48	8.4
S. Korea	30	5.2
USA	11	1.9
E.U.	10	1.7
Others	117	20.5
Total	572	100.00

Table 1.3-3 Chinese Apparel Imports from Countries or Regions, 1996[31]

Countries & Countries	Value (million US$)	Percent of Total Imports (%)
Japan	440.791	42.20
Hong Kong	310.059	29.69
South Korea	110.210	10.55
Taiwan	49.174	4.71
USA	7.858	0.75
Australia	5.643	0.54
Italy	4.925	0.47
Germany	1.879	0.18
Brazil	1.034	0.10
France	0.58	0.06
All others	112.475	10.76
Total	1,044.477	100.00

[30] Source: China Customs.

[31] Data source: Fashion Times, p. 5, May 29, 1998.

Table 1.3-4 Composition of China's Apparel Imports in 1992, 1995, 1996[32]

Year	1992	1995	1996
Knitwear and accessories	33.23%	19.10	17.49
Garments made woven and other non-knitted fabrics and accessories	63.45	77.63	77.27
Leatherwear and accessories	1.91	2.53	NA
Fur wear and accessories	1.41	0.74	NA
Total	100.00%	100.00%	100.00%

Note: NA = Not Available

[32] Source: Fashion Times, May 29 1998, p. 5.

2. China's Apparel Wholesale And Retail Industry

2.1 Domestic Market

In 1954, severe supply shortages in the apparel industry drove the Chinese government to establish a "coupon" system to ration garments to Chinese citizens. With the development of the domestic apparel and textile industries, this system was phased out in 1983.

In 1994 the total sales of apparel amounted to 260.2 billion RMB.[33] In 1996, the total sales of clothing jumped to 287.2 billion RMB.[34] With a population exceeding 1.2 billion people and the sharp increase in consumption by Chinese citizens, China has become one of the largest markets in the world. Given the significant opportunities for further increase in per capita consumption of consumer products, the market potential in China is immense. The industry growth is reflected in the growth in wholesalers, retailers, and their employees, as shown in the table below.

	Number of Wholesale Establishments	**Employees in Wholesale Establishments**	**Number of Retail Establishments**	**Employees in Retail Establishments**
1994[35]	117,831	607,809	1,446,306	2,795,815
1996[36]	205,385	765,669	2,018,136	4,030,888

As shown in Table 2.1-1, although the value of apparel sold has increased tenfold since 1978, apparel expenditures as a percent of total retail purchase of consumer goods has halved during this period.

Open wholesale "marts"—which are wholesalers run by local governments that also sell to individual consumers—have played an important role in the distribution of Chinese apparel. In 1995, the sales of the top 20 specialized textile and apparel trade markets totaled 129.81 billion RMB.[37] (This topic is detailed in Appendix A Table 1).

[33] China Statistical Yearbook, 1995. See Table 2.1-1.

[34] China Statistical Yearbook, 1997. See Table 2.1-1.

[35] China Statistical Yearbook, 1995.

[36] China Statistical Yearbook, 1997. Textile products, garments, shoes and hats are included.

[37] Because mart sales include both wholesale sales to retailers and consumer sales, this volume is not strictly a subset of the total retail sales of 244.8 billion RMB in 1995 reported in Table 2.1-1.

Table 2.1-1 Total Retail Sales Growth of Consumer Goods[38]

Year	All Consumer Goods (in Billions of RMB)	Apparel Products (in Billions of RMB)[39]	Apparel Products as a Percent of Total Consumer Goods Sales
1978	126.5	27.85	22%
1980	179.4	41.37	23%
1984	289.9	57.03	20%
1985	380.1	71.74	19%
1986	437.4	77.26	18%
1987	511.5	88.23	17%
1988	653.4	110.9	17%
1989	707.4	115.2	16%
1990	725.0	118.2	16%
1991	824.5	135.6	16%
1992	970.5	158.2	16%
1993	1246	203.1	16%
1994	1627	260.2	16%
1995	2062	244.8	12%
1996	2477	287.2	12%
CAGR (84 – 96)	19.6%	14.4%	

2.2 Consumer Expenditures and Buying Power

With the development of the Chinese economy brought about by economic reforms, the consumer goods market has flourished. As shown in Table 2.1-1, in 1996, consumer goods sales totaled 2,477 billion RMB,[40] up 20.1% from 1995.

With the growth of income, the Chinese have spent more money on consumer products than ever before. From 1978 to 1996, the annual consumption per capita increased from 184 RMB to 2,677 (in 1996 currency), with an average annual growth rate of 38.9% from 1990 through 1996.[41] Urban

[38] Source: China Statistical Yearbook, 1992-1997.

[39] These data were reported directly in the China Statistical Yearbook prior to 1995. Because of a change in reporting method, the apparel figures were computed based on the following weighted average:

Total Consumers' consumption on clothing = per capita consumption of non-farmer households * population of non-farmer households + per capita consumption of farmer households * population of farmer households.

[40] China Statistical Yearbook, 1997, p. 551.

[41] See Table 2.2-2.

residents spent more than the rural residents because of their higher income.[42] Prices have been growing in this process.[43]

Table 2.2-1 Growth of Annual Per Capita Chinese Income (in RMB)[44]

Year	Urban Residents[45]	Rural Residents
1978	316	133.6
1980	439	191.3
1985	685	397.6
1989	1261	601.5
1990	1387	686.3
1991	1544	708.6
1992	1826	784
1993	2337	921.6
1994	3179	1221
1995	3893	1578
1996	4377	1926

In 1992, China first allowed foreign retailers to compete in China. The pioneers were primarily name brands that provided licenses or franchises for specialty stores in China. These included Giordano (Hong Kong, 1992), Nike (U.S., 1992), Stefanell (France, June 1992), Esprit (U.S., December 28th 1992), Adidas (U.S., Jan. 23rd 1993), Mexx (Holland, 1993), Jeanswest (Hong Kong, May 1993), Liz Claiborne (U.S., April 8th 1994), and Benetton (Italy, October 1994). Also, some overseas retailers established department stores in China, including Printemps (France), Sincere (Hong Kong), Shuihing (Hong Kong) and Isetan (Japan). Although name brand apparel is sold at a relatively lower price in China than out of China,[46] the number of people who can afford to by these items is still limited.

[42] China Statistical Yearbook, 1997.

[43] See Table2.2-3.

[44] Data source: China Statistical Yearbook, 1997, p. 293.

[45] Data in this column come from the data collected by the sample survey on the urban households. The possibility of the subjects concealing their real income may cause these data on the low side; even less than the per capita consumption data in Table 2.2-2.

[46] See Appendix A, Table 4-1, 4-2, 4-3, 4-4.

Table 2.2-2 Annual Per Capita Consumption of Consumer Goods (in RMB) [47]

Year	All Residents	Agricultural Residents	Non-Agricultural Residents
1978	184	138	405
1980	236	178	496
1985	437	347	802
1986	485	376	920
1987	550	417	1089
1988	683	508	1431
1989	762	553	1568
1990	803	571	1686
1991	896	621	1925
1992	1070	718	2424
1993	1331	855	3027
1994	1737	1087	3956
1995	2311	1479	5044
1996	2677	1756	5620
CAGR (85 – 96)	17.9%	15.9%	19.4%

[47] Source: China Statistical Yearbook, 1997.

Table 2.2-3 General Consumer Price Index, 1985 –1996[48]

Year	General Consumer Price Index
1985*	100.0
1986	106.5
1987	114.3
1988	135.8
1989	160.2
1990	165.2
1991	170.8
1992	181.7
1993	208.4
1994	258.6
1995	302.8
1996	327.9

*Note: Take the price in 1985 as 100.

Table 2.2-4 Growth of Chinese Per Capita Annual Living Expenditures and Clothing Expenditures (in RMB)[49]

	URBAN HOUSEHOLDS			RURAL HOUSEHOLDS		
Year	Living Exp.	Clothing Exp.	Clothing/ Living Exp.	Living Exp.	Clothing Exp.	Clothing/ Living Exp.
1978	NA	NA		116.06	14.74	12.7
1980	NA	NA		162.21	19.99	12.3
1985	673.2	98.04	14.6%	317.42	30.86	9.7%
1990	1278.89	170.9	13.4%	584.63	45.44	7.8%
1991	1453.81	199.64	13.7%	619.79	51.07	8.2%
1992	1671.73	240.6	14.4%	659.01	52.51	8.0%
1993	2110.81	300.61	14.2%	769.65	55.33	7.2%
1994	2851.34	399	14.0%	1016.81	70.32	6.9%
1995	3537.57	479.2	13.5%	1310.36	88.66	6.8%
1996	3919.47	527.95	13.5%	1572.08	112.7	7.2%

[48] Source: China Statistical Yearbook, 1997, p. 267

[49] Source: China Statistical Yearbook 1992-1997. See Appendix A, Table 5 for percent of urban and rural population in the total population of China.

Table 2.2-5 Annual Per Capita Garments Bought by Urban Households (in pieces)[50]

Year	1985	1986	1987	1988	1989	1990	1991
Cotton	0.47	0.44	0.36	0.38	0.32	0.29	0.31
Synthetic	1.22	1.37	1.30	1.33	1.28	1.40	1.66
Wool	0.19	0.20	0.18	0.18	0.16	0.17	0.21
Silk	0.07	0.10	0.11	0.10	0.09	0.10	0.10
Knit	1.45	1.65	1.56	1.56	1.39	1.51	1.49
Total	3.40	3.76	3.51	3.55	3.24	3.47	3.77

Table 2.2-6 Annual Per Capita Garments Bought by Urban Households (in pieces)[51]

Year	1992	1993	1994	1995	1996
Men's	1.81	1.84	1.83	1.92	1.96
Women's	2.28	2.32	2.38	2.50	2.62
Children's	1.12	1.06	0.99	0.95	0.95
Total	5.21	5.22	5.20	5.37	5.53

Table 2.2-7 Consumption Pattern of Rural vs. City Market[52]

Levels	Rural Market	City Market
High-grade softgoods	NA	0.6%
Middle-grade softgoods	26%	70%-75%
Low-grade softgoods	60%	25%

[50] Source: China Statistical Yearbook 1992. These data show per capita purchases of garments of different types of material. These data are not available after 1991.

[51] Source: China Statistical Yearbook, 1993-1997. These data show per capita purchases of garments intended for men, women and children. It is not the average number of garments bought by men, women and children, respectively. These data are not available before 1992.

[52] Almanac of China's Textile Industry, 1994.

3. Industry Structure

3.1 Ownership Structure

Before the 1950s, most of the China's garment factories were privately owned. Then, during the Campaign of Joint State-Private (from 1952 - 1956), those factories were converted into collective and state-owned enterprises (SOEs). In some ways, this campaign was similar to nationalization, except that the former private owners retained some control over the enterprises (typically receiving some portion of the profits and participating in the management of the company). By 1978, almost all of China's apparel enterprises were collective & state-owned.

As a result of the economic reforms and open policies initiated in 1978, the ownership structure of China's apparel industry has evolved into a co-existence of private, collective, rural township (RT), SOE and joint-venture enterprises (JVEs).

There are several ways to characterize apparel firms in China. All firms are privately-owned, collective, SOEs, foreign owned, or JVEs. **SOEs** are owned by the central government, a province, or a county. **Collectives** can be further subdivided into rural township (RT) and other (typical urban) collectives. **RTs** are collectives owned by small villages and towns. **Other collectives** are owned by communities within urban environments, for example by a district government, a university, or any other group of individuals. **Privately-owned** firms are owned by Chinese individuals. **Foreign-owned** firms are fully owned by foreign investors. A **JVE** may be formed between a foreign partner and a collective, a privately-owned firm, or an SOE. Sometimes, a JVE is formed by breaking off part of a firm to become a new enterprise – other times an entire firm is transformed into a JVE when a foreign investment is made. Some foreign partners participate in the management of the JVE, whereas others have only a financial investment in the enterprise.

<table>
<tr><td rowspan="2">SOEs</td><td colspan="2">Collectives</td><td rowspan="2">Privately owned</td><td rowspan="2">Foreign Owned</td><td rowspan="2">JVE</td></tr>
<tr><td>RT</td><td>Urban Collectives</td></tr>
</table>

Inconveniently, the term RT is used to designate both pure rural townships and JVEs formed with RTs. Thus we use the term "pure RT" in the following text when it is important to indicate an RT that is not part of a joint venture. Conversely, the term SOE designates only "pure" SOEs (that is not SOEs in joint ventures), and privately owned refers to only "pure" privately owned firms.

RTs (pure RTs or JVEs formed from RTs) are the largest apparel producers in China on almost every dimension – the number of enterprises, the volume of product produced, and exports. The output volume of RTs comprised 76.44% and 91.21% of the national apparel output in 1992 and 1993, respectively.[53] In 1996, RT output was estimated to be 80% of total apparel output.[54] SOEs comprised the second largest number of apparel establishments.

The number of JVEs in the apparel industry grew rapidly in the early 1990s. There were 12,194 apparel JVEs in existence in 1995.[55] In 1995, JVEs exported US$7.68 billion apparel products, up 16.5% from 1994 of US$6.59 billion. In 1995, JVE exports comprised 31.98% of China's total apparel exports, 4.7 points higher than the previous year, even though roughly 90 percent of the JVEs' exports were "processing only" enterprises (i.e. they cut and sewed garments made of fabric provided

[53] Almanac of China's Textile Industry, 1994, p. 143.

[54] Xinmin Night News, June 12, 1997.

[55] 'China's Ever Shining Industry: Apparel', Tan-an, Wu Qi-liang, China Textile & Apparel, Dec. 1995/ Jan. 1996.

by the foreign customer) which has low value-added.[56]

Table 3.1-1 The Ownership Structure of Independent Accounting Units[57] (Number of Establishments, Chinese Sewing Industry)[58]

Year	SOE	Total Collective Ownership	RT ownership (included in Total Collective Ownership)
1987	NA	NA	7,475
1988	613	17,008	6,971
1989	642	16,091	6,408
1990	681	15,791	6,226
1991	729	15,612	6,318
1992	NA	NA	6,146
1993	892	15,897	5,465
1994	918	16,212	5,648

3.2 The Geographic Distribution of China's Apparel Industry

The majority of Chinese apparel factories are located in coastal areas. The next largest number of firms is located in the midland provinces, and the smallest number in the western provinces.[59]

This geographic distribution of China's apparel industry has been driven by the following factors:

1. The coastal area is China's traditional location for its apparel industry as well as for upstream industries such as the textile industry and synthetic fiber industry. In addition, there are more qualified workers in the coastal areas than the rest.

2. The open door policy was first applied in the coastal areas and the main Economic Development Zones. Shenzhen, Zhuhai, Haikou, Ningbo, Shanghai, Dalian, Qingdao, Xiamen are all located in coastal areas.

3. This area is of high population density and the people there with higher income and better education are more conscious of fashion than in other areas, thereby leading to better market potential.

[56] The Information of China's Textile Foreign Trade, February 29, 1996, China Textile News Publishing House.

[57] The legal units of Independent accounting refer to enterprises engaging in industrial production activities, which meet the following requirements: 1. Established legally, having their own names, organization, location, able to take civil responsibility; 2. Process and use their assets independently, take liability, have authority to sign contract with other units; 3. Financially independent and compile their own statement of assets and liabilities.

[58] Sources: China Economic Statistical Yearbook, 1988-1994; China Industrial Economic Statistical Yearbook, 1988-1994.

[59] Coastal area includes Beijing, Fujian, Guangdong, Guangxi, Hainan, Hebei, Jiangsu, Liaoning, Shandong, Shanghai, Tianjin and Zhejiang (12 provinces and municipalities in the total). Midlands includes Anhui, Henan, Heilongjiang, Hubei, Hunan, Jilin, Jiangxi, Inn Mongolia, Shannxi and Yunnan (10 provinces in total). West area includes Gansu, Guizhou, Ningxia, Qinghai, Shanxi, Sichuan, Xizang and Xinjiang (8 provinces in total).

4. There are relatively well-equipped infrastructures in the area, making it attractive to foreign investors.

The sharp increase in labor cost, especially in the coastal areas, has increased the wage gap among the coastal, middle, and western provinces. This wage gap puts coastal apparel factories under pressure to cut down their production, move the plants to the middle or west, or employ workers from the inland provinces. For example, the Shanghai Meixu Fashion Company, a Sino-Japanese JVE, employs mostly workers from Hubei Province (a province west of Shanghai). The company saves about half of its labor cost by employing non-Shanghai workers.

In 1994, there were 11 provinces and municipalities whose apparel output exceeded 100 million pieces; the value of their collective output comprised 90% of that of China's total apparel output. In order of largest to smallest output, the provinces were Guangdong, Zhejiang, Jiangsu, Shandong, Shanghai, Sichuan, Hebei, Liaoning, Hubei, Fujian, Henan, Beijing and Tianjin. In 1995, there were 12 provinces and municipalities with output of more than 100 million pieces, although their location had shifted somewhat. In order of largest to smallest output, they were Guangdong, Zhejiang, Jiangsu, Shanghai, Shandong, Hebei, Anhui, Sichuan, Liaoning, Fujian, Hubei and Tianjin. Meanwhile four provinces grew more than 25% in 1995: Anhui (53.0%), Guangxi (32.05%), Guangdong (30.04%), and Yunnan (28.21%).[60] The above data illustrated that the coastal provinces Guangdong, Jiangsu, Zhejiang, Shanghai, Shandong and Hebei continue to be the main sources of China's apparel industry.

3.3 The Distribution of Sizes of Chinese Apparel Establishments

We have been unable to attain government data on the distribution of sizes of Chinese garment factories. Fortunately, we conducted a survey of apparel establishments in July and August of 1995. The survey focused on the type of equipment and technology employed by each plant. The survey indicated that:

1. Half of the China's apparel factories are relatively large (over 500 employees per plant), about 20% of the factories are middle-sized (200 to 500 employees), and about 30% are of small size (less than 200 employees).

2. On average, apparel establishments in the coastal area are larger than those of the midlands and western areas.

[60] Almanac of China's Textile Industry, 1996, p. 24.

Table 3.3-1 The Size of Chinese Sewing Establishments[61]

Size	>1,000		500 -1000		200 - 500		50 - 200		<50		Subtotal	
Region	**NOE**	**%**	**NOE**	**%**	**NOE**	**%**	**NOE**	**%**	**NOE**	**%**	**NOE**	**%**
Coastal	13	16.5	28	35.4	18	22.8	18	22.8	2	2.5	79	100
Midlands	11	28.9	7	18.4	8	21	9	23.7	3	7.9	38	100
West	4	20	2	10	4	20	8	40	2	10	20	100
Total	28	20.4	37	27	30	21.9	35	25.5	7	5.1	137	100

Notes: NOE stands for the number of establishments in the category indicated. Percentages should be read across rows rather than columns; they indicate the percent of all enterprises in the stated region in the designated size range.

3.4 The Evolution of Apparel Industry Administration

China's ready-to-wear industry has developed gradually since the 1950s. Before that time, the majority of clothing Chinese people wore were made at home or in a tailor's shop.

From the 1950s to the mid-1980s, apparel manufacturers were administrated by various central government ministries, including the Light Industry Ministry. (Apparel enterprises owned by retailers were overseen by the Commercial Department.) On December 1st, 1986, the Central Government began an effort to transfer those apparel firms under The Light Industry Ministry to the China Textile Ministry to facilitate vertical integration across the textile and apparel industries as well as to increase the coordination between the two industries. On June 21, 1993, the China National Textile Council (CNTC) replaced the China Textile Ministry. In 1994, firms administered by the CNTC represented approximately 40% of all apparel firms in China in number, but produced approximately 60% of apparel output.[62]

On April 16, 1998, the National Textile Industry Bureau was founded, taking the place of CNTC as the administrative overseer of the apparel and textile industries.

[61] Source: These figures are from a survey we conducted in July and August of 1995, at the establishment (i.e. individual factory) level. In the survey, 137 enterprises from the coastal, midland, and western regions of China were sampled. The sampling establishments in the coastal areas were drawn from Beijing, Guangdong, Hebei, Liaoning, Shandong, Shanghai, Tianjin, and Zhejiang. The sampling enterprises in the midlands were drawn from Anhui, Henan, Hubei and Jiangxi. The sampling enterprises in the west areas were drawn from Shanxi, Sichuan, and Xinjiang.

These provinces were chosen because:

1. Provinces with an abundant labor force provide enough labor resources to the apparel industry, which requires labor-intensive work. So provinces with a large output of agricultural products – which implies an abundant labor force in China – were chosen, such as Shandong, Liaoning, Henan, Anhui, Jiangxi and Shanxi.
2. Provinces that produce large quantities of cotton were also chosen, such as Hubei, Xinjiang and Sichuan.
3. Coastal areas and the three municipalities were chosen, since their apparel industry are relatively well-developed.

[62] Almanac of China's Textile Industry, 1996, p. 24.

4. The Performance of China's Apparel Industry

4.1 Profit and Cost Structure

4.1.1 Cost Structure

For apparel firms that purchase their own fabric, labor costs are relatively low compared to material costs and overhead expenses. For example, for a man's suit, the cost of materials (including thread, buttons, etc.) is approximately 2/3, the overhead expenses are just above 1/6, and labor costs are just below 1/6 of total costs SOEs have to pay retirees, so the overhead costs in an SOE are larger than in JVEs and RT enterprises.[63]

For apparel firms that use fabric supplied by their customers, labor costs typically account for 30-40% of total costs, overhead expenses are 40-50%, and thread, needles, buttons, zippers and other supplies comprise the remaining 10%.

In recent years, operating costs in both of the above cases have increased due to inflation, escalating wages, rising utility costs (including water, electrical power and gas), and increases in the price of raw materials. For example, in 1993 the price of cotton rose 12.4% over the previous year, in 1994 it rose 54.37%, and in 1995 it rose 35.5%.[64]

Table 4.1-1 Country Comparison: Production Costs (China & Selected Countries)[65]

Clothing & Footwear	China	Hong Kong	Thai-land	South Korea	Mexico (U.S. Border)	Ger-many	UK	USA
Productivity	75%	90%	65%	65%	70%	100%	100%	90%
Absenteeism	7%	6%	10%	8%	15%	10%	9%	5%
Avg. Hourly Wages (including incentives) (in US$/hr)	0.43	4.18	0.92	0.54	0.48	12.51	6.04	6.00
Wages Plus Social Costs (in US$/hr)	0.47	4.81	1.06	0.62	0.79	22.77	7.49	8.70
Overhead costs per attended hr (in US$/hr)	0.63	2.14	0.83	0.44	0.67	2.22	1.68	1.49
Cost per SAH[66] Produced (in US$/ SAH)	5.99	13.6	8.48	10.82	7.64	31.64	14.54	17.75

Notes: Exchange rates as of October 1995. SAH stands for Standard Allowed Hour.

[63] SOEs are older organizations that traditionally had a responsibility to pay retirees. RTs and JVEs didn't have this responsibility. A social security system (including endowment insurance, medical insurance, etc.) was recently established in China. Thus, firms will pay into a social security fund rather than making direct payments to retirees in the future.

[64] Almanac of China's Textile Industry, 1994 and 1996.

[65] Source: Kurt Salmon's Associates (KSA) – 46 Country Cost Comparison Report, 1995.

[66] Cost per SAH is defined as the manufacturing conversion cost (not including materials) to produce a Standard Allowed Hour of direct labor. All manufacturing overheads are included. Sales, general, administrative, and corporate overhead costs are not included.

4.1.2 The Influence of Government Tax Policy

Income tax

Preferential tax treatments have been given to JVEs. Compared to enterprises with other forms of ownership, JVEs have fewer taxes, lower tax rates and more preferential tax policies. For example, a JVE could be exempt from tax in its first two years of operation and need to pay only half tax in the next three years. However, this preferential tax policy was cancelled for the JVEs that registered after January 1st, 1996.

Table 4.1-2 Tax Rates of Enterprises

Enterprise Type	Tax Rate
SOEs (large and middle scale)	55%
SOE s(small scale) and Collective Enterprises	10%-55% (Progressive taxation)
Private enterprises	35%
JVEs	33%

Note: The tax reported above is the central government tax of earnings.

Value Added Tax

A value-added tax (17%) was introduced at the beginning of 1994. The government promised that enterprises procuring raw materials within China and converting them into products for exports would receive tax refunds. In August 1994, the government removed JVEs from this preferential treatment.[67] The value-added tax refund rate dropped from 17% in 1994 to 14% in 1995.

Business tax

This tax rate is 3% and is applied only to retailers.

4.1.3 Working Capital

Manufacturers for domestic market

Apparel manufacturers face a relatively high-risk domestic market and need funds for working capital. For example, in 1995, Yixiu Children's Wear Co., Ltd. (in Zhejiang Province) had 36 million RMB of fixed assets, annual sales of 400 million, and required 80 million in working capital.

Manufactures mainly for exports

For manufacturers who mainly do assembly for export, working capital requirements typically are lower. For example, Shanghai Xinye Garment Co., Ltd., which produces apparel mainly for the Japanese market, required working capital of 200,000 to 300,000 RMB. The company had an annual output of 300,000 pieces in 1995.

[67] JTN Monthly, February 1995.

Table 4.1-3 Capital Structure of the Sewing Industry (in Billions of RMB)[68]

Year	Number of Enterprises	Original Value of Fixed Assets	Net Value of Fixed Assets	End of Year Working Capital
1988	18,017	7.995	5.871	14.043
1989	17,031	9.538	7.010	16.967
1990	17,241	11.561	8.667	20.656
1991	17,499	15.190	11.239	26.886
1992	16,706	19.123	14.216	35.650
1993	17,921	27.204	21.159	41.671
1994	18,439	37.239	26.835	54.170

4.1.4 Investment and Financing

Manufacturers have few choices for financing their business. Bank loans are a common practice. For some manufacturers, leasing buildings and land is acceptable.

Table 4.1-4 Investment in the Garment Industry (in Millions of RMB)69

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Value	20	180	290	260	270	440	720	540	503	569	721

Note: The data are for enterprises overseen by the CNTC.

4.1.5 Profit

In recent years, the profits of export oriented apparel manufacturers have dropped significantly. The average profit rate of China's apparel industry was 7-8% in 1970s, 5% in 1980s, and less than 2% in 1995.[70] In 1996, the profit rate was negative.

Table 4.1-5 Average Profits per 100 RMB Sales in China Sewing Industry (in RMB)[71]

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996
Average profits per 100 RMB Sales	5.87	6.03	5.03	3.63	3.17	3.45	2.96	1.81	-0.95

[68] Source: China Industrial Economic Statistical Yearbook, 1989-1995.

[69] Source: Almanac of China's Textile Industry, 1995-1997.

[70] Almanac of China's Textile Industry, 1994 .

[71] Sources: 1988-1993 data from China Industrial Economic Statistical Yearbook, 1989-1994, 1994-1996 data from China Statistical Yearbook, 1995-1997.

4.2 The Organization of China's Apparel Industry

4.2.1 Labor Sources

The average wages of China's apparel industry are lower than those of other manufacturing industries in China. In recent years, an estimated 60 million workers from rural inland areas have flooded the cities in coastal areas.[72]

State-Owned Enterprises

In the past, SOEs hired only local workers. In recent years, SOEs have recruited non-local workers to fill their vacancies. For example, Shanghai No.5 Garment Factory employs 314 workers, of which 72 workers (23% of the total) come from rural inland areas.

Enterprises of other ownership

Enterprises of other forms of ownership typically hire more workers from rural inland areas than SOEs. For example, Shanghai Xinye Garment Co., Ltd. (a JVE) has 132 workers, of whom 104 are from rural inland areas (76.8%). Local workers constitute 21.2%.

Table 4.2-1 Labor Sources for Shanghai Xinye Garment Co., Ltd.

Province	**Number of Employees**
Local	28
Anhui	19
Hunan	9
Shanxi	4
Hubei	48
Jiangsu	11
Shandong	9
Sichuan	4

4.2.2 Labor Turnover

Labor Turnover

Generally, labor turnover peaks around the Spring Festival. Labor turnover is relatively low in SOEs compared to private enterprises. For example, almost half of the workers of the Shanghai Xinye Garment Co., Ltd. (a private enterprise) left the factory after the 1996 Spring Festival. The High Woolen Sweater Co., Ltd., a private apparel company located in Shanghai, also illustrates high labor turnover in private enterprises. High Woolen Sweater, established four years ago, now has only 2 of its original 70 workers remaining in the factory.

[72] Report of Shanghai People's Political Consultative Conference, Feb. 1996.

4.2.3 Labor - Management Relations

State-Owned Enterprises

SOE used to offer their workers lifetime employment, and paid pensions to workers after they retired. In the early 1990s, SOEs in the apparel industry started to set up contract relationships with their workers. The contract period in SOEs typically is longer than that in enterprises with other forms of ownership.

Private enterprises

In private enterprises, almost all employees work on a contract basis. After more than three months of probation, an employee signs a contract with the company under mutual consent. The contract period is usually between one to three years. During busy seasons, additional workers are hired.

Contract workers

By the end of 1993, there were 2.7 million contract workers in China's textile industry, approximately 38% of total.[73] By 1995, the number of contract workers had grown to 9.944 million, representing more than 80% of the workers in the industry.[74]

4.2.4 Worker Training

State-Owned Enterprises

In State-Owned Enterprises, new workers must be given a three-month training program upon hiring. During the training period they are provided a basic salary.

Private enterprises

Other than a few large firms, private enterprises have no special training programs for new employees.

4.2.5 Wages

State-Owned Enterprises

Before the economic reforms, apparel manufacturers paid their workers an hourly wage. An employee's wage was based on the number of years he or she had worked in the factory and on the employee's absenteeism record, but was not dependent on a worker's productivity.

Now, most apparel enterprises employ piece-rate compensation systems. After a standard production quantity is produced, sewing workers are paid a basic wage plus a piece-rate. In 1997, the average wage of an employee in a State-Owned apparel enterprise in Shanghai was about 800-950 RMB per month in Shanghai, up 15% from 1996.[75]

[73] Almanac of China's Textile Industry, 1994.

[74] Almanac of China's Textile Industry, 1996.

[75] Ibid.

Private enterprises

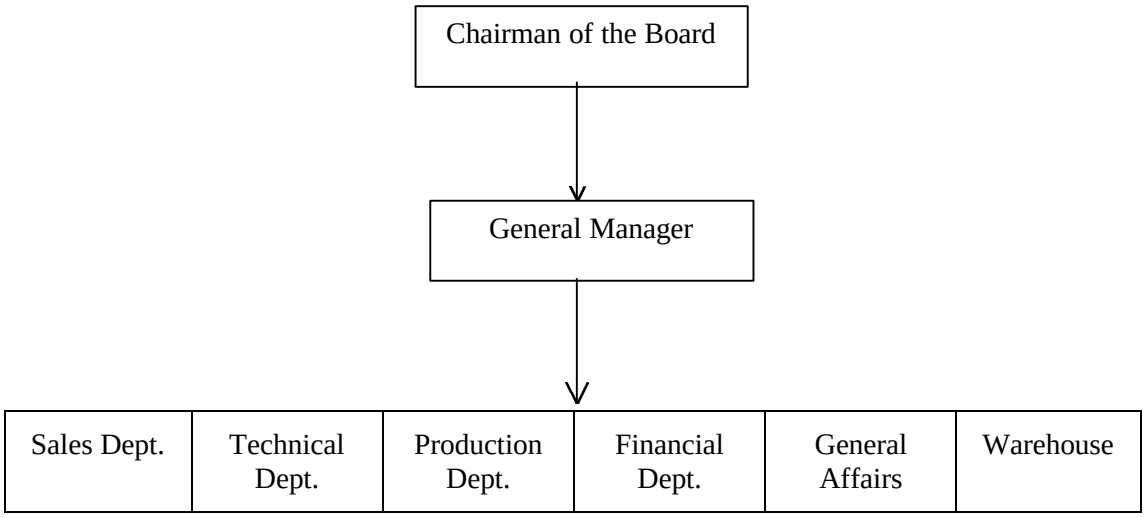
In private enterprises, a piece-rate system is used. In Shanghai, the average wage of a sewing worker in a private enterprise was 700-800 RMB per month on average in 1997. During busy seasons, the workers can get 950-1350 RMB per month because of extra shifts and hours, 15% higher than 1996.[76]

The average annual wages of manufacturing industries in China are showed in the Appendix A, Table 2. Note that in 1996, the average annual wage across all manufacturing industries in Shanghai was 10,051, or about 838 RMB per month. Thus, wages in the apparel sector are roughly in the average range for manufacturing wages, at least in the Shanghai area.

4.2.6 Organizational Structure

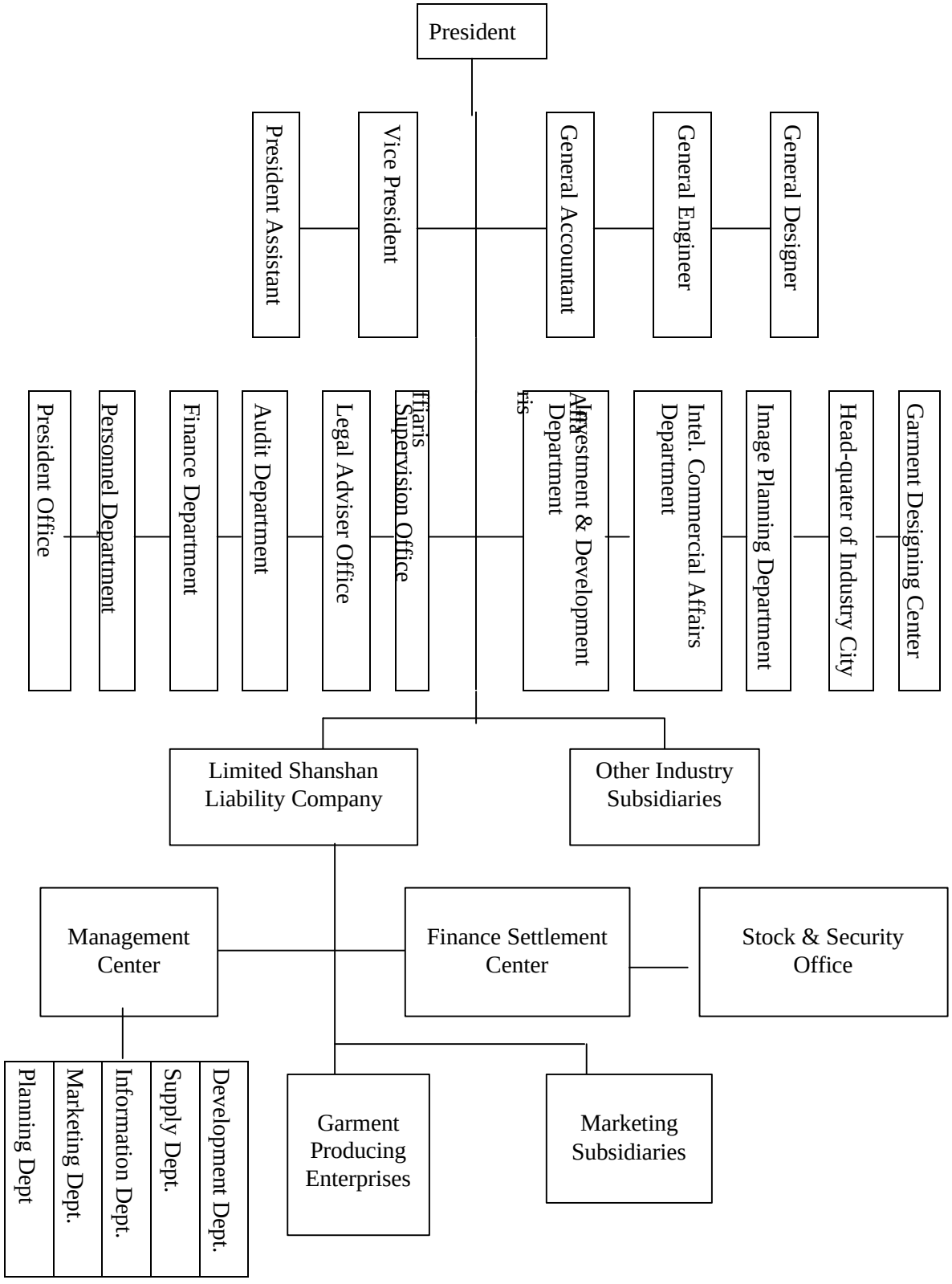
SOEs typically have more complicated organization structures than JVEs and RT enterprises of the same size, in part because of the heavy historical and social burdens (such as support of retired workers) they bear. Table 4.2-2 shows the organizational structure of a JVE; Table 4.2-3 shows the organizational structure of an SOE.

Table 4.2-2 Organizational Structure of Shanghai Xinye Garment Co., Ltd. (Sino-Japan JVE)



[76] Ibid.

Table 4.2- 3 The Organization Structure of Shanshan Group Co., Ltd. (SOE)



4.3 Technology & Facilities

4.3.1 Types of Production Systems Employed

Progressive Bundle System

In China, the Progressive Bundle System (PBS) remains dominant in apparel assembly.

Unit Production System

By the end of 1994, and estimated 20 sets of the Unit Production Systems (UPSs) were in use. The majority of these were imported from USA, Switzerland, Japan and Spain – examples include Gerber's GM001 and GM300 models, and the ETON2001 and ETON2000 models from Switzerland. The domestic models are F1001 and F1002. By June of 1998, about 50 sets of UPS were used in China, among which about 20 were imported.[77]

Modular Production System

To date, modular production systems have not been applied in the China's apparel industry. However, a few plants organize their production processing using some of the concepts of a modular system. For example, in the Beijing Wanfu Garment Co., Ltd., which produces hotel uniforms, a group of six or seven workers using basic equipment can easily change two to three different styles in one shift.

4.3.2 Equipment and Facilities

Sources of equipment and facilities

Most Chinese garment factories are equipped with domestic machines. However, imported equipment and more sophisticated technology are widely used in most recently established enterprises – especially by export-oriented firms. The imported machines are mainly from Japan, the United States, and Germany.

In recent years the amount of imported machinery has declined. For example, in 1997, US$3.2 billion of sewing machines and accessories were imported, 41% lower than 1996. Among these imports, imports of industrial sewing machinery declined 53% and of computer embroider machinery declined 41%, while imports of family-used multi-function sewing machine increased 82%.[78]

Our survey of 137 apparel manufacturers showed that 50% of apparel plants in the coastal areas use mainly imported machines, whereas domestic machines dominate more than 80% of apparel factories in the middle and western regions.

Table 4.3-1 shows the breakdown of imported versus domestic equipment by region.

[77] Shanghai Apparel Association, 1998.

[78] Zhang Chonghe, China Sewing Machinery Industry, 1998.

Table 4.3-1 Quantity of Domestic vs. Imported Machinery[79]

Machinery		Coastal	Percentage	Middle & West	Percentage
Sewing Machine	Dom.	6,781	49.4%	13,586	86.8%
	Imp.	6,932	50.6%	2,060	13.2%
Over-lock Machine	Dom.	1,156	44.1%	2,177	87.1%
	Imp.	1,467	55.9%	323	12.9%
Button Attaching Machine	Dom.	179	43.2%	522	79.9%
	Imp.	235	56.8%	131	20.1%
Covering Stitch Machine	Dom.	186	30.2%	254	65.6%
	Imp.	429	69.8%	133	34.4%
Straight Buttonholing Machine	Dom.	47	12.2%	137	28.9%
	Imp.	337	87.8%	337	71.1%

Dom. = Domestic (China-made) machinery
Imp. = Imported machinery

Age of equipment

From 1980 to 1990, about 1,380,000 industrial sewing machines were imported into China.[80] About half of the enterprises in our sample bought a large number of machines after 1992.

Table 4.3-2 Age of Equipment (By Number of Factories)[81]

Year of Purchase	Coastal	Middle & West	Total	Percent of Total
1992 and before	32	28	60	43.8%
1993	19	11	30	21.9%
1994	20	12	32	23.4%
From Jan- Aug, 1995	8	7	15	10.9%
Sample Totals:	79	58	137	100%

According to Chinese Customs records, in 1997 the sewing machinery industry exported 4 million sets of sewing machines, valued at US$280 million. Table 4.3-3 shows China's imports and exports of sewing machine equipment from 1990 to 1995.

[79] Data source: Survey conducted by China Textile University, July – August 1995.

[80] Lian Leyin, The Developing Garment Industry in China, Chinese Apparel Industry General Corporation.

[81] Data source: Survey conducted by China Textile University, July – August 1995.

Table 4.3-3 Trade of Clothing Machinery (By Millions of US$)[82]

Year	1990	1991	1992	1993	1994	1995
Imports	190	275	399	480	394	320
Exports	27	34	43	53	81	102

4.3.3 Technology Adoption

CAD/CAM

Recent years have seen the beginning of the use of Computer-Aided Design (CAD) systems in China's apparel industry. Major suppliers of the CAD systems used in China are Gerber of USA, Lectra of France, Invesronica of Spain, ALEXIS of Switzerland, and some domestic companies. Table 4.3-4 shows the adoption of different systems through 1994.

Table 4.3-4 Number of CAD Systems Imported into China (As of 1994)[83]

Suppliers	Date of First Introduction to China	Customers (in 1994)
Gerber	early 1980s	63
Lectra	the late 1980s	30
Invesronica	1992	23

An estimated 530 sets of CAD systems had been installed by China's apparel industry by mid-1997.[84] Most firms use the CAD systems primarily for pattern making, grading, and marker making rather than for product design. There are 13 ETON 2002 sets in use in China – 3 in Dalian, 2 in Beijing, 2 in Hubei, 4 in Jiangsu, 1 in Guangdong and 1 in Shanghai (the one in Shanghai is used for teaching purposes). Table 4.3-5 indicates the rate of adoption of CAD systems in China. According to one estimate, CAD systems will be used by 5% of the Chinese industry by the end of 2000.[85]

Table 4.3-5 Development & Application of CAD in China's Apparel Industry[86]

Time	CAD Customers	Coverage Rate (%)
1981-1985	3-10	0.02
1986-1990	10-70	0.15
1991-1992	120-200	0.42
1993-1994	200-250	0.53
1995-1996	250-400	0.94
By Aug, 1997	530	1.10

[82] Source: Chinese Customs.

[83] Source: Supplementary Issue of Garment Machinery News, 1994.

[84] Wen Lishen, 'The Development and Application of Apparel CAD / CAM System in China', China Textile Leader, 1998 No. 1.

[85] Ibid.

[86] Data source: Wen Lishen, 'The Development and Application of Apparel CAD / CAM System in China', China Textile Leader, 1998 No. 1.

Bar-codes

The UPC/EAN bar-code system has been used since China joined the International Article Numbering Association. Enterprises that have registered trademarks can apply for a UPC bar code at the China Article Numbering Centre. Many enterprises have registered for barcodes, but they do not use them in the manufacturing process. They mainly use barcodes for exports and supermarkets. Barcodes are popular in supermarkets in China, but are seldom used in department stores.

In Shanghai there were about 17 apparel manufacturers using the UPC bar-code system in 1995.[87] Jeanswest, a Hong Kong brand of casual wear, scans bar codes at the point of sale (POS). Its main stores collect daily data stored in floppy disks from each POS, and send the data to company headquarters in Hong Kong by e-mail. The headquarters of Richini, an American brand, communicates with every point of sale through its computer network.

Electric Data Interchange (EDI) was first introduced in China after the Shekou Shenzhen EDI Conference in January 1990. In January 1994, the China's Ministry of Foreign Trade and Economic Cooperation (MOFTEC) announced that computer networks should be used to reduce the time required to clear China's textile exports through U.S. Customs. Currently, quota licenses are checked through computer networks linking U.S. Customs and MOFTEC.[88]

The Imitative Three-Dimension "magic mirror" system was developed by No.710 Research Institute of the Ministry of Aeronautics and Astronautics Industry and was applied in retailing POS in 1993. There were more than 100 Apparel Design and Research Centres and 35 Quality Inspection Stations, including two State Inspection Centres, in China in 1995.

4.3.4 Product Mix

Our survey indicated that 62.8% of apparel manufacturers produce garments made of woven fabrics only, 27.7% manufacture garments made of knit fabrics only, and 9.5% produce garments made of both woven and knit fabrics.

Table 4.3-6 shows the composition of China's apparel exports in 1994. In total, China's total apparel exports increased 28.7% in value in 1997, of which price increases represented 19.3% of the 28.7% increase, and volume increases represented 9.4% of the increase.

[87] The Shanghai Branch of China Article Numbering Centre.

[88] Bar-code and Information System, No.9, 1995.

Table 4.3-6 Product Mix of Apparel Exports in 1994[89]

Fabric from which apparel was made:	Quantity (in billions of pieces)	Annual Growth Rate	Value (billion US$)	Annual Growth Rate	Average Unit Price (US$/piece)	Annual Growth Rate
Total Woven	--	--	15.02	30.13%	--	14.65%
Cotton Woven	2.232	14.09%	5.736	52.60%	2.57	33.75%
Man-made Fibre Woven	1.429	19.7%	4.789	32.3%	3.35	10.53%
Silk Woven	0.329	6.20%	1.875	11.80%	5.70	6.01%
Wool Woven	0.037	26.53%	0.595	37.76%	16.15	8.88%
Total Knits	--	--	6.322	25.57%	--	20.98%
Cotton Knits	2.966	0.47%	2.698	26.07%	0.91	33.75%
Man-made Fibre Knits	1.020	10.54%	1.413	29.86%	1.39	17.48%
Wool Knits	0.156	5.10%	0.862	8.89%	5.53	14.74%

[89]Data Source: China Customs.

4.3.5 Order Size

In the domestic apparel market, there are trends towards increasing variety and smaller order quantities. In 1996, we studied order sizes and lead-times at 16 establishments (five trading companies and 11 apparel manufacturers). In 1998, we studied these trends in nine establishments. The Appendix describes the detailed performance characteristics of these firms.

Order size depends on the demands of the customer and on minimum fabric order quantities. Apparel production quantities are not constrained when the customer supplies the fabric. The order size ranges from tens of or hundreds of pieces to more than one million (in the case of some T-shirts). There are different minimum order sizes for different types of fabrics. In general, minimum order quantities are 3,000 to 4,000 yards for woven fabric and 1,000 pieces for each style of each color.

With the materials supplied by customers

The order size of apparel exports depends heavily on the demands of foreign customers. Orders from U.S. and Canadian customers are usually larger than those from Japanese and European customers. For example, an order of T-shirts from Wal-Mart was 400,000 pieces.

The average minimum order size in our sample was 200 to 300 pieces. The range of order sizes provided by any one firm is large. For example, in 1995 the minimum order size for the Shanghai Xinye Garment Co., Ltd., was 283 silk shirts and the maximum order size was 12,150 men's coats.

With the materials procured by apparel firm

The minimum order size for textile fabrics was 3,000 to 4,000 yards in our sample. Order size depends on the type of garments that the factory is to assemble. Basic products such as shirts have large fabric order sizes (the maximum may be hundreds of thousand yards), while the order sizes of fashion products are much smaller.

4.3.6 Lead Times

With the materials supplied by customers

Lead times depend on factors such as fabric and accessories delivery, order size, and seasonal fluctuations. Lead times are heavily dependent upon the delivery of the materials supplied by the customer and the factory's productivity. It usually takes 40-60 days for the materials to be delivered to China from oceanic countries. For example, it is two months for delivery of fabric from the U.S. Fabric lead times are 20-40 days for closer countries such as Japan. A set of lead times (from contract signing to delivery) for one firm is shown in Table 4.3.7.

Table 4.3-7 Standard Lead Times of Xinye Garment Co., Ltd.

	30-40 days		*10-15 days*		*20-40 days*		*10-15 days*	
Order	----> (Confirm samples)	Contract	---->	Delivery of materials	---->	Bulk Production	---->	Delivery of garments to Japanese customers

With the materials procured by apparel firm

The average lead time in our sample when materials had to be procured by the apparel firm was three to six months. The average lead time for fabrics was 40 to 90 days; the shortest was 25 to 50 days. There is substantial room to reduce the lead times of apparel to the domestic market by reducing fabric lead times.

Fabric lead times are determined by the fabric manufacturer and the type of the fabric. It usually takes one to two months to finish the fabric (two months for yarn-dyed fabric). After the arrival of the materials, it typically takes only one month or so to produce and deliver the product.

In total, it takes two to three months for manufacturing with supplied materials and three to four months (no more than half a year) when materials must be procured by the apparel firm.

4.3.7 Comparison of Apparel Sourcing Options

The tables below show comparative rankings of service, quality, delivery, and cost across different regions by U.S. and European customers.

Table 4.3-8 Qualitative Ranking of Highest Volume Countries and Regions by U.S. Customers[90]

Country & Region	Service	Quality	Delivery	Cost	Average
Sri Lanka	4.0	4.0	4.0	4.5	4.1
Singapore	4.0	4.3	4.0	2.0	3.8
Hong Kong	4.5	4.0	4.5	2.1	3.8
Thailand	4.0	3.5	3.3	4.0	3.7
Philippines	3.5	4.0	3.5	3.5	3.6
Taiwan	4.0	4.0	3.5	2.3	3.5
China	3.4	3.3	2.9	4.0	3.4
Caribbean Basin	2.5	3.0	2.8	4.3	3.1
Malaysia	3.0	3.5	3.0	3.0	3.1
Indonesia	2.0	2.7	2.7	3.7	2.8

Note: 5=best; 1=worst

Table 4.3-9 Qualitative Ranking of Highest Volume Countries and Regions by European Customers[91]

Country & Region	Service	Quality	Delivery	Cost	Average
Malaysia	3.0	4.3	3.8	3.0	3.5
North Africa	3.0	4.0	3.0	4.0	3.5
Singapore	4.3	4.0	3.0	2.5	3.4
China	3.3	3.5	2.8	4.3	3.4
Eastern Europe[92]	3.5	3.0	2.5	4.0	3.3
Hong Kong	4.5	3.8	3.5	1.0	3.2
Taiwan	2.8	3.5	2.8	3.3	3.1
Thailand	3.0	3.3	3.0	3.0	3.1
Bangladesh	2.3	2.5	2.3	4.5	2.9
Russia/Ukraine	2.0	3.0	2.0	4.5	2.9
India	2.3	2.8	2.5	3.5	2.8
Sri Lanka	2.3	2.5	2.3	4.0	2.8

Note: 5=best; 1=worst

[90] Source: KSA North American interviews, 1995. Results incorporate rankings from 14 leading North American apparel companies.

[91] Source: KSA European interviews, 1995.

[92] Eastern Europe includes all the nearer European countries and the Baltic States.

4.4 The Retail-Apparel-Textile Pipeline

4.4.1 Domestic Channel

There are dozens of large wholesale markets in China's domestic apparel pipeline. About 70%-80% of garments are sold using channel pattern A shown below.[93] Pattern A is popular in large cities, and Pattern B is often seen in small and middle cities or towns. Pattern C is seldom adopted in China.

Pattern A: (Typical retail types: Specialty Stores, Department stores,…)

Textile Mfr.<----> Apparel Mfr.<----------> Retailer

Pattern B: (Typical retail types: Speciality Stores, Department stores, street fashion peddlars).

Textile Mfr.<-----> Apparel Mfr.<----> Wholesaler<-----> Retailer

Pattern C: (Typical retail types: Speciality Stores, Retail Chains, Direct Mail).

Apparel Mfr.<-------> Jobber <--------> Retailer

Textile Mfr.<-- ----------

4.4.2 Export Channel

Three export channel models are shown below. Pattern E is most widely used in China.

DOMESTIC *OVERSEAS*

Pattern D:

Apparel Mfr.<------>Chinese Office <---------> Retailer of Foreign Jobber

Textile Mfr.<----------
(Direct Sourcing)

Pattern E:

Apparel Mfr. <------->Domestic Agency <---->Foreign Jobber<----> Retailer (SOE or JVE)

Pattern F:

Apparel Mfr.<---------->Foreign Jobber <--> Retailer (SOE who can export directly or JVE)

[93] Almanac of China' Textile Industry, 1994.

4.4.3 Quota

China's Ministry of Foreign Trade and Economic Cooperation (MOFTEC) manages the quota. The Provincial Foreign Trade Department assigns quota to local enterprises that have licenses to export and are required to transfer foreign exchange to the government. After 1992, a small part of quota was auctioned publicly to promote the export of high value-added garments. The transfer of quota among enterprises is allowed.

In May 1995, MOFTEC announced a new set of regulations for auctioning all apparel quotas by open bids, intending to receive close scrutiny from apparel enterprises, both domestic and foreign-funded. The quantity of quota offered for auction is decided by MOFTEC based on the actual quantities exported in the previous year, estimated demand in world markets and estimated quantities available from domestic suppliers. Apparel quota is auctioned through freely submitted bids.[94]

In 1998, new regulations on quota management were issued, including five government files.[95] The 1999 quota for textile and apparel products will be auctioned in two ways: public bid and negotiating bid. The public bid will be conducted through a new "Electronic Bid System," in which enterprises are required to send their electronic bidding document before a certain time, and the computer system will decide who gets the quota based on the bidding price and quantity. In a negotiating bid, an enterprise will get the quota if its bidding price and quantity meets the requirements of the Bidding Office that is in charge of the bid.[96]

[94] Paul Leung, Textile Asia, July 1995.

[95] Textile Information, 1998 May 10, No. 7.

[96] International Business, August 14, 1998, China's Ministry of Foreign Trade and Economic Cooperation.

Summary

The research conducted by China Textile University has led to the following conclusions:

1. China owns the largest apparel industry in the world, and has made rapid progress in recent years. With the huge pool of cheap labor and abundant raw materials, China's apparel industry has been and will continue to be one of the pillar industries in China.

2. China is the leading apparel exporter in the world, with its imports growing dramatically since 1978. China has played an important role in the global textile and apparel economy, and has influenced significantly international apparel trade.

3. Facing both overseas competition from newly emerging apparel exporting countries and increasing labor costs (especially in coastal areas), China's apparel industry is now in the process of institutional, structural, and geographical transition.

4. To maintain a leading role in the apparel market, China's apparel industry must evolve towards more variety and smaller order size to meet the changing demands of both domestic and international markets. Driven by consumers' demand, the industry has gradually introduced new technologies for designing, manufacturing and merchandising. However, China's apparel industry is still dominated by the mass-production of basic items.

Appendix A Tables

Table 1 The Top 20 Textile & Apparel Marts (1995)

Name	Sales (bn. RMB)
Shaoxing China Light Textiles City (Zhejiang)	17.31
Haicheng Xi Liu Apparel Wholesale Market (Liaoning)	15.00
Wujiang China Dongfang Silk Market (Jiangsu)	13.00
Shenyang Wuai Commodity Wholesale Market (Liaoning)	9.21
Luqiao Chinese Daily-use Commodity Market (Zhejiang)	8.98
Luoyang Guanlin Commercial Market (Henan)	7.50
Ruian Commercial City (Zhejiang)	5.60
Huzhou Zhili Textiles & Embroidery Market (Zhejiang)	5.40
Hangzhou Sijiqing Garments Market (Zhejiang)	5.22
Ji Mo Garments Wholesale Market (Shandong)	4.97
Luqiao Small Commodity Market (Zhejiang)	4.80
Zibo Zi Chuan Garments City (Shandong)	4.66
Ningbo Light Textile Market (Zhejiang)	4.49
Zibo Zhou Chuan Textile World (Shandong)	3.59
Nantong Sanxing Embroidery City (Jiangsu)	3.50
Miaoqiao China Sweater Market (Jiangsu)	3.48
Wenzhou Commercial City (Zhejiang)	3.43
Puning Liusha Fabrics Market (Guangdong)	3.30
Puning Liusha Apparel Market (Guangdong)	3.30
Jiaxing Tongxiang Puyuan Sweaters Market (Zhejiang)	3.07

Data source: Almanac of China’s Textile Industry, 1996

Table 2 Average Annual Wages of Manufacturing Industries in China

(Unit: RMB)

Province	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Beijing	1284	1438	1742	2094	2369	2701	2985	3518	4621	6242	7570	8821
Tianjin	1097	1354	1620	1942	2264	2429	2734	3116	3979	5022	6020	6828
Hebei	1047	1219	1408	1688	1871	2058	2220	2539	2882	3870	4514	4822
Shanxi	1133	1318	1501	1763	2096	2318	2503	2727	2756	3348	4087	4509
Inn Mongolia	1124	1254	1343	1565	1767	1945	2117	2357	2580	3339	3681	4095
Liaoning	1075	1247	1465	1797	2008	2199	2396	2704	3092	3972	4523	4766
Jilin	1054	1182	1350	1626	1772	1894	2042	2270	2565	3324	4132	5140
Heilongjiang	1074	1252	1403	1641	1838	1903	2129	2326	2389	2898	3628	3611
Shanghai	1329	1570	1864	2247	2624	2877	3374	4317	5612	7020	8890	10051
Jiangsu	1052	1240	1504	1851	1977	2180	2378	2883	3654	4660	5674	6062
Zhejiang	1045	123	1465	1798	1990	2177	2391	2827	3741	5054	6059	6644
Anhui	971	1134	1300	1534	1737	1940	2105	2360	2716	3483	4246	4751
Fujian	1023	1201	1357	1642	1926	2170	2461	2856	3568	4714	5931	6666
Jiangxi	1021	1152	1273	1504	1641	1792	1934	2167	2393	3091	3939	4586
Shandong	1086	1269	1454	1840	1999	2250	2405	2653	2909	3800	4729	5038
Henan	1021	1165	1305	1522	1711	1938	2071	2374	2542	3191	4034	4550
Hubei	1042	1178	1348	1614	1759	1937	2163	2430	2819	3785	4479	4859
Hunan	1079	1238	1499	1727	1915	2099	2247	2551	3043	3824	4536	4665
Guangdong	1363	1487	1765	2329	2766	3023	3511	4178	5482	6838	7913	8570
Guangxi	1086	1277	1498	1760	1892	2099	2312	2699	3509	4457	5311	5511

Table 2 The Average Annual Wages of Manufacturing Industries in China – Continued

(Unit: RMB)

Province	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Sichuan	1077	1223	1377	1646	1882	2107	2311	2528	3092	4457	4622	5095
Guizhou	1130	1266	1412	1657	1875	2171	2351	2683	3149	3918	4704	5009
Yunnan	1165	1294	1506	1795	2037	2316	2540	2876	3410	4632	5677	6680
Xizang	1963	2179	2274	2525	2584	3093	3116	3355	3410	4167	4789	5211
Shaanxi	1096	1248	1427	1695	1900	2089	2246	2441	2758	3476	4093	4560
Gansu	1388	1508	1739	205	2323	2531	2715	2986	3623	4498	5488	5906
Qinghai	1558	1746	1972	2231	2387	2535	2652	2905	3161	4184	4761	5177
Ningxia	1291	1512	1718	1959	2242	2473	2665	2925	3006	3737	4746	5190
Xinjiang	1402	1594	1760	2028	2248	2449	2617	2897	3164	4138	5220	5673

Source: China Statistical Yearbook, 1986-1997

Table 3 Hong Kong Re-exports of Articles of Apparel & Clothing Accessories From China to Selected Major Countries of Destination (1984-1995)

Unit: HKD Million

Year	USA	China	Japan	Germany	United Kingdom	France
1984	2985.2	68.1	NA	NA	NA	NA
1985	3829.4	154.5	386.7	339.5	NA	NA
1986	7643.3	268.6	587.4	628.5	161.7	NA
1987	7668.8	389.2	1297.2	1293.7	516.2	NA
1988	8486.3	488.2	3090.2	2052.8	772.1	NA
1989	12728.4	754.8	5684.4	**3,005.7 3,350.3	918.9	NA
1990	15031.2	963.9	6000.9	6297.1	1511.8	NA
1991	*16,492.4 16,482.0	*1,261.4 1,252.8	*7,092.9 7,091.5	*9,613.1 9,596.2	*2,324.1 2,318.1	NA
1992	21319.7	1649.2	10453.8	7695.5	3330.9	1277.2
1993	25829.3	1770.9	12594.5	9894.4	4813.2	1504.5
1994	24446.6	1762.1	15217.3	8849	4334.6	1558.8
1995	21008.9	1548.7	17624.3	8360.1	4389.1	1903.4

Notes:

* Data given at the end of 1991; those without asterisk given at the end of 1992.

** Data given at the end of 1989; those without double asterisk given at the end of 1990.

Data Source: Hong Kong External Trade, Trade Statistics Dissemination Section, Census & Statistics Department, Hong Kong, Dec., 1985—1995

Table 4-1 Price Range of Name Brands in Shanghai Market, Men's Suit[97]

Brand Name	Brand Origin	Production Place	Main Price Range (RMB)
Ferre	Italy	Italy	15,000 – 17,000
Balenciage	France	Hong Kong	2,488 – 3,660
Pierre Cardin	France	Tianjin	2,000 –3,500
Pei luo meng	China	Shanghai	1,200 – 2,700

[97] Table 4-1, 4-2, 4-3, and 4-4 show the well-accepted price range of certain name brands in the Shanghai market. The source for these data is a market survey conducted by China Textile University, June 1998. Since the survey was aimed at people with medium to high income, the medium- or high- class brands of apparel were emphasized.

Table 4-2 Price Range of Name Brands in Shanghai Market, Women's Suits

Brand Name	Brand Origin	Production Place	Main Price Range(RMB)
D & G	Italy	Italy	15,000 – 17,500
Anne Klein	U.S.	Japan	1,488 – 1,888
Sisley	Italy	Guangdong	1,400 – 1,800
Ports	Canada	Fujian	940 – 1,500
Mysheros	China Taiwan	Shanghai	200 – 350

Table 4-3 Price Range of Name Brands in Shanghai Market, Sportswear

Brand Name	Brand Origin	Production Place	Main Price Range(RMB)
Nike	U.S.	Shanghai	200 - 800
Adidas	U.S.	Shanghai	200 – 800
Lining	China	Beijing	100 – 400

Table 4-4 Price Range of Name Brands in Shanghai Market, Casualwear

Brand Name	Brand Origin	Production Place	Main Price Range (RMB)
C.K	U.S.	Shanghai	700 – 900
Esprit	U.S.	Shanghai	200 – 420
Kangsai	China	Hubei	80 - 250

Table 5 Population Structure: Rural vs. Urban[98]

Year	Percent Urban Residents	Percent Rural Residents
1978	17.92	82.08
1980	19.39	80.61
1985	23.71	76.29
1990	26.41	73.59
1991	26.37	73.63
1992	27.63	72.37
1993	28.14	71.86
1994	28.62	71.38
1995	29.04	70.96
1996	29.37	70.63

[98] China Statistical Yearbook, 1997, p. 69.

Appendix B Order Sizes and Lead Times in Sample

Case studies are critical to gaining a deep understanding of China's apparel industry. The following research examined the lead times and order sizes of various firms in 1996 and 1998.

Lead Times and Order Sizes in the Sample Firms in 1996

1. Shanghai Wellstone Apparel Co., LTD
   - Main product: knitted garments
   - Order size: Max.-- more than one million pieces (T-shirt);
     Min.—1,000 pieces / one style in one color
   - Lead-time: three months in general (for pattern making, contract signing, thread buying, weaving, dying, sewing, packaging, and delivering)
   - Depending on the delivery of the materials, L/C (letter of credit) should have arrived one and a half month ahead the delivery.

2. Shanghai Artwaves Garment & Ornament Co., LTD
   - Main product: silk garment with hand painting
   - Order size: Most frequently --3,000 pieces
   - Lead time: One and a half-month (with stable supply of 100% silk grey)
     (Dying, hand drawing, high-temperature decanting, colour fixed water-cleaning and dry-cleaning, unit cutting, sewing)

3. Shanghai New Union Textiles I/E Corporation Pudong Company
   - Order size: Max.-- tens of thousand of dozens (with quota);
     Most frequently -- several thousand pieces.
   - Lead time: About three months with own materials.

4. Shanghai Silk I/E Corporation
   - Order size: Max.--Tens of thousand, Min--60 pieces
   - Lead time: Two months with materials from USA and three months in general.
     Four months with own materials.

5. The Itochu Co., LTD.
   - Order size: Max.--ten million pieces (white T-shirt);
     Min.--one to two hundred pieces

6. Wujiang Tung Ah Feather Products Co., LTD

   - Order size: Max. -- forty thousand pieces;
     Min. -- one to two thousand pieces
   - Lead time: Three to six months

7. Gurrand Investment (Shanghai) Co., LTD

   - Order size: Min.--several hundred pieces
     Most frequently --several thousand pieces
   - Lead time: 25 to 50 days on average with material supplied by Japanese customer

8. Shanghai Xinye Garment Co., LTD

   - Order size: Max. -- fourteen thousand pieces
     Min. -- two to three hundred pieces
     Most frequently -- two to three thousand pieces
   - Lead time: 30 to 50 days with materials supplied by Japanese customer

9. East Grace Corporation Wuxi China

   - Order size: with materials supplied by customer, min is 50 pieces for each style each colour
   - With own materials, min order size of fabric is 3,000 - 4,000 yards
   - Lead time: with materials supplied by customer, one to two months for fabric delivery with own materials, 25-45 days for dying fabric while 30-50 days for yarn-dyed fabric
   - For both above, the sewing time is 25-35 days

10. Shanghai Swell Co., LTD (Sino-American)

    - Order size: Max.--13,000 dozens
      Min.--500-600 dozens
      Most frequently --1,000 dozens
    - Lead time: 14-45 days

11. Shenzhen Inwear Co., LTD

    - Order size: Max. -- 13,000 dozens;
      Min. -- 300-500 pieces
      Most frequently -- 2,000 pieces
    - Lead time: Average -- 40 days
      Min. -- 10 days

12. Shanghai Worldbest I/E Co., LTD
    - Order size: Max -- 400,000 pieces
      Min -- 500-1,000 pieces
    - Lead time: Average one to two months, half a year for large order.
13. Shanghai High Sweater Design Corporation
    - Order size: Min.--tens of pieces to one or two thousand
      Most frequently --thousands of pieces to tens of thousands pieces
    - Lead time: 60-80 days

14. Shanghai Garment I/E Corporation (Japanese Division)
    - Order size: Min.--less than 500 pieces
      Most frequently --2-3 thousand pieces
      Note: orders from American customers are much bigger
    - Lead time: With own materials, 3-4 months on average
      With supplied materials, 1-2 months on average

15. Shanghai Garment Group Co., LTD
    - Order size: Max.-- thousands to tens of thousand dozens;
      Min. -- one to two hundred pieces for women's shirts
    - Lead time: Three months for common fabrics
      Half a year for complicated fabrics
      (Time for L/C is half and a month at least)

16. Business news-- Shanghai Xinwin Attire Factory
    - Order size: Max--200,000 pieces (short pants)
      Min.-- tens of pieces

Lead Times and Order Sizes in the Sample Firms in 1998

1. Wuhan Taihe Industry Group Co. Ltd.
   - Product: women's fashion
   - Target consumer: young fashionable women
   - Price level: 290-510 RMB per piece
   - Order size: 100-3,000 pieces
   - Lead time: depends on the style and specification of the garment

2. Beijing White Collar Apparel Co. Ltd.
   - Product: women's fashion
   - Target consumer: young and middle age professional women
   - Price level: 350-1,300 RMB / set
   - Order size: 600,000 pieces one year

3. Shanghai Smart Apparel Co. Ltd.
   - Product: men's shirt
   - Target consumer: common men
   - Price level: 110-230 RMB per piece
   - Order size: 1,000 - 10,000 pieces
   - Lead time: one month

4. Guangdong Zhong Shan City Haoli Clothing Co. Ltd.
   - Product: casual wear
   - Target consumer: young active persons
   - Price level: 150-350 RMB
   - Order size: 1200-100,000 per style
   - Lead time: 45 days or so

5. Kangsai Group Co. Ltd.
   - Product: knitting casual wear
   - Target consumer: common
   - Price level: 80-250 RMB per piece
   - Order size: 2,000-5,000 pieces
   - Lead time: 45 days

6. Shanghai Li Li Min Knitting Co. Ltd.
   - Product: hand-knitting wear
   - Target consumer: fashionable women aged 20-40
   - Price level: 100-300 RMB per piece
   - Order size: 3-5 piece per style
   - Lead time: three to five months

7. Shanghai T&A Fashion Co. Ltd.
   - Product: women's fashion and professional wear
   - Target consumer: medium to higher level women aged 20-30
   - Price level: 400-800 RMB per piece
   - Order size: 100-3,000 pieces
   - Lead time: one to two weeks for an order of 100 pieces

8. Shanghai Oniya Fashion Co. Ltd.
   - Product: women's wear
   - Target consumer: elegant young women
   - Price level: 300-600 RMB per piece
   - Order size: 1,000 or more
   - Lead time: one to two weeks

9. Shanghai St. Edenweiss Cashmere Apparel Trading Co.
   - Product: cashmere sweater and coat
   - Target consumer: high level
   - Price level: 800-1,900 RMB per piece
   - Order size: 100-3,000 pieces
   - Lead time: 45 days for an order of 3,000 pieces

Appendix C Explanatory Notes for Major Terms

Apparel Industry refers to apparel manufacturing establishments.

Total retail sales of consumer goods refers to the sum of retail sales of consumer goods by wholesale, retail, catering, and manufacturing establishments in other industries of different type of ownership, to urban and rural households and institutions, as well as retail sales by firms to non-agricultural households.

Illustrating the supply of consumers' goods through various channels to households and institutions to meet their demands, the total retail sales of consumer goods is an important indicator for the study of people's livelihoods, the purchasing power of consumer goods and the circulation of money.

The retail sales of consumer goods include:

(1) commodities and housing (including building materials for the construction or repair of housing) sold to urban and rural households;

(2) food and fuel sold to canteens of institutions, enterprises, schools, military units and to canteens of hotels and hostels that only serve their guests, and commodities produced by enterprises, institutions or state farms and sold directly to their employees or their canteens;

(3) grain and non-staple food, clothing, daily articles and fuels sold to military personnel;

(4) consumer goods sold to foreigners , overseas Chinese, and Chinese compatriots in Taiwan, Hong Kong and Macao during their stay in the mainland of China;

(5) Chinese and western medicines, herbs and medical facilities purchased by households;

(6) newspapers, books, magazines directly sold to households and institutions by publishers, new and old commemorative stamps, special stamps, first-day covers, stamp albums and other stamp-collection articles sold by stamp companies;

(7) consumer goods purchased and then sold by second-hand shops;

(8) stoves and other heating facilities and liquefied gas sold by gas companies to households and institutions;

(9) commodity housing buildings sold to households by urban construction and real estates management agencies, enterprises and institutions; and

(10) commodities sold by farmers to non-agricultural households and institutions. Excluded under this heading are: raw materials, fuels, equipment, tools sold to enterprise, institutions and state farms for production purpose: commodities sold to trade establishments for re-selling; commissioned sales at second-hand shops; operational income of urban public utilities; stamps sold at post offices; income of water, power, gas production and supply establishments from the supply of their products; and sale of commodities among farmers.

Consumer Goods include food, clothing, daily-use articles for cultural life and recreation, books, newspaper and magazines, medicine and medical instruments and fuels, and so on.

Disposable income refers to the actual income of the surveyed households that is available for daily life, excluding financial support and gifts to others.

Living expenditures refers to total expenditures of the sample households for daily life, including expenditures on various commodities and expenses for non-commodity items such as culture and service, etc., but excluding fines and confiscation, loss, tax payments (such as income tax, license tax, real estates tax, etc.) and various expense by individual laborers for business purposes.

Expenditure on commodities refers to expenses of the sample households for the purchase of commodities from shops, factories, catering industries, canteens markets and the peasants classified into nine items: food, clothing, daily-life necessities, cultural and recreational articles, newspaper and journals, pharmaceutical and medical treatment, hosing and building materials, fuels and other commodities. Included are those for own consumption or for gifts to relatives and friends.

Total consumption refers to the total final expenditure of consumption of goods and service by the resident units in a certain period time, i. e. resident units purchase goods and services domestically and abroad in meeting their own demands on physical life, cultural life and mental life. (This excludes non-resident units' expenditure of consumption within national territory.) Total consumption includes personal consumption and public consumption.

Resident consumption refers to total final consumption of goods and services during a certain period of time, including the purchase of various kinds of goods for consumption and outlays of various kinds of services, such as rents, traffic, heath care, cultural life and education, etc.; imputed value of consumption of owner-occupied dwellings and consumption goods in the form of physical wages obtained by residents, excluding outlays for the purchase of building and production.

Public consumption refers to value of total output of government minus receipts from sales, i. e. the value of products which are provided by public service organizations for government, and government paid for the products which are consumed by the public later.

Urban population refers to the population living in areas under the administration of city or town forms of government.

Rural population refers to the population of counties excluding those living in towns or cities in the county.

City refers to cities established with the approval of the central government.

Town refers to towns established with the approval of the provincial government, autonomous region, or municipality directly under the central government. Through 1963, a town was defined as consisting of more than 2,000 permanent residents, of which 50% or more were considered non-agricultural population; since 1964, the number of permanent residents for a town was raised to 3,000, and the percentage of non-agricultural population to 70% or 2,500 permanent residents with 85% of non-agricultural population. Further adjustment was made in 1984: a town is defined when the area is the location of a county-level government agency, or when the area has a population of below 20,000 with 2,000 non-agricultural population, or when the area has a population of more than 20,000 with 10% or more of non-agricultural population, or when it is a remote area, mountainous area, small mining area, small harbor, tourism area, or border area with non-agricultural population of below 2,000.

Appendix D Project Team

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