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102

Distribution Systems for Value-added Wood Products in China

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Technical Editors: Angel Ratliff and Clara Burnett

EXECUTIVE SUMMARY

In recent years, China has become a vital market for many US wood exporters. Now the fourth largest export destination for US wood products, exports from the US to China have increased an average of 30 percent per year over the past 10 years. From 1999-2004, US exports of softwood lumber increased from $1.2 million to $27.5 million and exports of hardwood lumber increased from $29.9 million to $150.8 million. While China predominately imports raw materials, exports of value-added products are increasing. For example, in 2004, US suppliers exported almost $4 million in builders' joinery to China, replacing Canada as the leading supplier. Sales of wood furniture from the US are also increasing. Between 1999 and 2005, wood furniture exports from the US increased from $1 million to $6.8 million.

China's plentiful supply of cheap labor and comparatively low capital costs have made it arguably, the world's workshop. China consumes billions of dollars in raw materials and re-exports even more in value-added wood products. As the world's third leading importer of forest products, China has inevitably drawn the attention of the supplying nations and competition for China's business has become intense. Russian and Canadian suppliers dominate China's softwood lumber market and Southeast Asian suppliers are extremely competitive in China's hardwood market. US companies, however, are competitive suppliers of high quality raw and finished building materials. For US suppliers to maintain and improve their competitiveness in China however, they must understand what US products are in demand, the sales process, the distribution system, and their competition.

While raw materials, such as logs and lumber used in China's furniture factories, remain China's leading wood imports, the country is rapidly transitioning from a raw materials market to a diversified market with rising demand for value-added imports. Locally produced building materials dominate the regionally fragmented and price-sensitive market, yet US building materials are making inroads into certain niche markets. Yet, China remains a challenging market that can easily consume exporters' time and money. In order to improve their competitiveness, US suppliers must identify appropriate niches for their products, navigate through thousands of specifiers, and negotiate a fair contract. In addition to understanding market opportunities and competition, exporters must understand the markets for US products and how to introduce products into these markets.

This report presents information about opportunities, market size, factors affecting competitiveness, and makes recommendations for improving competitiveness and product positioning. These issues will be discussed throughout this paper and suggestions will be made to help US suppliers enter the Chinese market and increase their sales in China. Distribution systems for raw materials and value-added building materials will be presented and the purchasing process used by developers and contractors will be discussed. The information used for this report is a combination of secondary trade data and primary information derived through in-person interviews with knowledgeable industry professional in China.

Conclusions and Recommendations

Understanding government policy and directions of investments is critical for firms with long-term resource commitments in China. Although the Chinese government readily embraces the capitalist ideology, a number of housing developments are controlled by local government agencies and China has yet to develop an open exchange of information. Therefore, good relations with government officials and large real estate companies are extremely helpful for firms in obtaining project and bidding information. Most, if not all of the successful US building materials exporters spend a great deal of time developing contacts in government offices to learn about new government housing development contracts.

Over the past decade, China has invested heavily in fixed assets to maintain the country's recent level of economic growth. According to the Eleventh Five-Year Blueprint (2005-2010), the central government will recommit investments to "building a harmonious society" by improving people's living standards, particularly those of rural and low-income individuals. Therefore, analysts expect housing developments for middle- and upper-income consumers will gradually slow and subsidized affordable housing projects will increase. Land use restrictions for single family developments were expected to limit the number of luxury developments, but most of the large builders have already secured enough land with permits to enable them to continue to build.

Maintaining market presence is critical. Most US firms don't have inventory capacity in China and are selling their products via a variety of intermediaries such as: trading companies, sales offices, timber markets, distributors and home centers

Key findings of this report include: 1) policies enacted to achieve an economic "soft-landing" after years of double digit economic growth could curtail demand for housing and wood-based building materials, 2) distribution channels vary greatly depending upon the product and region, 3) distribution channels for value-added products are more complicated than those for raw materials, 4) long lead times and high prices hinder US suppliers' ability to compete with domestically produced building materials, 5) locating an aggressive local partner has an important influence on export success, particularly for technical products (e.g., treated lumber and wood windows) where technology transfer programs are required to educate builders, developers and architects, and 6) although competition from domestically produced building materials is intense, there are niche-market opportunities for hardwood lumber, hardwood veneer, windows, engineered roof truss systems, glulam bridges, treated lumber and naturally durable species, and high-end fine furniture from the US.

Hardwood lumber and hardwood veneer

While wages in China are increasing, China still has an ample supply of low-cost labor to fuel its value-added wood manufacturing plants, which will continue to drive demand for US hardwood and softwood lumber. US red oak, cherry, alder, maple, and walnut are among the most popular species for furniture manufacturing in China. Yellow poplar lumber and cherry veneer are also in high demand, due to an increasing shortage of supply. The American Hardwood Export Council (AHEC) has predicted double-digit export sales growth in the Chinese non-structural markets over the next few years.

Wood Windows

US wood windows have many advantages over their competitors in China, including high energy efficiency. As the Chinese government promotes energy-efficiency in buildings and building materials, Chinese window manufacturers face rising costs and high market-entry barriers with respect to window technology, quality and performance. The current market for wood windows is high-end villa projects located in the major Chinese cities. However, in the future, rapid urbanization is likely to provide new opportunities in second tier cities such as Chongqing and Nanjing.

Engineered Roof Truss Systems

As a major part of the government's campaign to renovate older urban districts, flat roofs of aged residential buildings are to be replaced with sloped roof systems. Slope roof modification has many advantages over flat roofs, including energy-efficiency and visual appeal. For most Chinese people, it is also a design that provides increased storage and living space in the house. This initiative could provide market opportunities for US engineered roof and truss systems.

Glulam Bridges and Beams

Outdoor applications such as bridges may be an opportunity since local wood is generally of lower quality compared to imports. Current uses for glulam timbers include bridges and clubhouses in upscale golf course developments as well as structural components in the outdoor walkways built around the water features that are becoming more prevalent in upscale residential developments.

Treated SYP and naturally durable species

Although competition is intense in the treated lumber market, there is a potential for US treated softwood lumber if the market is well educated and US standards are well recognized. Critical to the success of this product market is educating Chinese construction professionals about the importance of proper lumber treatment on the long-term durability and performance of treated lumber. This is particularly challenging given the price sensitivity of this market. Another option is the use of naturally durable wood species such as western red cedar, Alaska yellow cedar, eastern white cedar and redwood. While these species provide attractive options for builders, availability and cost can be an issue.

High-end fine furniture

Import tariffs on furniture imports were totally removed in 2005. US furniture brands, such as La-Z-Boy and Ethan Allen, can already be found at the retail level in major Chinese cities. Buyers of imported furniture are largely limited to overseas expatriates and upper income Chinese who are pursuing western lifestyles. With China's increasing integration into the global economy, and continued economic growth, this high end segment of the market is expected to increase substantially.

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1. INTRODUCTION

In recent years, China has become a vital market for many US wood exporters. Now the fourth largest export destination for US wood products, exports from the US to China have increased an average of 30 percent per year over the past 10 years (Figure 1). From 1999-2004, US exports of softwood lumber increased from $1.2 million to $27.5 million and exports of hardwood lumber increased from $29.9 million to $150.8 million. While China predominately imports raw materials, exports of value-added products are increasing. For example, in 2005, US suppliers exported almost $4 million in builders joinery to China, replacing Canada as the leading supplier. Sales of wood furniture from the US are also increasing. Between 1999 and 2005, wood furniture exports from the US increased from $1 million to $6.8 million.

China's plentiful supply of cheap labor and comparatively low capital costs have made it arguably, the leading workshop for the world. As shown in Table 1, China consumes billions of dollars in raw materials and re-exports even more in value-added wood products. As the world's third leading importer of forest products, China has inevitably drawn the attention of the supplying nations and competition for China's business has become intense. Russian and Canadian suppliers dominate China's softwood lumber market and Southeast Asian suppliers are extremely competitive in China's hardwood market. US products, however, are competitive suppliers of high quality raw and finished building materials. For US suppliers to maintain and improve their competitiveness in China however, they must understand what US products are in demand, the sales process, the distribution system, and their competition.

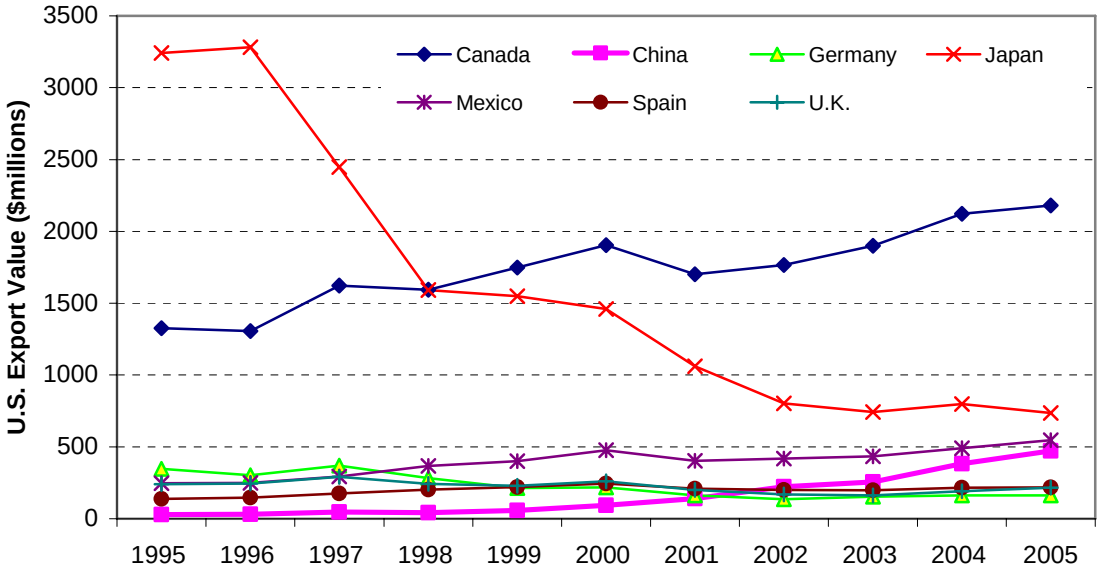

Figure 1. Top destinations for US wood exports, 1995-2005 (HS 44)

Source: Global Trade Atlas 2005

Table 1. China's imports and exports of major wood products, 2004

2004	HS code	Imports ($ millions)	Exports ($ millions)
Logs	4403	2,797	2
Lumber	4407	1,380.6	217
Veneer	4408	110	121
Particleboard	4410	123	21
Fiberboard	4411	272	126
Plywood	4412	384	1,246
Wood Chips	4401	44	103
Moulding and Flooring	4409	15	278
Wood Frames	4414	0.3	259
Builders' Joinery	4418	17	770
Wooden Furniture & Components	9403	58	3,681
Total		**5,252**	**8,692.0**

Source: Global Trade Atlas 2005

Based on interviews with distributors, building developers, purchasing agents, industry experts and an analysis of trade data, this competitive analysis of the China market and distribution system for primary and secondary wood products provides the reader with an introduction to the market with an emphasis on softwood and hardwood lumber, wooden doors, cabinets, flooring, moulding, and wood furniture.

The report presents information about opportunities, market size and factors affecting competitiveness, and makes recommendations for improving competitiveness and product positioning. Specific project objectives include the following:

- Document China's imports and exports of value-added wood products;
- Document US imports of specific wood products from China;
- Identify the distribution channels for imported softwood and hardwood lumber in China;
- Identify the wood species and sources for softwood and hardwood lumber used within specific Chinese value-added industries;
- Identify the factors that influence material sourcing and species use within specific value-added industries;
- Describe distribution channels for wood building materials;
- Identify potential market opportunities for US softwood and hardwood lumber in the absence of illegally sourced raw materials;
- Identify China residential building codes and standards that may encourage or discourage the use of US wood building materials; and
- Identify potential market opportunities for US value-added wood products in China.

2. MACRO ECONOMIC OVERVIEW

2.1. GDP Growth and Economic "Soft-landing"

Following Deng Xiaoping's "Open Door" policy, which was introduced in 1979, the Chinese central government enacted reforms that opened channels for foreign trade and investment. By 2004, China had become the world's third leading trader and the third largest economy based on purchasing power parity (CIA 2005).

Over the past two decades, the government has made economic growth its priority, with significant results. From 1980-2000, GDP increased at an average annual rate of 10% (World Bank 2005). In 2002, at the 16th Chinese Communist Party Congress, leaders said they wanted to make China "an all-around well-off society" within the next 20 years (China.org.cn 2002). Despite promising statistics and optimistic goals, China remains a developing country. Social and economic disparity between urban and rural communities is enormous, and the income gap between rich and poor in China is rapidly widening, which in turn increases the risk of social unrest. The Chinese government is highly cognizant of the risk these social issues represent, and in an effort to promote a more equitable distribution of wealth and social services, the central government announced a plan to construct "a harmonious society" by shifting its focus away from pursuing GDP growth and toward providing social services, education, health care, and preserving the environment (Chen 2005).

Chinese officials and international economists agree that China's economy is unsustainable at its current rate of growth, although the extent to which this is true is unclear (Washington Post 2004, Economist 2004). What they do agree on is that economic growth must be slowed to avoid excessive inflation. High levels of foreign direct investment have contributed to China's high GDP growth, but China's economic growth has largely been driven by government investment. While China needed government investment immediately following the introduction of the Open Door policy, more than half of all firms in China are now state owned. Despite the availability of domestic and foreign investment capital, the economy remains heavily reliant on government investment. Since much of China's economic growth has resulted from government investment, particularly in industry and real estate, it has been deemed risk-ridden and unsustainable (Economist 2004).

The central government has admitted to having serious concerns about the ability to sustain the present level of growth and of the economy "overheating". To reduce the GDP growth rate to 7% (a level considered sustainable but still able to create jobs and absorb surplus labor) the central government implemented a series of "softlanding" policies in 2004(Economist 2004). These policies include a temporary freeze on mortgage lending, raising the interest rate, revaluing the RMB, and adopting policies and taxes to discourage speculative real estate investment.

These policies have had the greatest impact on the real estate market. In 2004, the government reduced fixed-asset investments by 9% from $3.4 billion in 2003 (Table 2). In addition, in 2004, 1,900 of 5,700 Chinese cement companies either curtailed production or closed as a result of declining domestic demand and higher raw-material costs (Wall Street Journal 2004). Luxury housing markets in Shanghai and Beijing are also being affected, and developers are providing incentives to sell empty units.

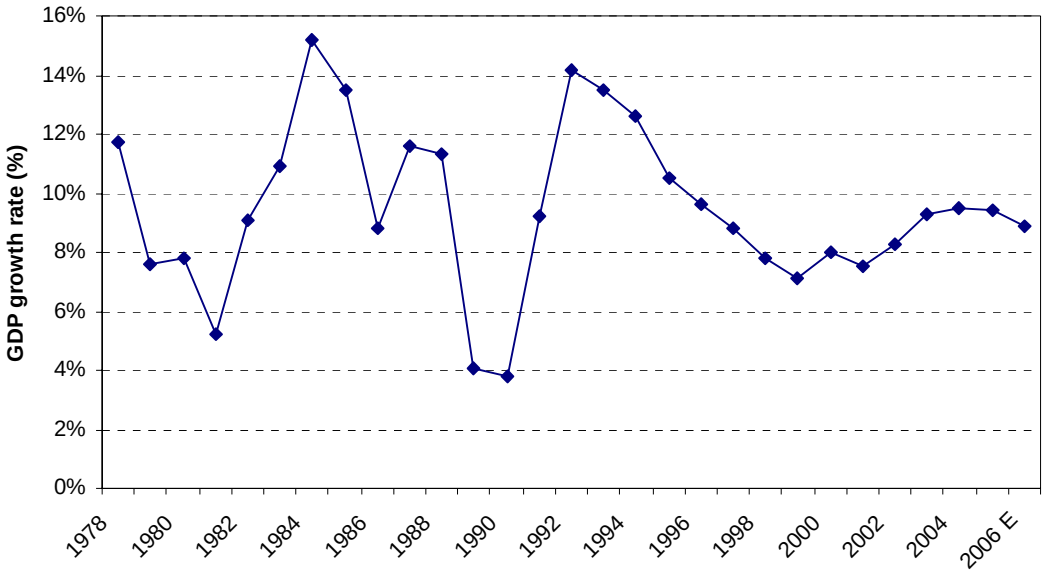

Figure 2. China GDP annual change, 1978-2005

Source: China Statistical Yearbook 2004, China News 2005a and AFPA 2005

Table 2. Key indicators of China's economy, 2000-2004

	2000	2001	2002	2003	2004
GDP ($ billions)	1,091.0	1,186.8	1,282.6	1,429.9	1,664.8
Real GDP growth (%)	8	7.5	8.3	9.3	9.5
International Trade (Exp + Imp) ($ billions)	474.3	509.7	620.8	851.2	1,154.0
Fixed-asset investment ($ billions)	1.3	1.6	2.1	3.4	3.1
Value-added industrial output ($ billions)	2.2	1.4	2.0	3.3	2.0
Retail sales ($ billions)	1.2	1.2	1.4	1.1	1.6
Consumer price index (%)	0.4	0.7	-0.8	1.2	3.9
Urban per capita income (RMB)	765.9	836.5	939.4	1,033.2	1,149.0
Rural per capita income (RMB)	274.8	288.6	301.9	246.6	358.1
Rural/Urban income ratio (%)	35.9	34.5	32.1	23.9	31.2

Source: US-China Business Council 2005

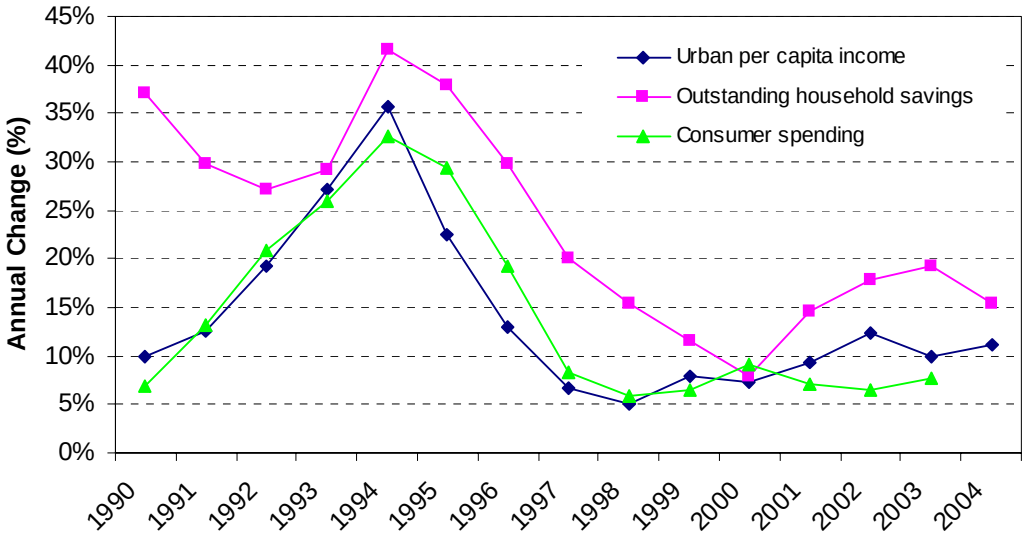

Figure 3. Chinese household income, savings, and spending change, 1990-2004

Source: China Statistical Yearbook 2005

While China's economic growth has been deemed to be unsustainable, Chinese individuals traditionally save a large share of their income (Deloitte 2005). As shown in Figure 3, from 1990 to 2004, the average household savings rate increased more rapidly than income and spending (with the exception of 2000). Typically, Chinese consumers save throughout their careers to fund their retirement and their children's education, especially as confidence in the social security system has declined and education costs have risen (Deloitte 2005; the World Bank 2005).

The high national saving and investment rates allow firms to produce more goods for export, yet it is risky for China to continue producing an excessive volume of goods relative to its consumption. According to Anthony Kuhn of National Public Radio (2005) "some economists say China's unnaturally high savings rate retards domestic consumption". According to an economist with the Asian Development Bank, China's state-controlled banks are inadequately allocating invested capitol. For example, China's bans produced only 9.5% GDP growth with 45% of GDP investment. Conversely, India produced 7% GDP growth with 25% GDP investment. A number of economists agree that China's central government could boost consumer spending if it invested less in unprofitable factories and more on health, education and poverty reduction (Kuhn 2005).

2.2. International Trade

China's low level of domestic consumption has forced the country to become highly reliant on international trade and foreign investment to fuel economic growth. By the end of 2004, China was the world's third leading trading nation, with bilateral trade valued at $1.2 trillion, or almost 70% of China's GDP. From 2003-2004, exports from China increased 35% to US$593 billion and imports increased 36% to US$561 billion (China Statistical Yearbook 2005). Comparatively, in 2004 US bilateral trade totaled $3.9 trillion with imports totaling $1.8 trillion and exports $1.1 trillion, Japan's bilateral trade totaled $882 billion, and Canada's bilateral trade totaled $572 billion (Europa 2005).

As shown in Table 3, China's leading exports are light machinery and manufactured goods. Furniture, the country's sixth leading export, (one-third of which were wooden) continued to increase despite rising raw material and labor costs. Meanwhile, China's demand for raw materials, machinery, fuel and agricultural products from overseas continues to increase. However, compared with 2004, imports of raw materials used in construction and heavy industrial manufacturing have slowed significantly, possibly an indication that government policies to reign in the economy have started to take effect.

The United States, Japan, and South Korea are China's top three trade partners. During the first half of 2005, bilateral trade between the US and China totaled $96.3 billion, a 25% increase over the first half of 2004. Exports

from China comprised the greatest share of the increase, totaling $72.7 billion (US-China Business Council 2005). Meanwhile, China is pursuing Free-trade Agreements (FTAs) with Australia and India. If these FTAs are approved, China will enjoy market economy status from 44 countries (Asia Times 2005).

Table 3. China's leading exports, Jan-Jun 2005 (US$ billion)

HS Code	Commodity Description	2005	% Change from 2004
85	Electrical machinery	72.5	30.6
84	Power generation equipment	68.7	29.7
61, 62	Apparel	28.3	20.5
72, 73	Iron & Steel	18.4	100.0
90	Medical & optics equipment	10.4	46.6
94	Furniture	10.0	28.7
28, 29	Inorganic & organic chemicals	9.5	53.2
64	Footwear & parts	8.8	23.5
27	Mineral fuel & oil	8.6	32.3
39	Plastics & articles	8.0	34.6

Source: US-China Business Council 2005

Table 4. China's leading imports, Jan-Jun 2005 (US$ billion)

HS Code	Commodity Description	2005	% Change from 2004
85	Electrical machinery & equipment	75.8	18.2
84	Power generation equipment	45.6	5.0
27	Mineral fuel & oil	28.9	33.0
90	Medical & optics equipment	20.9	9.5
72, 73	Iron & Steel	16.4	4.6
28, 29	Inorganic & organic chemicals	16.4	29.5
39	Plastics & articles	15.7	21.9
26	Ores, slag & ash	12.4	48.9
74	Copper & articles	6.3	27.6
87	Vehicles other than railway	5.0	-30.0
44	Wood Products	2.8	12.2

Source: US-China Business Council 2005

2.3. Foreign Direct Investment

China's rapid export growth can be largely attributed to the inflow of foreign investment, which tends to take place as acquisitions and mergers, as opposed to investments in new factories or green-field investments. Drawn by China's cheap labor and overhead costs, foreign investors are streaming into China to help their Chinese partners set up manufacturing operations, import raw materials, and export finished products. Analysts estimate that half of China's raw material imports are processed and re-exported. Electronics, plastics, textile and wood are primarily used in processing sectors, while machinery, fuels and basic materials tend to be consumed domestically (Anderson and Ho 2004).

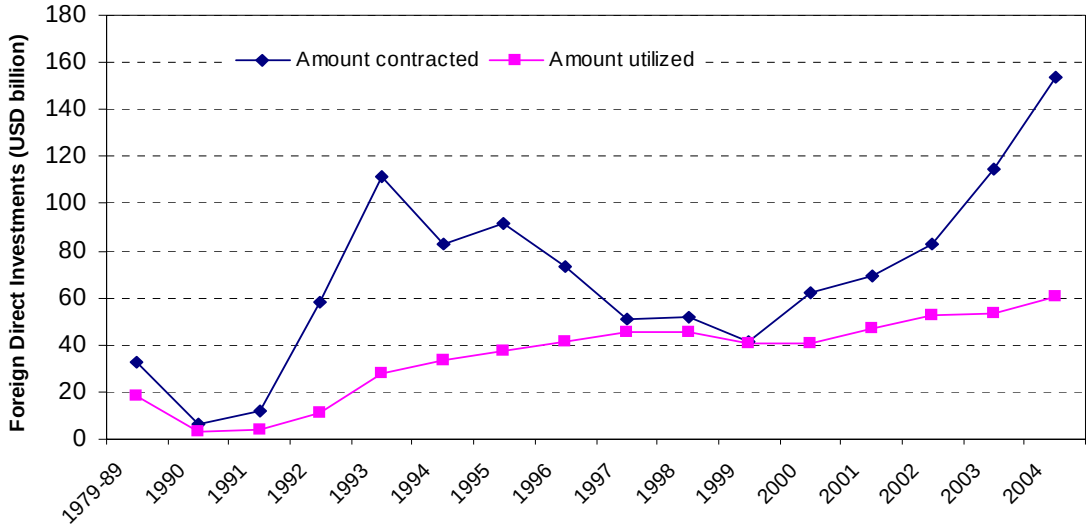

Figure 4. China's Foreign Direct Investment, 1990-2004

Source: The US-China Business Council

As shown in Figure 4, there have been two spikes in FDI between 1990 and 2004. The first occurred in the early 1990s, when Chinese leaders reaffirmed China's commitment to economic liberalization. Inflows first exceeded $100 billion in 1993 and ranged from $40 billion to $90 billion between 1994 and 2000. Foreign direct investment began to increase again in 1999, after China was admitted to the WTO and Beijing was awarded the 2008 Olympics. By 2004, FDI reached $153 billion. According to the China Ministry of Commerce (2004), FDI accounts for 10% of China's total investment in fixed assets. Despite the surge in FDI, the utilization rate and return on investment remained low because a large proportion of FDI has been directed towards state-owned firms, which are notoriously inefficient.

The increase in FDI in China has diverted investment from other developing regions such as Latin America and Southeast Asia. At the same time, China's integration in the global supply chain makes it a huge consumer of raw materials from these regions. Figure 5 illustrates the proportion of the world's FDI that is invested in China. The dynamics of the proportion change illustrate China's integration in the global supply chain.

While China has become a leading destination for FDI, China's government encourages domestic enterprises to pursue mergers and acquisitions overseas to secure raw material supplies and diversify China's economy. Chinese companies have primarily focused on investments in the raw material and energy sectors, particularly in Latin America and Africa. By 2004, Chinese capitalists had invested over $30 billion in more than 160 countries. The majority of these investments are in mining ventures (55%) and most investments have been directed to Latin America (49%) (China Daily 2005a).

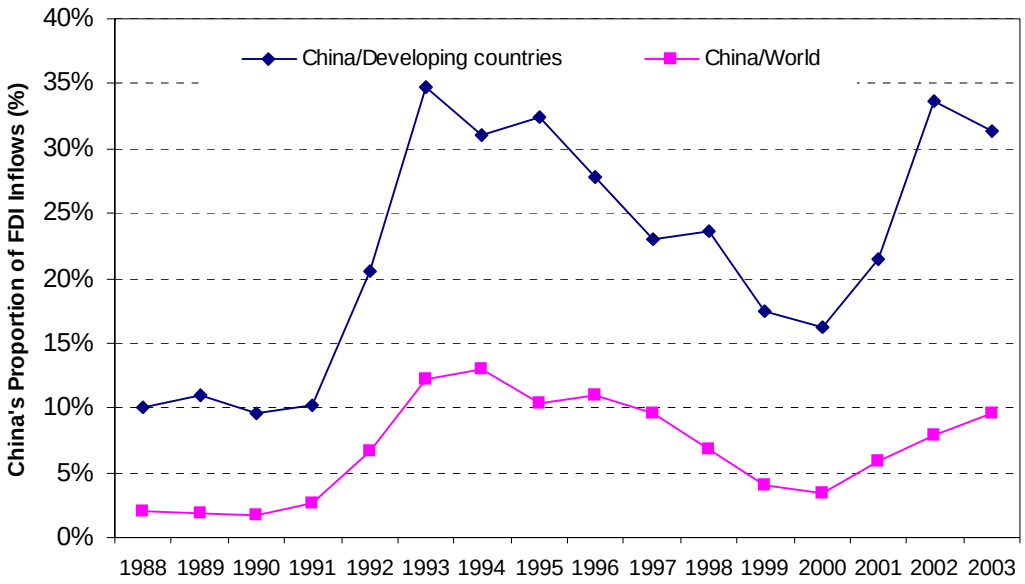

Figure 5. China's proportion of FDI inflows, 1988-2003

Source: Eichengreen and Tong, 2005

2.4. Population Demographics

According to the China Statistical Yearbook (2005), China's population had reached 1.3 billion by the end of 2004, making it the world's most populated country. As shown in Figure 6, China's population is concentrated in the coastal provinces, while less than 5% of the population is located in the vast western regions that account for 40% of China's total land area.

China is experiencing a demographic transition of historic proportions. The smaller and more affluent households created by China's declining birth rate (e.g. one-child law), the eroding tradition of multiple generations living together, a rise in the number of seniors, and migration of rural workers to urban areas has had significant impacts on China's economy and is shaping the mix of goods and services demanded. And in a country where about 88 million rural Chinese earn less than $1 a day, the migration of workers to urban areas is likely to continue (BBC 2005).

Population Growth Rate

While China is the world's largest economy, the country's population growth rate in 2004 was .059%, down from .06% in 2003 (China Statistical Yearbook 2005) (Figure 7). China's population growth rate has been significantly lower than in any other developing country (Pannell 2003).

In 1979, the Chinese government adopted the one-child policy which lowered the birth rate from an average of 5.01 children per woman in 1970 to 1.84 in 1995. Despite this dramatic decline in the birth rate, China's net population is still on the rise since the large number of children born before 1970 are now having children of their own. While population goals have not been met, the average family size has declined from 3.96 in 1990 to 2.98 in 2004 (Figure 8), which has improved the standard of living for many Chinese families (China Statistical Yearbook 2005). Analysts expect household size to continue to decline, and as shown in Figure 9, the number of 2-4 person households will increase and the number of multi-generation households will decline (Laurent, undated).

As more educated urban couples delay starting a family, not only has family size declined, but urban families are wealthier than their rural counterparts – and the gap is growing. In 2004, average annual urban household income exceeded US$3,722 (RMB 30,000), almost twice the income of rural families (Figure 10). Such gaps exist not only between rural and urban areas, but also between different regions of the country (Figure 11, Table 5).

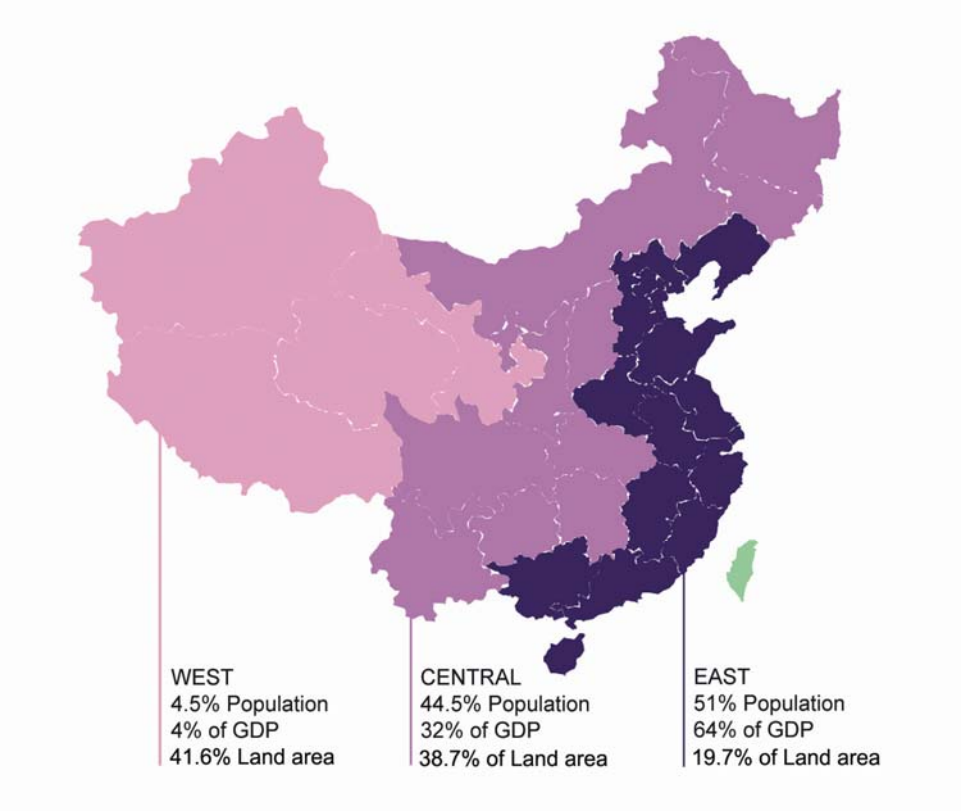

Figure 6. Population and GDP distribution in China's mainland

Source: China Statistical Yearbook 2005 and Laurent, undated

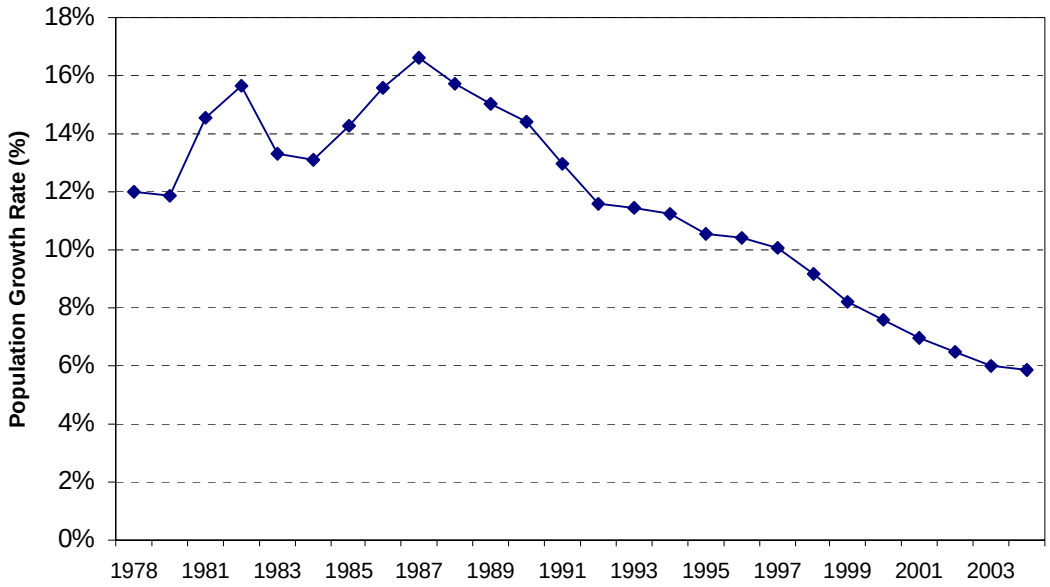

Figure 7. China's population growth rate, 1978-2004

Source: China Statistical Yearbook 2005

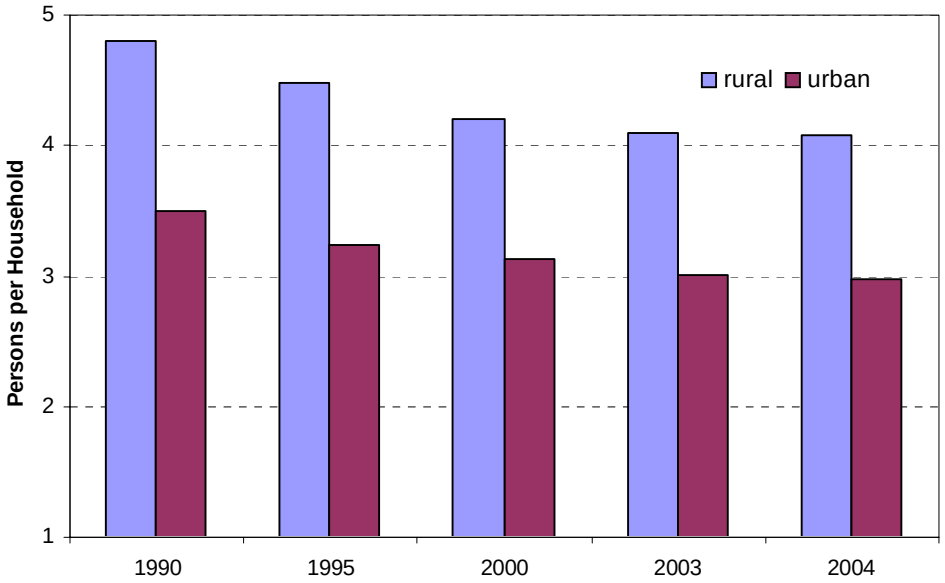

Figure 8. Average household size in urban versus rural areas, 1990-2004
Source: China Statistical Yearbook 2005

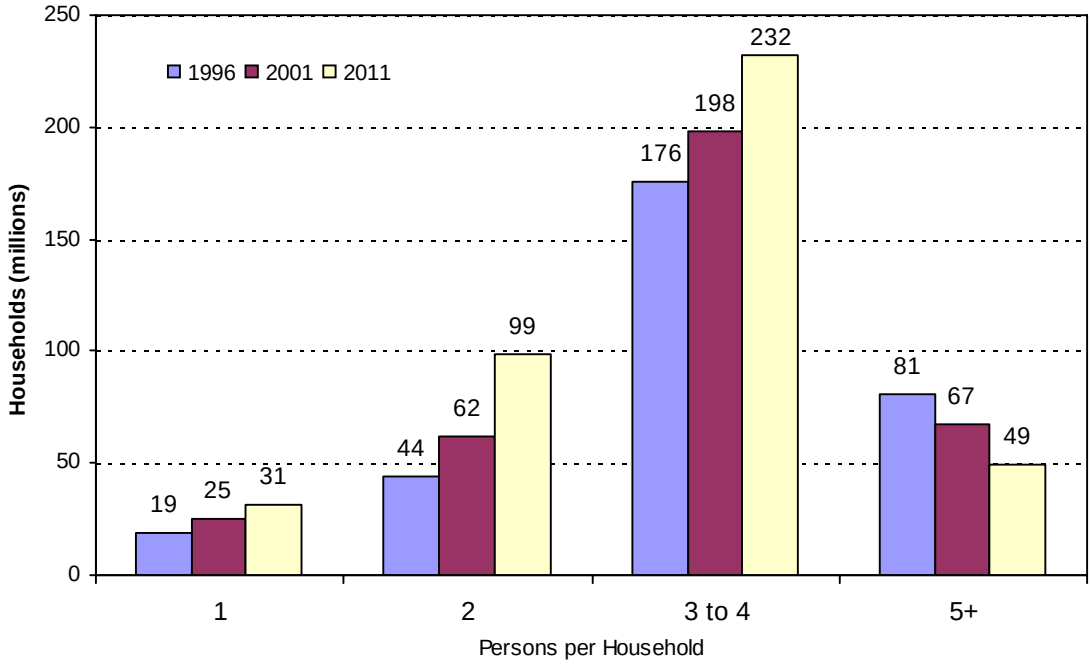

Figure 9. Distribution of Chinese households by size
Source: Laurent, C. undated.

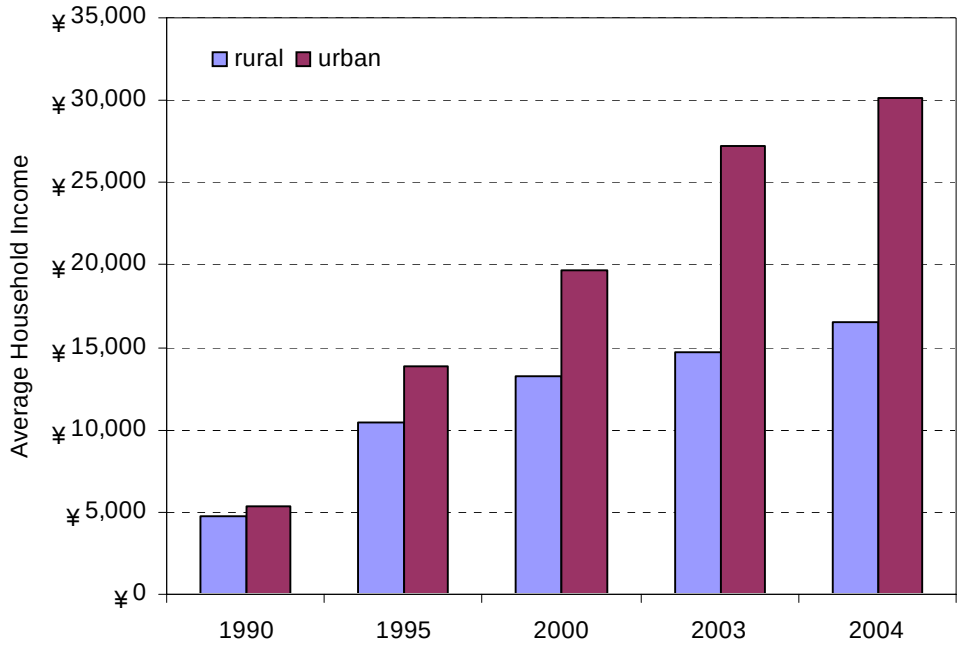

Figure 10. Average household income in rural versus urban areas
Source: China Statistical Yearbook 2005

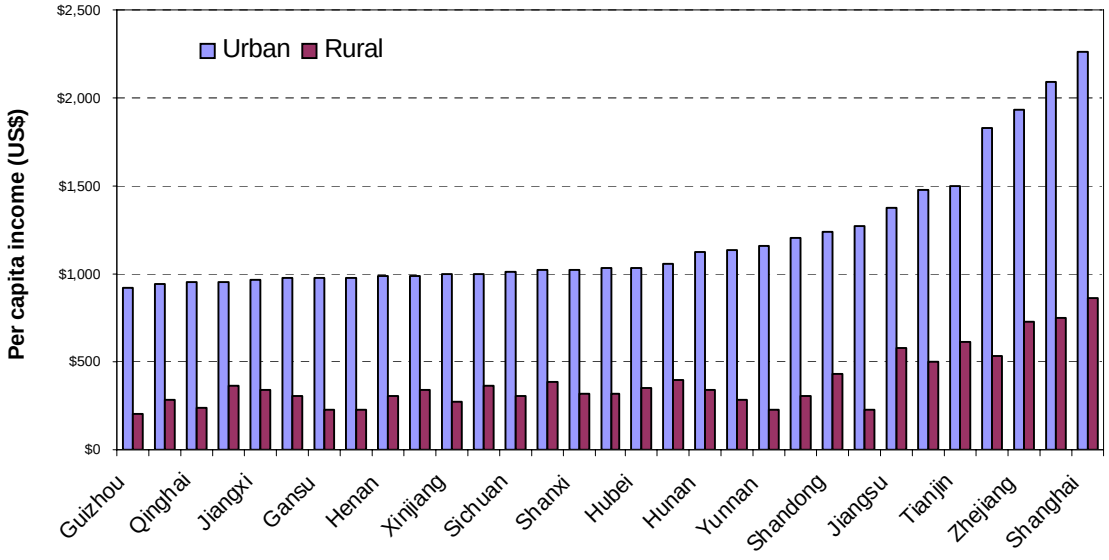

Figure 11. Per capita income by region, 2004
**Exchange rate :1 USD=8.21 RMB*
Source: China Statistical Yearbook 2005

Table 5. Per capita income by region, 2004

	Urban		Rural		Rural/Urban
	RMB	USD	RMB	USD	Ratio
National Average	¥ 10,129	$1,235	¥ 2,936	$358	29.0%
Guizhou	¥ 7,519	$917	¥ 1,722	$210	22.9%
Ningxia	¥ 7,749	$945	¥ 2,320	$283	29.9%
Qinghai	¥ 7,785	$949	¥ 1,958	$239	25.2%
Heilongjiang	¥ 7,803	$952	¥ 3,005	$366	38.4%
Jiangxi	¥ 7,877	$961	¥ 2,787	$340	35.4%
Anhui	¥ 7,994	$975	¥ 2,499	$305	31.3%
Gansu	¥ 7,991	$975	¥ 1,852	$226	23.2%
Shaanxi	¥ 8,043	$981	¥ 1,867	$228	23.2%
Henan	¥ 8,073	$985	¥ 2,553	$311	31.6%
Hainan	¥ 8,122	$990	¥ 2,818	$344	34.7%
Xinjiang	¥ 8,202	$1,000	¥ 2,245	$274	27.4%
Jilin	¥ 8,227	$1,003	¥ 3,000	$366	36.5%
Sichuan	¥ 8,261	$1,007	¥ 2,519	$307	30.5%
Hebei	¥ 8,381	$1,022	¥ 3,171	$387	37.9%
Shanxi	¥ 8,429	$1,028	¥ 2,590	$316	30.7%
Inner Mongolia	¥ 8,488	$1,035	¥ 2,606	$318	30.7%
Hubei	¥ 8,522	$1,039	¥ 2,890	$352	33.9%
Liaoning	¥ 8,707	$1,062	¥ 3,307	$403	37.9%
Hunan	¥ 9,190	$1,121	¥ 2,837	$346	30.9%
Guangxi	¥ 9,324	$1,137	¥ 2,305	$281	24.7%
Yunnan	¥ 9,546	$1,164	¥ 1,864	$227	19.5%
Chongqing	¥ 9,910	$1,209	¥ 2,510	$306	25.3%
Shandong	¥ 10,187	$1,242	¥ 3,507	$428	34.5%
Tibet	¥ 10,475	$1,277	¥ 1,861	$227	17.8%
Jiangsu	¥ 11,237	$1,370	¥ 4,754	$580	42.3%
Fujian	¥ 12,118	$1,478	¥ 4,089	$499	33.8%
Tianjin	¥ 12,280	$1,498	¥ 5,020	$612	40.9%
Guangdong	¥ 14,953	$1,824	¥ 4,366	$532	29.2%
Zhejiang	¥ 15,882	$1,937	¥ 5,944	$725	37.4%
Beijing	¥ 17,117	$2,087	¥ 6,170	$752	36.0%
Shanghai	¥ 18,502	$2,256	¥ 7,066	$862	38.2%

**Exchange rate :1 USD=8.21 RMB*

Source: China Statistical Yearbook 2005

These regional differences were illustrated in a 2005 survey of the hottest real estate markets in 35 of China's largest cities. Beijing and Tianjin in the north, and Shanghai and Guangzhou-Shenzhen, on the coast were ranked the top three destinations for real estate investment thanks to high GDP growth and concentrations of middle class consumers. Chongqing, an inland city, ranked number four as an overall desirable investment destination, and as the second and the third most attractive investment destination for office and residential construction investment, respectively (Table 6) (China Real Estate Top 10s Research Panel 2005).

Table 6. Top ten investment destinations among mid- to large-sized Chinese cities, 2005

Overall Rank	City	Total Grade	Residential Construction		Office Construction		Commercial Construction		Investment Environment	
			Grade	Rank	Grade	Rank	Grade	Rank	Grade	Rank
1	Shanghai	4.54	2.96	1	2.75	2	2.94	1	2.69	2
2	Beijing	4.42	2.47	2	3.50	1	2.13	3	2.96	1
3	Guangzhou	2.08	1.19	8	1.62	3	1.91	5	1.58	3
4	Chongqing	1.96	1.72	3	1.30	6	2.78	2	1.14	10
5	Shenzhen	1.67	0.27	34	1.37	5	2.13	4	1.46	6
6	Nanjing	1.56	1.27	7	1.23	8	1.04	11	1.52	4
7	Tianjin	1.56	1.34	6	1.45	4	1.26	6	1.19	7
8	Hangzhou	1.18	1.06	13	1.18	10	1.16	8	1.06	12
9	Ningbo	1.00	0.75	25	0.89	17	1.15	9	1.15	9
10	Wuhan	0.96	1.13	11	1.01	11	0.79	19	0.82	19

Source: China Real Estate Top10s Research Panel 2005

An Aging Society

The success of the one-child policy advocated by the government and the social trends towards later marriages and delays in having children has produced "one of the most rapidly aging societies ever" (Economist 2005a). As shown in Figures 12 and 13, the proportion of the population 65 and older increased between 1990 and 2004, while the number of children under 14 declined (China Statistical Yearbook 2004-2005). Younger generations, particularly the so-called "little emperors" (only children who are doted upon by their parents and grandparents as a direct result of the "one-child" policy), have become very brand conscious, creating a market for products such as IKEA and Nike (China News 2005b). However, China's growing number of seniors could have negative impacts on consumption patterns as younger generations respond to increasing pressure to care for elderly family members, which is central to the traditional Confucian value of filial piety.

China's seniors, who experienced wars and the Cultural Revolution, have been called "the most abstemious of all" with little desire for excessive consumption and self-indulgence (Economist 2005a). Tapping into this market is challenging but can be rewarding. P&G's safety soap, Nestle's milk powder and "Guibiewan" (a domestic food supplement) are examples of products successfully marketed to the senior market by emphasizing health benefits and traditional Chinese family values (Economist 2005a).

There has also been a shift in spending between generations who established their spending habits during the 1960s and 70s, when resources were scarce, and younger generations who established their spending habits during the 1980s and 1990s. Spending among younger consumers has become a way to display wealth to friends and neighbors and this group, as in other areas of the world, is a key demographic for luxury goods producers.

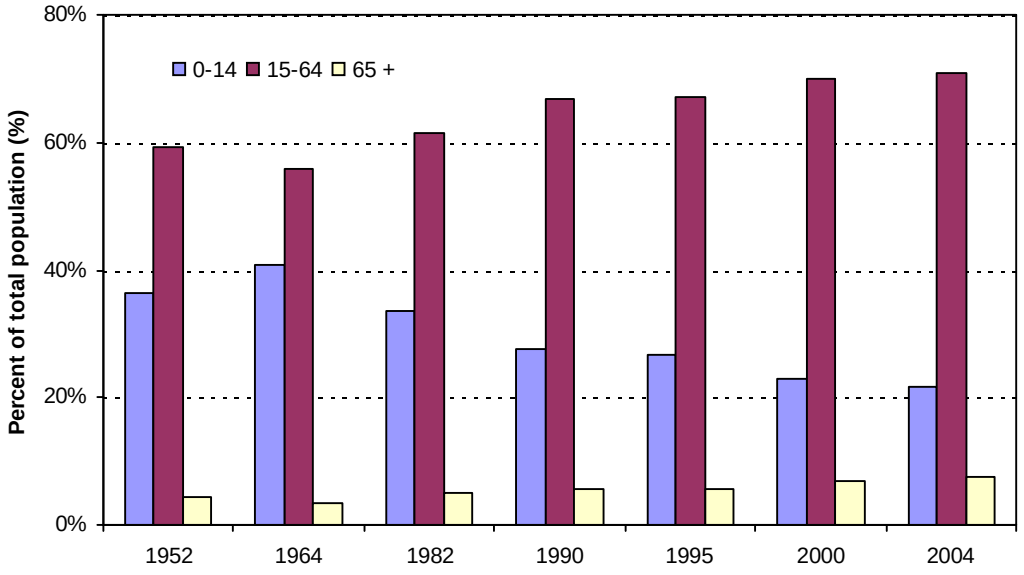

Figure 12. China's population by age group, 1952-2004
Source: China Statistical Yearbook 2004 and 2005

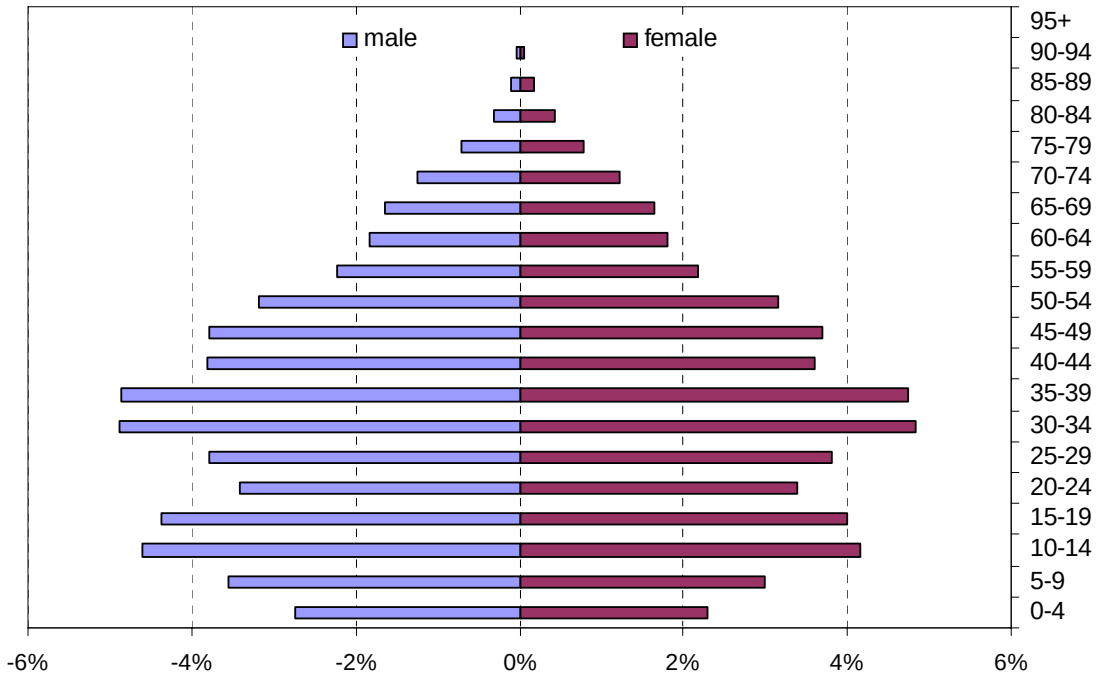

Figure 13. Age distribution in China, 2003
Source: China Statistical Yearbook 2004

Labor and Migrant Populations

As stated earlier, China's demographic profile is changing in terms of education, age, and geographic distribution. While approximately 60% of China's people are rural farmers, rapid urbanization has drawn millions of rural people to cities with hopes of higher paying jobs and a better standard of living. In 2001, rural workers made up 50% of China's workforce, up one-third from 1990 (Zhang 2002). The educational makeup of the workforce is changing as well. According to Laurent (undated), between 1991 and 2021 China's labor pool is expected to include a lower proportion of workers in agriculture and manufacturing, and more skilled and white collar workers.

The size of China's workforce is also expected to contract. China's rate of labor pool growth is projected to slow from .14% annually to .06% between 2001 and 2011, and the workforce will peak at 762 million by 2014 (Laurent, undated). Despite this decline, approximately 7 million new workers join the workforce each year (Pannell 2003).

These demographic changes have directly affected labor availability and employment patterns. Urban centers and manufacturing bases, which initially sprung up along the coast, have spread to interior China, which has created a back-flow of migrant workers (or "farmer-turned-workers"). Factories in South China's Pearl River Delta, which used to employ millions of migrant workers, now face a 2 million person labor shortage (Asian Labor News 2004). Analysts believe the shortage was caused by rapid demand for labor and an underdeveloped labor market and they expect it to be temporary. However, as China's population continues to become more educated, and as people demand higher wages in the next few decades, productivity will be critical for maintaining GDP growth.

2.5. Housing Industry Indices and Market Development

The government's decision to privatize the housing industry has had a profound impact on China's economy. Until the late-1990s, Chinese citizens lived in small, poor quality apartments provided by their employer, and since homes could not be sold, residents had no incentive to make improvements. Faced with the need to boost the economy and reduce the economic burden associated with providing and maintaining public housing, the central government phased in privately owned housing in 1997. Privatization has allowed consumers to own their home or condominium, although the government continues to retain ownership of all land in China and provides 70 year leases to the homeowner (Wang, undated). Once the first lease expires, the home owner has an opportunity to renew.

Aided by one-time government subsidies to help individuals buy their own homes, privatization has led to huge consumer demand for larger and better quality homes and related goods and services. In urban areas, aging 3-4 story walkup apartments are rapidly being razed and replaced with high rise condominiums and apartments. In 2003, an estimated 18.7 million housing units were built (based on an 80 m^2/860ft^2 unit basis) and analysts project that 23.6 million new units will be built in 2005 (Zhang 2004) (Table 7). From 1990-2004, 63 million m^2 (678 million ft^2) of new residential floor space was added to the housing market (Figure 14).

Table 7. New construction starts by type, 2004-2006

Thousands of units	2004	2005	2006
Total construction starts	15,600	16,380	18,020
Of total starts, residential	14,101	10,510	11,560
Of residential, multi-family	4,108	4,315	4,745
Of total starts, commercial	1,482	1,555	1,715

**Based on 80 m^2 per unit*

Source: FAS 2005.

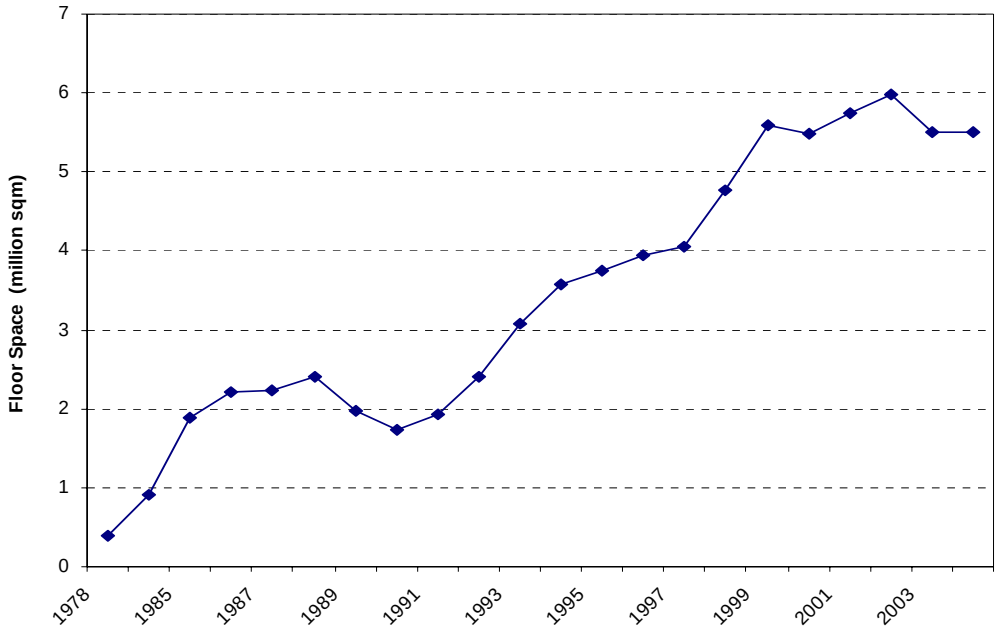

Figure 14. Annual urban residential housing construction by floor area, 1978-2004

Source: China Statistical Yearbook 2005

Over the past few years, demand in China's urban housing markets has increased and prices have skyrocketed. Average home prices in Shanghai rose 14.6% in 2004 to an average $70 per square foot. Within the city's highly desirable central district, prices rose 27% in 2004 - and 68% over the past three years - to more than $109 per square foot. In addition to rising demand from Chinese consumers, intense growth in China's urban construction markets has drawn foreign and domestic real estate speculators. According to a 2005 survey, approximately one-third of the buyers of high-end Shanghai properties were investors (St. Petersburg Times 2005). The booming market has also attracted more developers and competition has become extremely intense. Many developers are including more and higher quality features to differentiate their projects from their competitors. In addition to having more features, homes are becoming larger. As shown in Figure 15, per capita living space in urban areas has increased from 3.6 m^2 (39 ft^2) in 1980 to 10.3 m^2 (111 ft^2) by 2000. By 2005 per capita living space is expected to reach 23 m^2 (248 ft^2).

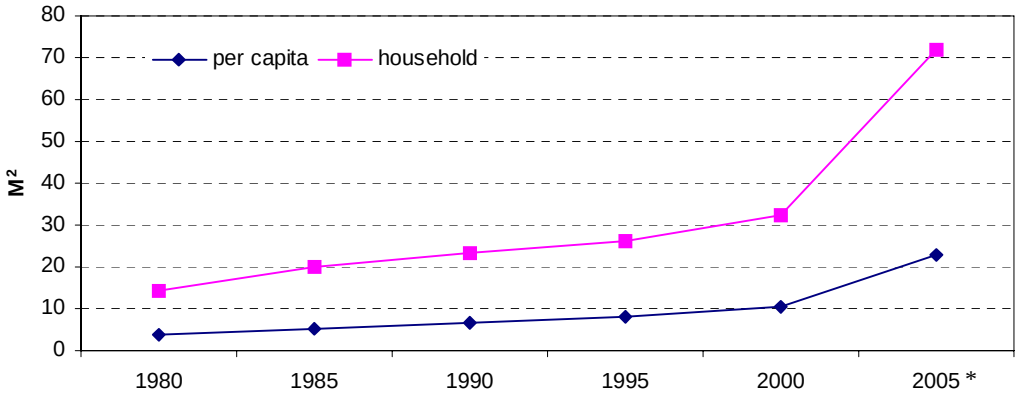

Figure 15. China's urban living space, 1980-2005

Source: China Statistical Yearbook, various years

Privatization also stimulated demand for interior finishing services, furniture, appliances, and other complimentary goods and services. Between 2001 and 2002, spending on real estate projects increased 31% to $97 billion. The construction industry accounted for 6.6% of China's GDP, making it the country's fourth largest industry (Hu 2005). Construction now exceeds other industries such as steel and energy (ITTO 2002). In 2004, the construction and interior finishing trades employed 37 million workers.

In 2004, blaming the real estate market for energy shortages, higher commodity prices and unaffordable housing, the Chinese government implemented a number of policies designed to curtail the number of new housing starts. These policies include raising the interest rate and minimum down payment for home loans, levying higher business taxes for developers, and instituting a 5% capital gains tax on the sale of homes owned for less than two years to discourage home "flipping". China has encountered a problem with developers purchasing 70-year land leases in fast growing urban areas and then waiting for real estate prices to increase before developing. New real estate policies now address land speculation. Landowners who purchase a piece of land and fail to develop it within one year of the date of purchase are charged a "land idling" fee. If the land remains undeveloped for two years, the right to develop the property is revoked.

According to the St. Petersburg Times, "a report in September by Deutsche Bank said the new regulations have already taken effect in Shanghai, cutting sales in half and reducing prices by as much as 15 percent in four months. The biggest drop has been in overbuilt suburban areas, with prices in central Shanghai holding steady, thanks to strong demand from foreigners" (St. Petersburg Times 2005). A combination of government regulations, overbuilding, skyrocketing prices, and fear of a real estate bubble slowed housing demand in the second half of 2005 in major Chinese cities. Sales of luxury condominium projects are slowing and some developers have lowered their selling prices. For example, prices for luxury condominiums at the Skyline Mansion in Shanghai have been reduced from US$12,000 per square meter to $7,000 (Xin 2005). The southern city of Guangdong and the mid-western cities of Chongqin and Chengdu have now become the top locations for developers (China Real Estate Top 10s Research Panel 2005).

Housing and Construction Types

Prior to 1990, most apartments included 2-3 bedrooms, a bathroom, a small kitchen and no living room. For most of the 1990s, a small living room was typically added to new construction. After 1998, builders built larger kitchens and added a dining room and more storage or closet space. More recently, the emergence of China's middle class has spurred the addition of a nanny's room to apartments and single family homes. Most white collar professionals and some blue collar workers employ live-in nannies who live in small rooms adjacent to the kitchen and laundry rooms. According to Chinese residential developers, the absence of this feature from US house designs is considered a shortcoming.

In most urban areas, approximately 80% of residents live in multi-family high rise buildings, which range from low-end, "economical" six-floor walkups to luxury high rise apartments and condominiums. As shown in Figure 16, approximately 48% of urban residents live in buildings that are six-stories or less, 28% in high-rise apartment buildings, and 3% in luxury condominiums. Few people live in low density housing, which includes high-end luxury single-family homes or "villas" geared to expatriates and wealthy Chinese. These villas, which are typically western style, account for less than 1% of urban housing.

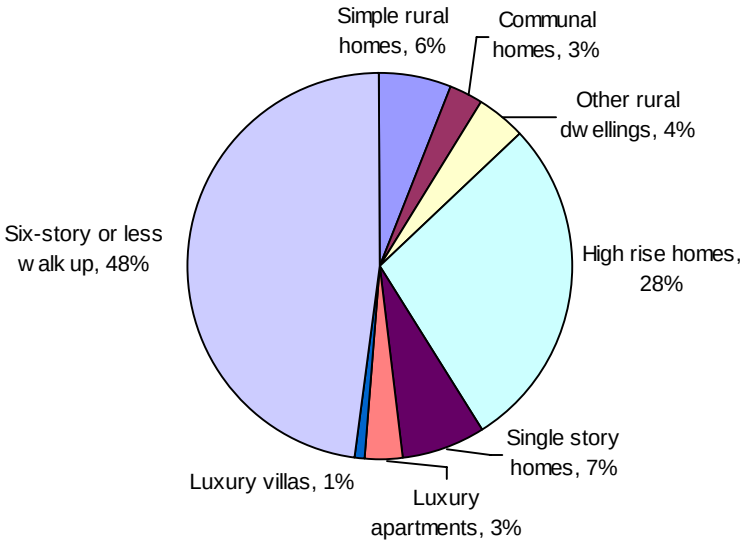

Figure 16. Housing by type, 2001

Source: China Economic News, Quoted in FSC ISA Report 2001

New Housing Starts by Material

Concrete, steel and brick are the main building materials used in China's cities. Wood frame construction, which is popular in traditional Chinese architecture and among farmers, has not seen much penetration since housing reforms began, and will likely only be affordable for high-income Chinese and expatriates in the foreseeable future. Approximately 300 wood frame homes are completed each year. In 2005 at least half of these homes were built as rentals for expatriates.

While wood frame construction has not been well accepted, the construction sector is the second leading wood consuming industry, behind pulp and paper manufacturing. According to the President of the China Forestry Distribution Association, in 2004 China consumed 300 million cubic meters of wood, 21% of which was used in the construction industry. Much of this is used as concrete formwork that is either produced from domestic softwoods or imported Russian logs. US softwood species are used primarily for outdoor landscaping and US hardwoods are used as interior products such as flooring and cabinets.

Housing Categories by Ownership and Financing

Private Housing

By 2000, the number of privately owned homes was fifteen times greater than in 1991. In 1998, a State Statistical Bureau survey indicated that almost 33% of urban residents own their own homes, although many in the industry believe that this estimate is high.

The mortgage system is a new phenomenon in China, yet it has developed quickly. Four state-owned commercial banks extend up to 30 year home mortgages. Home mortgages typically require a 20 percent down payment, yet given China's high rate of personal savings (up to 45%), a number of buyers pay as much as 33-50% up front. Many employers also have "housing provident funds" for their employees. This savings program allows employees to contribute four to eight percent of their salaries and the employer matches five percent of the contribution. As of September 2000, 67.8 million employees have participated in the program (Ye 2004).

Public Housing

Although state-provided housing is being phased out, the government still subsidizes housing for low-income citizens. Since the mid-1990s, the Chinese government has launched a succession of housing welfare policies, such as the welfare housing project, the affordable housing policy, and the low-rent housing policy. The Housing Provident Fund (*Zhufang Gongjijin*) compulsory savings scheme and subsidized construction of 'affordable

housing' (*Jingji Shiyong Fang*) are the two primary home ownership-oriented housing policies. However, despite substantial subsidies from the government, which account for roughly half of the purchase price, it is still difficult for middle- and lower-middle income households with annual incomes of less than (US$6,980) RMB 60,000 (the program's intended beneficiaries) to afford homes (Duda et al. 2005).

3. CHINA'S FOREST RESOURCES AND WOOD SUPPLIES

Years of over harvesting, combined with inhospitable growing conditions in many Western China provinces, have left China heavily dependent on foreign timber. Approximately 18% of China's total land area, or 170 million hectares, is forested -- just more than half of the global average (SFA 2005). China's total forest area contains only approximately 12.5 billion m^3 of timber.

In a bid to increase forest coverage and supply domestic demand with domestically grown timber by 2010, China has become more involved in international forest projects such as government-to-government programs and foreign investment. For example, loans from the World Bank and the European Commission funded the "Green for Grain," program which provided farmers with grain as an incentive to convert their crop land to forest land. The program increased forest cover on approximately 3.6 million hectares along the Yangtze and Yellow Rivers. Funds from the World Bank and the European Union finance reforestation and afforestation programs in the Sichuan, Hunan, and Hainan provinces. These funds are expected to total $93.9 million between 2001 and 2007 (World Bank 2002).

According to the State Forestry Administration (2005), China also received $372 million in foreign investment for forestry programs in 2003, over 65% of which was direct investment. Fast-growing high-yield plantations, wood and bamboo processing, flowers, seeds and seedlings are the leading investment areas (Figure 17). Fujian Province, which received 43.3% ($161 million) of China's total FDI in 2003, is the leading forestry investment destination (SFA 2003). Stora Enso reportedly signed an agreement with the local government to purchase 34,000 hectares of land use rights in South China's Guangxi Province, aimed at establishing 120,000 hectares of hardwood plantations to supply pulp, paper and panel manufacturing plants in southern China (AFPA 2005).

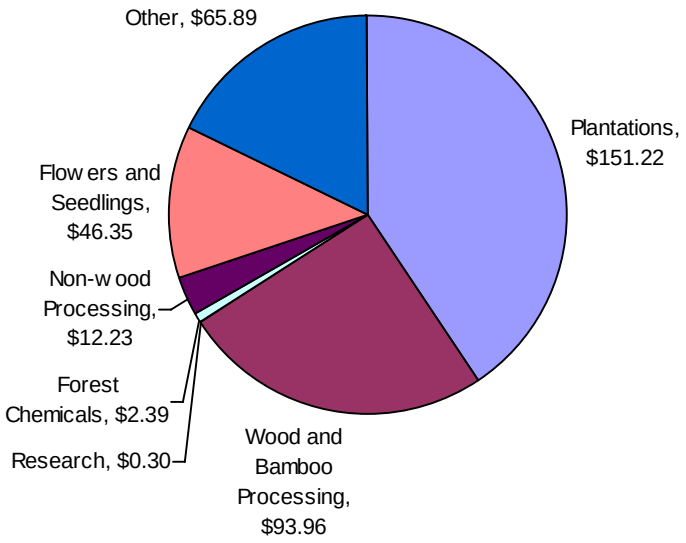

Figure 17. Areas of foreign investment in China's forest industry, 2003 (US$ millions)

Source: SFA 2003

In addition to taking steps to increase the domestic forest stock, China's government is also attempting to ensure a long term timber supply by investing in overseas forest programs. By 2002, China's government had at least 30 overseas forestry projects, primarily in Russia, South Korea, Tanzania and New Zealand (FAS 2002). In 2003, "The Agreement on Collaboration in Exploiting Overseas Forest Resources between the State Forestry Administration and China Development Bank" was issued, which encouraged Chinese companies to develop forestlands overseas. In the same year, 35 Chinese logging companies and 25 sawmills established operations in Russia, producing 1.5 million cubic meters of logs, and 1.3 million cubic meters of sawnwood (SFA 2003). Although most Chinese companies with logging operations in Russia transport the logs to China for processing, some Chinese logging

companies have set up processing facilities near the timber source, particularly in the Russian Far East, to produce flooring, lumber and other wood products (FAS 2002).

Demand for timber in recent years has skyrocketed, driven primarily by increased demand in the housing market and paper industry. As shown in Figure 18, construction (including interior decoration), furniture and paper (pulp) account for approximately 2/3 of the timber consumed.

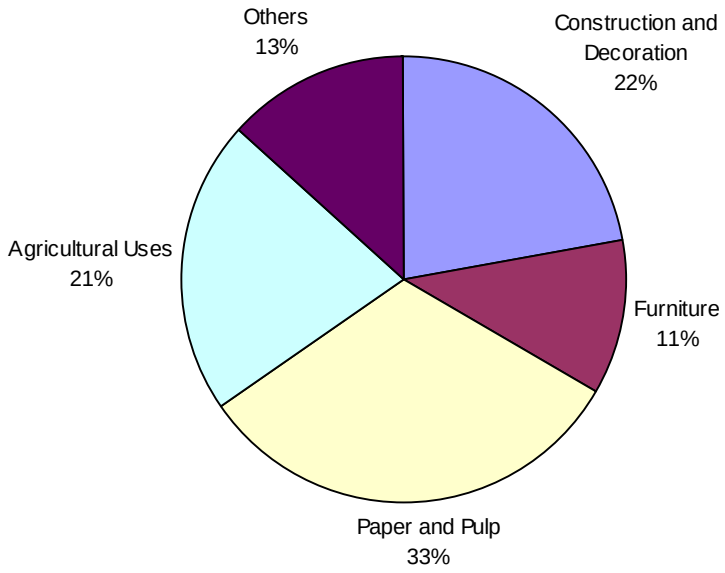

Figure 18. Timber consumption by industry sector, 2003
Source: Wood Comprehensive News, 2005

3.1. Domestic Supply

In 2003, approximately 116 million hectares of China's forests were naturally forested areas and 53 million hectares were plantations (SFA 2003). Ninety percent of China's growing stock is concentrated in the north (Heilongjiang, Jilin, and Inner Mongolia), the west (Yunnan, Sichuan, and Tibet), and the south (Fujian, Hunan, Hubei, Jiangxi, Zhejiang, Hainan, Guizhou, Guangxi, and Guangdong). These forests include Chinese fir, pine, larch, eucalyptus, poplar, natural hardwoods, and natural softwoods. Industrial roundwood production in 2004 was estimated to be 43 million m^3 (FAS 2004). Despite recent harvest restrictions, the forest products industry continues to play an important role in China's economy, accounting for approximately 8% of total GDP (Zhang and Chen 2001).

Due to a lack of transparent data regarding the precise area and stocking volume of China's forest land, it is difficult to determine if China can supply future domestic demand on its own. However, Bullard and Nilsson (2004) estimate that China's forests will be able to supply up to 291 million cubic meters of wood fiber annually within the next two decades, which could pose a problem for wood imports and non-wood substitutes, such as agricultural and bamboo products (Table 8). However, this estimate is the most optimistic and a more realistic estimate would place future timber supply in the area of 150-200 million cubic meters annually.

Table 8. China's projected fiber supply

Source	Lower bound (current management)	Middle (optimistic)	Upper bound (very optimistic)
Timber forest	12	33	63
Plantation (slow growing)	20	51	85
Plantation (fast growing)	40	41	51
Non-industrial	63	63	80
Miscellaneous	12	12	12
Total roundwood fiber	**147**	**200**	**291**
Non-wood (agricultural)	20	32	32
Non-wood (bamboo)	9	6	9
Total non-wood	**29**	**38**	**41**

Source: Bullard and Nilsson 2004

China's forests are either owned by the central government, the provinces, or collectives – all of which tend to be inefficiently managed. Private ownership of forested areas was permitted until the early 1950s, but land reforms led to collectivization. Encouraged by local government officials who needed to generate revenue, the collectives operated efficiently, rapidly logging the natural forests. Prices were set by the government and timber producers were paid based on their ability to meet quotas instead of by market prices (World Bank 2000). Even throughout the era of reforms, the state maintained ownership and controlled forest extraction operations. Privatization was not officially acknowledged until 2003, when the authorities issued the "Decision on Speeding up Forestry Development by the Central Government" (commonly referred to as Document No. 9), a policy that encourages diversified forest ownership. According to the State Forestry Administration (2005), private forests now account for over 20% of China's forests, and 41% of juvenile forests, an indication that private foresters will play an increasingly important role in China's forestry industry (Table 9).

Table 9. China's forest ownership, 2004

Ownership structure	Area (million hectares)	Percent
State-owned	72.85	42
Collectively-owned	64.84	38
Individual-owned	35.10	20
Total	**172.79**	

Source: FAS 2005

Following the devastating floods of 1998, a national forest protection program was initiated, which has greatly reduced timber harvests. In 1999, the central government developed the Natural Forest Conservation Plan (NFCP), which outlined measures to protect natural forests along the Yangtze and Yellow Rivers and in state-owned forests located in Inner Mongolia and the northeastern provinces. There were also provisions to protect collectively owned natural forests under provincial jurisdiction. The government also launched the "Green for Grain" program in 1999 to compensate farmers for growing trees instead of planting high-yield crops. As shown in Figure 19, from 1998 to 2002 the State Forestry Administration and the central government reduced official timber harvest quotas by approximately 40%. The government also imposed strict logging bans in the upper Yangtze River and upper and middle Yellow River basins and curtailed logging in state-owned forests in the Northeast and Inner Mongolia.

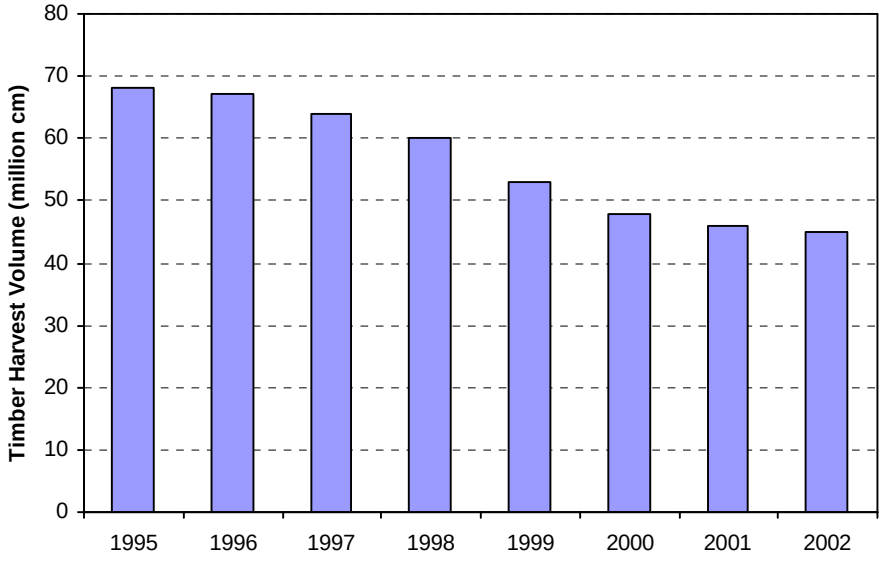

Figure 19. China's timber harvest quota, 1995-2002
Source: AFPA 2004a

Logging restrictions and afforestation efforts have had a positive effect on China's forest inventory. According to the 2004 forest inventory, China's forests are growing at an annual rate of 497 million cubic meters. Industry experts expect that when the State Council releases the 11th Five-Year Plan (2006- 2010) in 2005 it will increase the logging quota from 223.1 million cubic meters outlined in the 10th Five Year Plan (2000-2005) to approximately 250 cubic meters over the next five years. If illegally logged timber is included, (estimated to be 40 million cubic meters annually), China will produce approximately 90 million cubic meters of timber annually (FAS 2005). This suggests that, currently, illegal timber supplies account for a substantial proportion of the country's total timber supplies. As the Chinese government vows to take a strong stand against illegal logging and illegal trade (Jiang 2006), it can be expected that China will further increase its demand for legally sourced timber imports, as well as timber from domestic plantations and non-wood substitutes, to fill in the demand-supply gap.

3.2. Imports

Forest products imports are crucial to China's industrial and economic growth. Huge volumes of logs and lumber are imported, processed, and re-exported as finished goods. In 2003, China imported $27.7 billion in forest products, a 29% increase from 2002, while manufacturers exported $12.2 billion, a 28% increase from the prior year (SFA 2005).

According to the State Forestry Administration, 43% of the wood used in China in 2003 was imported (including fuel wood, paper and pulp) (SFA 2005). As shown in Figure 20, pulp and paper were the leading imports, followed by logs, lumber, and panels.

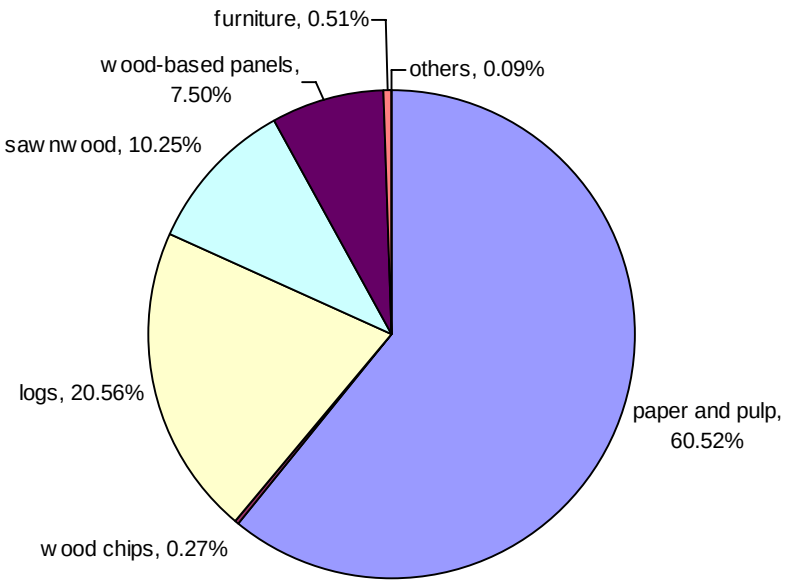

Figure 20. Forest products imports by sector, 2003 (by volume)
Source: SFA 2003

3.3. Impacts of Illegally Sourced Wood Products on US Exports

Illegal logging is a significant problem in China. Each year, approximately 40 million cubic meters is harvested illegally in local forests and huge volumes are imported from neighboring countries. China is now the world's leading user of illegally harvested timber.

Despite a 1998 government-imposed logging ban, over 40% of China's timber production reportedly exceeds government quotas (FAS 2005). China also imports a large volume of illegally logged timber from Cambodia, Papua New Guinea, Myanmar, Malaysia, Philippines and Russia. Approximately 20% of Russia's harvests are illegally logged, a substantial amount of which is sold to China. And, according to Telepak/EIA (2005), huge volumes of illegally harvested merbau from Papau New Guinea were sold to over 500 large flooring mills in Zhejiang in eastern China, processed and exported to North America, Europe and Japan.

The magnitude of the illegal timber trade between China and many of its suppliers is indicated in the trade data shown in Table 10. For example, in 2004, China reported importing US$417 million in logs from Malaysia, while the Malaysian trade data reports just US$109 million in exports. At the same time, high discrepancy ratios are found between China log import records and those from Indonesia and Russia, respectively.

Table 10. A comparison of China's import and export statistics from major supplying countries, 2002-2004 (US$ millions)

Exporting country	Product	2002			2003			2004		
		Export	Import	Diff.	Export	Import	Diff.	Export	Import	Diff.
Russia	logs	736	975	239	719	969	250	924	1,305	382
	lumber	49	72	23	54	72	18	76	113	38
Malaysia	logs	96	243	147	111	396	285	109	417	308
	lumber	37	101	64	40	88	48	47	88	41
Indonesia	logs	4	37	32	1	16	15	0	13	13
	lumber	63	282	218	34	215	181	7	207	200

Source: World Trade Atlas 2005

Illegally harvested timber, particularly Southeast Asian tropical species and Russian temperate hardwoods, can be used as substitutes for US temperate hardwoods in many applications, including furniture and interior decoration. These species are believed to have taken market share from US species. According to AFPA (2004b), illegally sourced timber suppressed world prices by 7%-16% and US prices by 2%-4%. This significantly undermines the profitability and global competitiveness of American wood exports. It is estimated that illegal logging has resulted in average annual losses of $275 million per year for US lumber exporters, and $186 million per year for log exporters. With the absence of illegal timber, US exports of lumber and panels could increase by over $2.8 billion, or an average of $275 million per year through 2012 (AFPA 2004b).

4. OVERVIEW OF WOOD PRODUCTS DISTRIBUTION CHANNELS IN CHINA

China's timber distribution system consists of raw material suppliers, manufacturers, traders, distributors, wholesalers, retailers, and end users. As China's dependence on imported wood increases, the role of overseas sources is becoming increasingly important, particularly since China entered the WTO.

Competition, which was already high, has become particularly intense on the two ends of the supply chain: market outlets (e.g. retail) and raw material supplies (e.g. plantations and forestlands). Foreign direct investment in these two areas is increasing and as the Chinese government continues to relax regulations restricting FDI, foreign involvement will play an increasingly important role in these two sectors.

China's distribution system for wood products can be complex and regionally fragmented. Figure 21 illustrates a simplified conceptual framework, with arrows representing one-way flows of goods. Flows of capital, logistics, business and information are two way. China's wood distribution systems are still open-ended - recycling industries have yet to be developed to close the loop. Internet sales are still in their infancy, although several websites have been established to facilitate the distribution of trade leads.

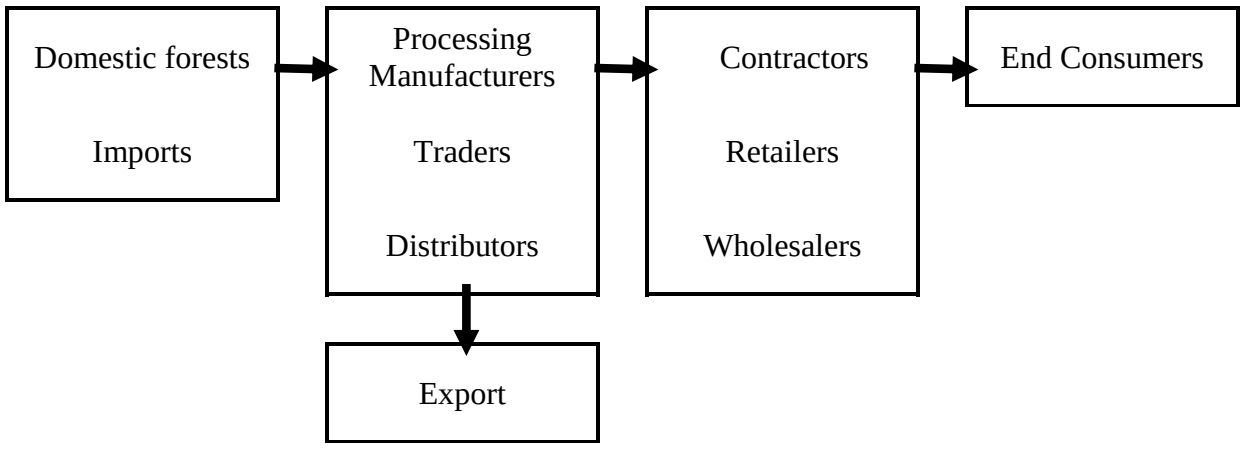

Figure 21. Conceptual framework for wood distribution systems in China

Since the National Forest Protection Program was introduced in 1988, timber availability on state-owned forestlands has steadily declined. Collective and household farms in southern China have become a major source of domestic supply, yet most timber from these plantations is only suitable for pulping and panel production. Almost all of the structural and appearance grade timber is imported and China is dependent on international suppliers for half of its timber supplies.

China's distribution systems are regionally fragmented and most of these regional timber markets are new and not well established. According to Sun *et. al* (2004), there are 995 timber markets in China, 344 of which are wholesale markets and 651 are retail. Over 70% of these markets have been in business for less than 15 years, and less than 10%, or 82 of the markets, are well established.

Distributors and traders consist of a wide range of business forms and vary between industry sectors. However, the distribution system includes three basic channels.

- Large Manufacturers and Distributors: Most large value-added producers and raw material distributors purchase materials directly from the supplier via purchasing offices or traders in the source country or traders to ensure a stable supply. Since export bans on logs from Indonesia were instituted, securing a stable supply is particularly important to the survival of resource-intensive sectors such as flooring and

wood-based panels, where large factories import raw materials and sell excess inventory to smaller factories.

- Wholesale and Retail Markets: Wholesale and retail markets for logs and lumber are regarded as the most profitable segments in the industry value chain. These companies purchase timber either directly from the supplier or through a distributor and sell the goods to consumers, interior design or finishing companies, and small manufacturers. This market is extremely competitive and is attracting foreign investment.

- Contract Market: This market serves the construction industry and is made up of construction firms' purchasing offices who buy materials directly from suppliers or their agents/distributors in China. This market is the primary channel for value-added and imported building materials.

To simplify the distribution channel, we will break the distribution system into two categories: the distribution system for primary wood products, or raw materials (Figure 22) and the distribution system for value-added products (Figure 23). In Chapter 5, we will discuss distribution issues for specific wood-based building materials.

4.1. Distribution System for Primary Wood Products

Softwood Logs

Over 60% of China's softwood logs are imported from Russia. Although several industry representatives have said that prices for Russian logs are rising rapidly and now rival North American prices, Russian logs are still price competitive due to the proximity to markets, and until recently, favorable VAT treatment. Despite any price increases, Russian logs are typically large diameter and high quality, which is highly desirable to plywood manufacturers.

Russian logs exported to China have perhaps the most simple and direct distribution system. Over 90 percent of Russian logs, most of which are used by plywood manufacturers, arrive on railcars at three northern China-Russia border town ports—Suifenhe, Manchuli and Erlian. Once Russian logs and lumber arrive in the ports, distributors/traders post their phone numbers on the rail cars and distributors and manufacturers' purchasing agents call the distributor directly.

Logs and lumber from Africa, Southeast Asia, and approximately 10% of the volume of Russian logs that arrive at China's water ports unsold follow a more complex distribution system. Importers rent warehouses at the ports where logs are stored after being offloaded. "First tier" distributors purchase these goods from the importers and deliver the logs and lumber to their manufacturers and "second tier" distributors. Second tier distributors then sell the logs and lumber through their own regional outlets such as the Furen hardwood timber market in Shanghai – a market with over 300 wholesaler outlets.

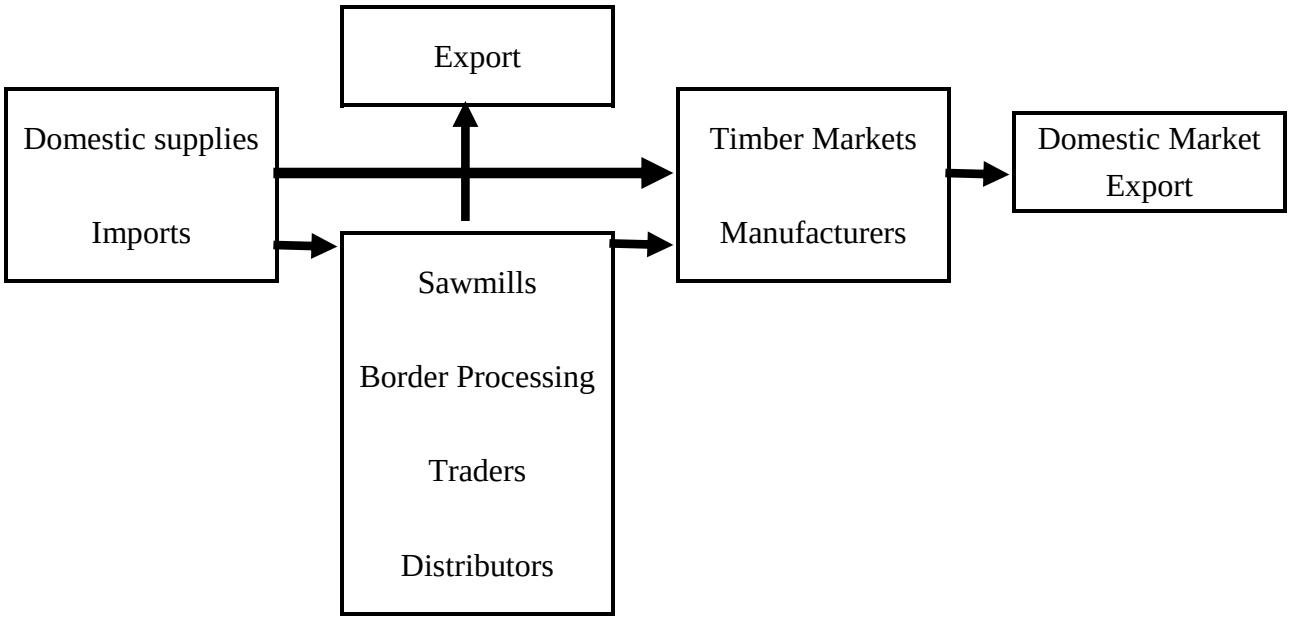

Figure 22. Distribution system for primary wood products

This distribution system among large manufacturers can be quite vertically integrated. Large manufacturers have the resources and the need to ensure a stable supply of raw material which drives them to establish their own sourcing offices in supplier countries or to develop relationships with overseas traders. Some manufacturers even set up primary processing facilities on the border of the country of origin, particularly Russia. Smaller manufacturers purchase their materials at the port, local timber markets, or from distributors and large manufacturers.

Manufacturers that use large volumes of US logs and lumber that have no substitutes, such as cherry and oak, buy direct from US suppliers or the supplier's agents or representatives in China.

4.2. Distribution System for Value-Added Wood Products

Value-added wood products reach end consumers through multiple channels (Figure 23). However, the process varies between "high involvement" and "limited involvement" products depending on the degree of consumer participation in material selection and purchasing. For example, Chinese home buyers are typically highly involved in selecting furniture and flooring products for their homes, but they are not involved in buying raw materials such as treated lumber and other building materials since labor rates are inexpensive and DIY is unheard of.

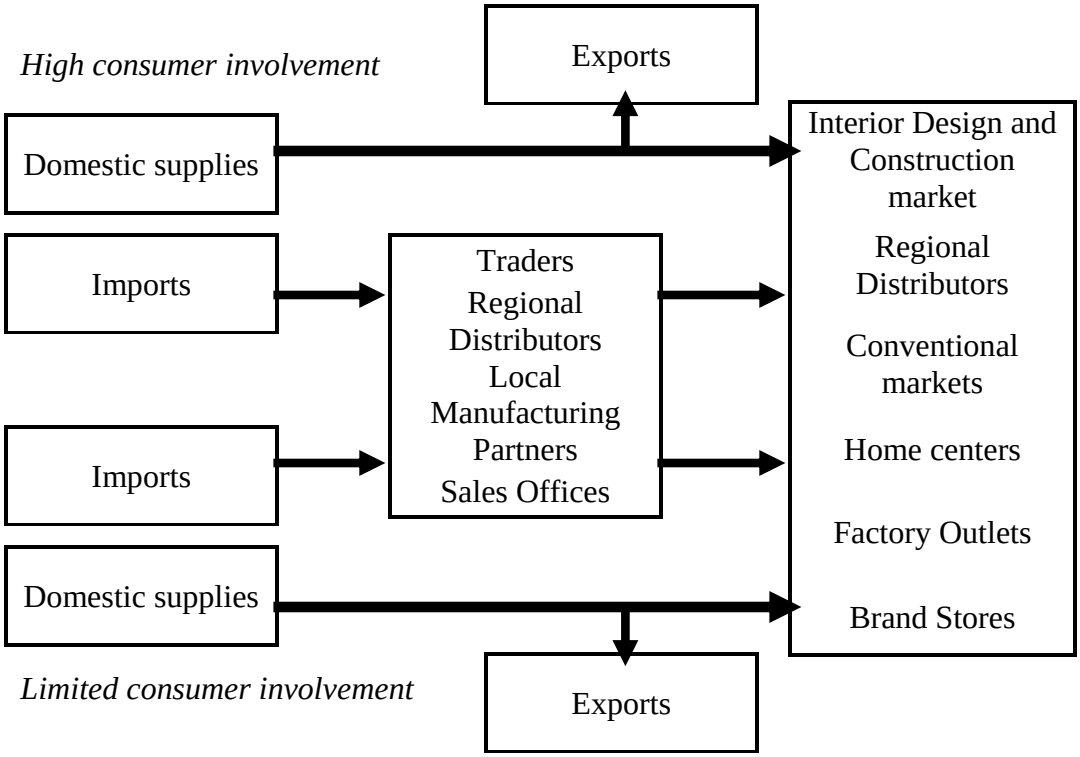

Figure 23. Distribution channels for value-added wood products in China

Value-added wood products are sold through two distribution channels: industrial and retail. Industrial channels involve transactions where products are sold by manufacturers and distributors to builders, developers, contractors, and interior designers. Retail channels are geared toward consumers and smaller interior finishing companies and include western-style home centers and traditional building materials markets, which include hundreds of small retailers and manufacturers' stores set up as booths and stores.

Industrial Channels: Interior Design and Construction Market
Condominiums in China are traditionally sold as unfinished concrete shells. Buyers are responsible for hiring what is known in China as "interior decorators" or general contractors, to install plumbing, electricity, flooring, wall coverings and appliances. Not only is this process time consuming, but homeowners must hire different contractors from a number of different trades and monitor them carefully to make sure that the specified materials are the materials installed and that the workmanship is acceptable. Poor business practices and graft are rampant in the interior decoration industry and it is one of the single largest sources of consumer complaints. Overwhelmed by homeowner complaints, the Chinese government launched an initiative to phase in turnkey housing by 2010 in Shanghai. The initiative was very well received and by 2004, 50% of the homes in Shanghai are being sold finished. According to a recent survey of Shanghai consumers, 43% of consumers favor finished housing, and 37% plan to buy a finished unit (FAS 2004b).

The move to phase out shell housing is expected to have a significant impact on the $2.5 billion interior finishing market. It was initially expected that the phase out of shell housing would stimulate large scale demand from developers who would either do the finish work themselves or hire large decoration companies to do the work, which would drive small decorators out of business and leave the industry dominated by a small number of large decoration companies. Instead, developers contracted finishing contracts on a lowest cost basis to a large number of small decorators, which resulted in a low cost race to the bottom with little regard for quality (FAS 2004b).

The industry appears to be changing again however. Vanke, one of China's largest builders of high rise condominiums and single-family concrete homes, recently announced that it signed a deal to purchase building materials exclusively from local outlets of British-owned home center B&Q. Home Way, a Chinese-owned big box retailer, has avoided partnerships with developers since developers do not pay their invoices for goods and services until the unit is sold. This payment schedule has proven to be risky since many developers have become involved in speculative real estate investing. It is particularly difficult for firms who supply materials to single family concrete home developers since these homes take a year to complete. Instead, Home Way has partnered with large decoration companies who pay invoices upon receipt of materials.

Despite Home Way's preference not to sell to developers, the company's purchasing manager said he expects the finished housing trend will continue and developers will make most of the material selection decisions. This means that most of the building materials used by developers will be purchased directly from manufacturers or their agents or through large distributors. Interior finishing firms hired by the developers will select the supplier and purchase smaller volumes of value-added interior decoration products from local distributors, building materials markets and home centers.

Unlike condominiums, single-family homes are sold on a finished basis, which in some respects makes it an easier segment for North American suppliers to penetrate. Since there are fewer developers than interior design companies, it could be easier to identify developers and compete for their business. Developers also typically purchase directly from manufacturers or suppliers, eliminating the multi-step distribution process.

Similar to the US, Chinese developers have central purchasing offices that issue bids, review contracts, and select suppliers. When developers are planning a new project they follow a number of steps, which are outlined below.

Step 1: Supplier identification - Purchasing agents identify materials that meet the project budget, unit selling price, and target buyer. According to several developers and association representatives, Chinese consumers are very brand conscious. Therefore when purchasing agents select products for single family projects aimed at middle and upper income consumers, they tend to look for brand name products. However, even developers of luxury homes are extremely price conscious and many feel that US products are generally too expensive. Notable exceptions include US wood and non-wood windows and treated wood decking. Glulam bridges have also made some inroads into golf course developments.

Step 2: Supplier qualification - Once a list of preliminary suppliers is developed, the purchasing agent evaluates potential suppliers' manufacturing capacity, brand image, and product price and quality.

Step 3: Follow-up - Once a supplier is selected, the developer works to develop a relationship with the supplier for future cooperation.

While price is of primary importance to developers, developers of luxury condominiums and single family homes have said that non-price attributes are also important. One Shanghai-based developer's representative said his company evaluates its suppliers' commercial value and technical value, assigning a 60-40 weighting in the decision making process. The developer then considers the supplier's "commercial value", which includes payment terms, financial status, and credibility with the supplier's "technical value", which includes product quality, brand recognition, and production capacity.

As with most developers, developers of luxury projects prefer high quality products that have a good brand image to boost the image of their development. However, Chinese developers are extremely price sensitive. This price sensitivity has precluded imported products, particularly those from North America and Europe, from capturing a large share of the Chinese market. Instead, developers tend to buy locally produced building materials that have a foreign brand name, which are usually cheaper but of adequate quality.

Long lead times (which can be as long as 2-3 months for US products) are another barrier for imported materials in China. Since Chinese developers make funds available in stages, sub-contractors cannot order ahead on the project schedule, which is imperative when specifying imported products. This is especially true for government projects. Even companies that have distributors in China find it difficult to supply these projects since most local distributors are small and can't afford to keep large inventories of goods in stock and the US manufacturer typically doesn't want

to bear the additional taxes and overhead costs to stock product in China. One Chinese distributor suggested that US companies develop relationships with US architects with offices in China to improve their chances of having their products specified in the project plans. A list of US architects with offices in Shanghai is included as Appendix A.

Another issue for foreign firms interested in selling to Chinese developers is the payment schedule. Chinese developers do not pay their suppliers until construction is completed – a process that takes a year for single-family concrete homes. Some experienced distributors receive payment from the developer or builder upon delivery of the materials by requesting separate payments for the materials used and the installation or design service provided.

Relative Size of China's Largest Developers

China's real estate market is rapidly becoming privatized. Just ten years ago all of China's top 100 developers (those who earn a minimum of US$42.3 million annually and meet other sales and geographic coverage criteria) were state-owned enterprises (SOEs). By 2004 only 40% of the top 100 firms were state-owned. Ninety-four of the top 100 developers specialize in housing developments (People's Daily 2004). China's top 100 firms are considerably smaller than the top 100 US developers. For example, in 2002 the sales value of US-based Pulte Homes was 13.5 times greater than that of Vanke, one of China's two largest real estate developers.

Retail Channels

In addition to wholesale markets (e.g. timber distribution centers) and business-to-business channels, there are four basic types of retail outlets:

- Supermarkets: These markets are typically large one-stop shopping centers that feature a wide variety of building materials. Commodity products make up 60-70% of total inventory. China has approximately 2,000 supermarkets ranging in size from 15,000-20,000 square meters located in major cities (TDCtrade.com, undated).
- Professional markets: These specialized markets sell a wide range of products of a similar type such as wood panels, kitchen cabinets or bathroom materials.
- Shopping malls or traditional building materials streets: Commonly called "building and decoration market city" or "plazas", these markets are comprised of thousands of rented booths where retailers sell a diverse range of wood and non-wood building materials ranging from millwork to finished flooring, kitchens, bathroom items, lighting, and more. Furniture lines have been increasingly added to these building products markets to attract consumers. Consumers and small interior design firms are the primary customers for these retailers.
- Home centers: Known as DIY stores, home centers sell products primarily to consumers. Centers such as Home Way, OBI, and B&Q were started by foreign companies who strive to differentiate themselves from their competition by providing product warranties and installation. Home centers are discussed in the following section.

<u>Home Centers</u>

Most consumers and small- to medium-sized decoration companies purchase building materials at small retail stores that specialize in specific products such as plumbing fixtures, wood flooring, or wooden doors. These retailers often offer lower prices, but provide little in the way of service, quality certification, or warranties. Even if these retailers do offer warranties, customers have no assurance that the store will be in business in the future since it takes little investment to open these outlets. Shopping for materials this way is very time consuming since customers must go to several different retailers to compare products and negotiate prices. This is particularly time consuming if the consumer needs a wide array of products. Home centers have capitalized on consumers frustrations by offering one-stop shopping and product warranties. Growing demand for goods and services offered by home centers has fueled rapid expansion.

Home centers such as B&Q, Home Way and Home Mart sell a wide variety of building materials. In most cases, home centers purchase finished products directly from manufacturers, and they even have store brands for certain products. When Home Depot introduced the home center business model by way of Chinese-owned Home Way in 1996, home centers were a welcome option for China's growing number of middle-class consumers. China's housing market was booming and consumers were curious about these stores that offered produce warranties and guaranteed installation, and newly introduced home centers such as UK-based B&Q, German-owned OBI, and Chinese-owned Home Mart, Home Way and Orient Homes, expanded at a rapid pace. OBI followed in 1998 and B&Q in 1999. During the same period Home Mart and Orient Home entered the market. These five chains now operate 46 stores in China. Government owned Home Mart, China's largest home center chain operates 15 stores and plans to open 100 more outlets by 2008. Until B&Q acquired OBI in April 2005, OBI was the second-largest western home improvement retailer in China with 13 stores and a further five due to open in 2005. B&Q operates 22 stores and had 2004/05 sales of $372 million and retail profit of $8.8 million, after the costs of a rapid expansion. The OBI acquisition will bring the number of B&Q stores in China to around 50 by mid-2006 (Financial Express 2005). According to *The Economist*, B&Q "estimates that one-tenth of China's 400 million households have "western" levels of disposable income with US$1,000 or more a year to spend on home improvements." The home improvement store representatives estimate that China's home-improvement market is worth almost US$24 billion.

Realizing that China is not a country of do-it yourselfers, installed sales are a major part of home centers' marketing plans. Home centers in China offer services to finish an entire home from the kitchens to the flooring and accessories, all of which are covered by warranties. Some stores in traditional building materials markets have also begun to provide installation services, and warranties, yet as mentioned above, small retailers are less stable than large home centers with huge capital investments in their businesses. The draw of guaranteed workmanship and ease of working with home centers has been a boon for sales. B&Q reports that service and goods packages increased same-store sales in China by 19% in 2004.

An OBI survey found that 55% of its customers are homeowners, 25% are interior decoration companies, and 20% are group buyers including developers and builders. According to Home Way representatives, homeowners, who primarily purchase finished goods, comprise 60-70% of the chain's sales, interior decoration companies comprise 15-20 percent of sales, and offices (who buy decorative items) represent 5% of sales.

Home Way's strategy has been to compete with international home center giants by focusing primarily on "second tier cities" and "irradiating to surrounding areas with cities as the center". In select markets, Home Way offers lower priced goods as opposed to B&Q which targets higher income consumers. The strategy has been successful in helping Home Way dominate China's northern and inland areas, and by the end of 2004 the chain had 70 stores across China (CRC Expo 2005). Despite this impressive growth, big boxes in China are still a niche market. Analysts estimate that home centers have a 20% share of the Shanghai building materials market and approximately 5% of the Guangzhou market. A purchasing manager from OBI also expressed concern for the survival of home centers, citing price competition from traditional building materials retailers.

Over the past couple of years, rising competition and shrinking profit margins have made operations difficult for home centers in China and many have been forced to close. A number of other home centers, particularly Chinese-owned chains, are reportedly facing serious financial problems. Price competition appears to be the home center's most significant obstacle, which is affecting the product lines that the retailers stock. For example, B&Q has replaced almost all of its imported wood and wood building materials with domestically manufactured products. Purchasing agents from OBI and Home Way also said that more than 95% of the products sold at the two chains are produced domestically. While price is an important selling point, delivery time affects the purchasing decision. B&Q sources 99% of its doors domestically. These doors are particularly attractive to consumers and contractors, not only because they are less expensive than imported doors, but they can be custom-made and installed within 3-7 days of being ordered. Hand-made doors featuring delicate carving and decorations are the most popular.

The Product Selection and Purchasing Process

When selecting suppliers, Home Way identifies the product categories that they want to purchase, estimated purchase price, and product characteristics. Since the chain was started by Home Depot, at this point, all of the foreign suppliers that the retailer buys from were introduced by Home Depot. However, the purchasing manager said the chain is not restricted to buying from these suppliers and he is considering other suppliers.

For large volume purchases, the store accepts bids from suppliers. The company's purchasing managers evaluate suppliers on the basis of production capacity, sales region, product cost structure, product price, the suppliers' financial stability, and transportation capabilities. Buyers then estimate the market size for the product. Home Way can act as an agent or distributor of the product and test it on their store shelves. Finally, for imported products, Home Way compares the price they would have to sell the product for to the selling price for the product if it was available at traditional home markets. This is a particularly important factor since Home Way guarantees consumers that it will refund twice the purchase price if an item is sold elsewhere for less. Once a supplier is signed, the chain conducts a bi-annual review of suppliers to ensure that quality, price, and supplier service is acceptable.

According to one of Home Way's buyers, the company would like to carry imported wood, particularly treated wood for outdoor use and walnut, and white oak boards, the latter two which Home Way sells to small manufacturers. Currently, blockboard constitutes approximately 60% of Home Way's wood product sales, yet Home Way's buyer said the demand for treated wood is increasing. Home Way is concerned, however, that China's treated wood distributors are too small to supply the volume the chain needs at competitive prices. The store recently received a quote for imported Southern yellow pine for US$979/$m^3$ (RMB 8,000/m^3) and locally treated southern yellow pine for US$612/$m^3$ (RMB 5,000/m^3).

Traditional Building Materials Markets

As mentioned earlier, traditional building markets are composed of hundreds of retailers and wholesalers, from mom-and-pop stores to factory outlets, to several-story shopping malls of retail booths. Most retailers at these markets specialize in specific products, such as flooring, doors, or kitchen cabinets, with a number of similar stores located in close proximity to each other. There is little differentiation in product, brand, and even store layout. As more retailers have entered the market, intense price competition has led to an overall decline in product quality and store profitability.

Overall, traditional building materials markets are experiencing a number of changes, including:

- Scale: expansion of floor space and number of stores to capitalize on the power of central purchasing;
- Diversification: increased specialization and expansion of product lines;
- Relocation: moving to the outskirts of urban areas to lower overhead costs;
- Technology: adoption of bar codes, Internet, and modern inventory management approaches (e.g. ERP II)
- Product bundling: adding furniture to retailers' product offerings to encourage sales of complementary products.
- Increased foreign investments: China will grant full trading rights to overseas companies by 2005 as part of its WTO commitments.

One important difference between these retailers is the length of the distribution channel, which varies greatly among stores, depending on the type of ownership.

4.3. Distribution of US Structural Lumber and Value-Added Wood Products

The most common method for selling US building materials in China is through local agents or distributors. Most of these distributors have offices in one or more regions where they employ a number of employees to network with architects, developers, and government employees to find out the details of new projects. Some local distributors may also have stores at traditional building materials markets. Chinese distributors of US products typically rely on trade shows and personal networking to sell their products.

Much of the local distributor's focus is on finding the right regional distributors. The primary distributor trains regional distributors about product features and applications, and then makes each regional distributor responsible for their own operating costs and employee payroll. Some of the more successful companies also require that distributors meet certain performance standards on a regular basis. One common measure is a specified number of new contacts, sales, or seminars during a given period of time.

Due to the limited use of wood as a structural material, the sale of structural wood tends to require more interaction and involvement from distributors not only prior to the sale, but throughout the project design and construction.

Some of the more successful distributors spend a great deal of time giving seminars and educating architects about China's wood frame building code and correct construction and installation practices. This helps the distributor develop a reputation as a recognized expert and it helps educate architects about particular products, which encourages the use of the products being promoted. According to one US exporter "A good distributor offers additional services such as design and engineering support, which help sell the products."

Since US building materials cannot compete with domestically manufactured products on a price basis, local distributors also advise US suppliers to network with US and Chinese architects, who can specify products in the materials list. Distributors also suggest US firms market their products to Chinese importers.

One major issue for US companies exporting to China is the Chinese payment system. Many developers request suppliers extend payment terms that allow the developer to pay for supplies upon completion of the project, which can take in excess of a year. However, this is an extremely risky practice. Companies may lose some contracts by insisting on being paid upon delivery of materials, yet they will avoid the very real risk of not being paid. US firms' best assurance that they will be paid is a long-term Letter of Credit (LC) between suppliers and buyers from one of China's major banks and payment upon delivery of materials. Another option employed by Home Way as mentioned above is to write the contract so that the delivery of materials is invoiced separately from any services provided. Payment is then due upon delivery of materials and services provided are billed when the project is completed. This ensures that the supplier will not have to wait until the project is completed, which can take up to a year, to be paid for materials sold.

Long-term price changes can be negotiated, but Chinese developers are reluctant to risk the possibility that prices will increase. They believe that as long-term customers, they should get the best price from suppliers, instead of paying extra for price increases. They also believe that once a contract is signed, everything is fixed, including price and time of delivery. Prices changes afterwards can be passed along to the developer in the next deal negotiated between the two parties.

While developers insist that once a contract is signed, prices and agreements are fixed; this is often not the case in contract negotiations in China. Many US companies have reported that once a contract with a Chinese firm is signed that indicates an agreement by the Chinese firm that an agreement has been made between the two parties that they will do business, but negotiations on price and contract terms will continue.

5. DISTRIBUTION SYSTEMS FOR CHINA'S MAJOR WOOD PRODUCTS SECTORS

5.1. China's Sawmill Industry

Most sawmills are located close to major timber-producing areas in northern China (Hebei, Shandong, Heilongjiang, and Inner Mongolia) and southern China (Jiangsu, Zhejiang, Guangdong and Fujian). These provinces have a large numbers of skilled workers, good transportation infrastructure and easy access to raw materials. Korean pine, Scotch pine, white pine (Dragon spruce and Faber fir) and Dahurian larch from state-owned forests in the north and Chinese fir, Mason's pine and Yunnan pine from collective-owned forests in the south are the primary species used for lumber production.

More than 90% of China's 200,000 sawmills are privately owned. According to the Strategic Study on China's Sustainable Forestry Development (2003), China has approximately 350 large sawmills with annual production capacity greater than 30,000 m^3. Most privately owned mills are small and have limited processing technology. China's average country-wide overrun rate is approximately 60% -- well below that of most developed countries (80%) (FAS 2005). At the same time, many of China's large sawmills (most of which are state-owned) have operated below capacity since harvests were restricted by the NFPP. As shown in Table 11, the utilization rate at some of these large government owned mills barely reaches 30% (Forest Trends 2004 unpublished). Most of these inefficient mills have been forced out of business or have retooled and re-opened as value-added processors. Local mills with joint ventures and private firms equipped with state-of-the-art machinery have replaced state-owned enterprises and now dominate the industry.

Supply restrictions continue to force restructuring in China's forest products industry. As a number of mills have found it increasingly difficult to compete for raw materials, many are moving to regional timber distribution centers or border towns, and reopening as value-added processors. In addition to improved access to raw materials, mills lower their transportation costs and benefit from favorable border trade policies. As more mills and related infrastructure relocate, booming timber markets along the Northeast and Southwest China borders are emerging.

Table 11. Production capacity and volume of major state-owned forest enterprises, 2002 (1,000 m^3)

Enterprise	Production Capacity	Real Production
Inner Mongolia Forestry Industry Group	647	28.5
Jilin Forestry Industry Group	577	95.7
Daxinganling Forestry Group	140	104.3
Longjiang Forestry Group	525	52.6
Yanbian Forestry Business Bureau	--	55.9

Source: Forest Trends 2004

Domestic and Imported Timber Supply

Due to the fragmented nature of China's sawmill industry it is difficult to obtain accurate lumber production volumes from official publications. However, estimates based on total log supply (production + imports) are shown in Table 12 (Forest Trends 2004).

According to FAS (2005), by 2006 China's log imports are forecast to increase 5% to 28.9 million cubic meters and lumber imports are expected to increase 10% to 7.3 million cubic meters. Lumber imports are increasing at a faster rate than logs, and the proportion of lumber imported is expected to continue to rise, as many log exporting countries, such as Russia, develop policies to encourage local primary wood processing industries.

Table 12. China's domestic lumber production, 1998-2002 (1,000 m^3)

Year	Actual Log Production*	Imported Logs ****		Total Log Supply	Total Log Supply for Lumber Production**	Estimated Lumber Production***	Official Lumber Production
		Softwood	Hardwood				
1998	100,000	1,486	3,337	104,823	73,006	43,804	17,880
1999	100,000	4,573	5,562	110,136	76,897	46,138	15,860
2000	100,000	6,401	7,211	113,612	79,366	47,620	6,340
2001	100,000	9,142	7,722	116,864	82,089	49,253	7,640
2002	100,000	15,780	8,553	124,333	88,479	53,087	8,520

** Estimated by CAF **Domestic log: 70% yield; imported softwood log: 90% yield; imported hardwood log: 50% yield. *** 60% yield rate*

Source: Forest Trends 2004 and SFA 2003

Softwood Logs and Lumber

As shown in Tables 13 and 14, China's demand for softwood logs has surged in recent years. In 2004 China imported 14 million m^3 of softwood logs, or 90% of total softwood log imports, from Russia. During the first ten months of 2005 imports of Russian logs increased 17%. During the same period, imports of logs from Canada increased 96%. Revenue from US log exports increased slightly, yet export volume rose by almost one-third over the previous year. Imports from New Zealand appeared to be affected by New Zealand's strengthening currency and rising transportation costs. January-October 2005 exports value and volume declined 24% and 29%, respectively, compared to the same period in 2004.

The majority of China's imported softwood logs and lumber, including Scotch pine, White pine and Dahurian larch, come from Russia. Russian exporters have several advantages including low price, high quality, proximity to China, and substantial tracts of unexploited forests. Until June 2004, Russian exporters also received "double rebate" preferential tax treatment by the Chinese government. The tax relief was phased out as part of the China's WTO membership agreement, yet according to the Tropical Timber Report (2005) traders at some border posts still discount duties and VATs for imports from Russia (New Zealand Forestry 2005).

Investment in Russian lumber mills has apparently paid off as Russian suppliers dominate China's imported lumber market. As shown in Tables 15 and 16, in 2004, 38% of China's softwood lumber imports came from Russia -- a 19% increase in market share from 2000. Between January and October 2005, softwood lumber imports increased 15% over the same period in 2004. During this period, Russia gained the greatest share of the Chinese lumber market with a 45% increase in export volume and 53% increase in export revenue. At the same time, US softwood lumber export volume declined 32% and revenue declined 40% from 2004.

Table 13. Leading softwood log suppliers by value, 2000-2005 (US$ millions)

	2000	2001	2002	2003	2004	Jan-Oct 2005	Change*
Russia	$312	$482	$869	$778	$1,050	$1,049	21%
New Zealand	$25	$44	$98	$125	$79	$53	-24%
Canada	$0	$1	$2	$8	$7	$11	91%
Australia	$1	$1	$5	$14	$11	$10	-7%
United States	$4	$5	$9	$5	$9	$7	5%
Total Imports	**$378**	**$542**	**$997**	**$942**	**$1,166**	**$1,139**	**18%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Table 14. Leading softwood log suppliers by volume 2000- 2005 (1000 m^3)

	2000	2001	2002	2003	2004	2005 Jan-Oct	Change*
Russia	5,485	8,227	13,845	12,584	14,760	14,281	17%
New Zealand	361	709	1,606	1,871	835	523	-29%
Australia	11	14	75	237	129	122	-5%
Canada	2	9	20	80	50	86	96%
Korea North	122	39	51	59	57	59	31%
Myanmar	39	44	56	75	59	56	31%
United States	33	49	60	26	29	28	29%
Total Imports	**6,398**	**9,142**	**15,780**	**14,974**	**15,961**	**15,174**	**15%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Table 15. China's softwood lumber imports by source, 2000-2005 (US$ million)

	2000	2001	2002	2003	2004	Jan-Oct 2005	Change*
Russia	$15	$25	$50	$47	$79	$96	53%
Canada	$7	$9	$17	$38	$55	$43	-6%
New Zealand	$23	$23	$35	$38	$45	$41	10%
Chile	$1	$4	$9	$14	$22	$24	30%
Finland	$5	$5	$9	$13	$15	$13	6%
United States	$8	$6	$9	$17	$20	$11	-40%
Total Imports	**$79**	**$91**	**$166**	**$209**	**$281**	**$264**	**15%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Table 16. China's softwood lumber imports by source, 2000-2005 (1000 m^3)

	2000	2001	2002	2003	2004	Jan-Oct 2005	% change*
Russia	129	237	457	436	649	764	45%
Canada	51	72	127	265	343	232	-18%
New Zealand	111	126	186	195	216	175	-3%
Chile	7	19	49	77	113	118	22%
Finland	22	26	44	56	73	60	3%
Myanmar	26	33	46	53	51	45	-6%
United States	27	25	34	55	64	38	-32%
Total Imports	**468**	**640**	**1,189**	**1,373**	**1,700**	**1,582**	**12%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Table 17. Major hardwood log sources by value 2000-2005 (US$ millions).

	2000	2001	2002	2003	2004	Jan-Oct 2005	Change*
Malaysia	$209	$152	$243	$396	$417	$228	-34%
Russia	$55	$69	$106	$191	$256	$282	32%
Papua New Guinea	$102	$100	$123	$155	$169	$218	63%
Gabon	$225	$209	$185	$206	$166	$181	32%
Congo	$2	$14	$44	$77	$120	$98	1%
Myanmar	$58	$56	$53	$73	$98	$115	37%
Equatorial Guinea	$63	$79	$57	$95	$67	$60	6%
United States	$12	$19	$28	$41	$66	$78	38%
Germany	$183	$114	$70	$56	$59	$68	42%
Solomon Islands	$13	$6	$18	$33	$58	$69	48%
Mozambique	$8	$11	$19	$27	$28	$32	40%
Australia	$0	$2	$4	$9	$18	$10	-21%
Indonesia	$105	$171	$36	$16	$13	$6	-51%
Canada	$2	$2	$3	$3	$5	$3	-32%
New Zealand	$3	$8	$2	$4	$0	$0	-80%
Total imports	**$1,277**	**$1,152**	**$1,141**	**$1,506**	**$1,631**	**$1,525**	**13%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Table 18. Major hardwood log sources by volume 2000-2005 (1,000 m^3).

	2000	2001	2002	2003	2004	Jan-Oct 2005	Change*
Malaysia	1,702	1,505	2,121	2,929	2,721	1,579	-29%
Russia	446	539	961	1,784	2,201	2,346	27%
Papua New Guinea	755	910	1,128	1,378	1,315	1,488	41%
Myanmar	543	514	549	788	996	999	16%
Gabon	1,144	1,125	1,087	940	633	627	20%
Congo	6	57	250	373	488	378	-3%
Solomon Islands	90	54	163	283	450	472	31%
Germany	475	397	390	320	338	384	40%
Equatorial Guinea	359	468	344	511	305	256	-2%
United States	28	62	61	76	118	133	30%
Mozambique	33	45	70	81	81	88	29%
Belgium	38	26	31	16	33	80	298%
Australia	0	22	56	117	160	78	-31%
Indonesia	603	1,138	248	116	92	44	-50%
Total imports	**7,214**	**7,721**	**8,553**	**10,482**	**10,282**	**9,176**	**8%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Hardwood Logs and Lumber

As shown in Tables 17 and 18, Malaysia is China's leading hardwood log supplier. Although the log export volume from Malaysia declined 7% in 2004, revenue increased 3% due to a 20-25% increase in global timber prices in 2003, economic recovery in Japan, and rising demand in China and India (Malaysian Timber Council 2004). From Jan-Oct 2005, despite an increase in China's hardwood log imports, Malaysia's market share declined significantly, and was replaced by Russia, Papua New Guinea, Gabon and Myanmar. Hardwood exports from the US have continued to increase steadily over the period of 2000-2005.

During the first ten months of 2005, Russia surpassed its competitors and became China's leading hardwood log supplier. Russia is expected to continue to hold this position, aided by low road transportation costs, competitive prices, and an ample supply of species such as Mongolian oak, ash, alder, birch, elm and poplar. In addition to low price and close proximity, Russian suppliers have benefited from a log export ban in Indonesia and crackdowns on illegal logging in Southeast Asia, which have driven tropical hardwood prices up 20% in the first half of 2005 (FAS 2005).

China's hardwood lumber imports are increasing more slowly than softwood and hardwood log imports. As shown in Tables 19 and 20, during the first 10 months in 2005, the US was China's leading hardwood lumber supplier in terms of export revenue and third in terms of export volume. Popular US hardwood lumber species are western red alder, yellow poplar and red oak. Most hardwood lumber from the US is remanufactured into value-added products such as flooring and furniture and re-exported to the US, Canada, and Europe. Therefore, Chinese consumption of US hardwoods will follow consumer demand.

Table 19. China's leading hardwood lumber suppliers by value 2000-2005 (US$ millions).

	2000	2001	2002	2003	2004	Jan-Oct 2005	Change*
United States	$80	$101	$166	$181	$211	$212	19%
Indonesia	$286	$316	$269	$210	$207	$159	-8%
Thailand	$51	$60	$112	$135	$176	$148	2%
Brazil	$29	$46	$63	$106	$146	$123	1%
Malaysia	$133	$97	$99	$88	$87	$87	20%
Myanmar	$19	$28	$38	$35	$36	$56	75%
Russia	$6	$18	$22	$24	$35	$31	4%
Canada	$28	$30	$38	$31	$35	$22	-27%
Germany	$79	$52	$40	$28	$18	$19	21%
New Zealand	$7	$8	$7	$13	$12	$1	-91%
Total imports	**$899**	**$896**	**$989**	**$981**	**$1,100**	**$977**	**6%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Table 20. China's leading hardwood lumber suppliers by volume 2000-2005 (1,000 m^3)

	2000	2001	2002	2003	2004	Jan-Oct 2005	Change*
Indonesia	969	1,213	1,316	1,052	959	624	-24%
Thailand	273	332	591	671	835	655	-6%
United States	268	368	593	622	718	665	10%
Malaysia	531	425	474	436	429	395	11%
Brazil	56	81	132	239	294	202	-18%
Myanmar	113	131	183	191	200	257	41%
Russia	29	71	95	125	150	123	-5%
Canada	132	120	154	116	96	57	-33%
Germany	247	160	156	119	71	65	8%
New Zealand	35	44	37	66	64	5	-92%
Total imports	**3,168**	**3,376**	**4,207**	**4,139**	**4,304**	**3,440**	**-6%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Demand

While Chinese manufacturers consume huge volumes of imported logs and lumber, consumer demand for imported finished wood products is limited. Imported wooden furniture and building materials occupy only a small niche market limited to very high-income Chinese.

It is difficult to locate a reliable source for timber consumption in China, given the industry's fragmented nature and the diversity of China's timber suppliers. Table 21 illustrates the discrepancies between official statistics and industry calcluations. Estimates were calculated by adding domestic lumber production and imports, and subtracting exports, which revealed huge disparities between the two sources. One possible explanation for the discrepancies is that many Chinese value-added wood manufacturers, such as large furniture plants in South China, buy logs directly from foreign suppliers and produce lumber in their own mills. Therefore, millions of board feet of lumber are not included in the official production data (Forest Trends 2004).

Table 21. Estimated and official statistics on lumber consumption* in China, 1998-2002 (1,000m^3).

	Estimated Lumber Production**	Lumber Imports **	Lumber Exports **	Estimated Lumber Consumption*	Official Lumber Consumption
1998	43,804	1,690	258	45,236	19,300
1999	46,138	2,756	355	48,540	18,200
2000	47,620	3,614	414	50,819	9,500
2001	49,253	4,034	450	52,838	11,200
2002	53,087	5,396	431	58,052	13,100

**Estimated by CAF*

*** Rate of yield is 60%.*

Source: Forest Trends 2004

Distribution channels for imported lumber

Ports of entry

China's major ports include Harbin, Manchuli, Suifenhe, Erlianhot, Zhangjiagang, Shanghai, Shenzhen, Huangpu and Guangzhou. According to Chinese customs statistics, about 90% of Russian logs and 70% of Russian lumber enter China via overland border ports, including Manchuli, Suifenhe and Harbin. Russian lumber that does not arrive through overland ports is transported on ship to the Yangtze River Delta and Pearl River Delta regions in Southern China (FAS 2005). Zhangjiagang port in Jiangsu Province in eastern China has become a regional

distribution center for logs from Russia and Southeast Asian countries. Shanghai, Shenzhen and Huangpu are major ports of entry for tropical and temperate lumber. Shanghai is also an important port for logs from North America and Europe. Finally, ports in Guangdong Province and Hong Kong primarily receive lumber.

While China is a net importer, Chinese processors do export a small volume of lumber. The Chinese government encourages local mills to produce lumber from Russian logs for export to Japan and South Korea, and now hundreds of sawmills operate along the Sino-Russian border. Suifenhe has become the leading port for Russian logs exports to China, and Chinese lumber exports. Other major ports include Manzhouli and Erlianhot in Inner Mongolia (Forest Trends 2005).

Domestic Timber Markets

According to AF&PA (2004), there are more than 2,500 large wholesale timber markets in China that sell a wide variety of primary and secondary processed wood products. About 90% of these markets are traditional "booth-rental" style, which are made up of hundreds of small vendors. These vendors have basic, if any, marketing plans, limited sales reach, and offer few services. The China Timber Distribution Association (CTDA) estimates that approximately two-thirds of China's primary processed wood building materials, valued at US$25 billion (200 billion RMB) are sold through large wholesale timber markets each year. Large timber markets are located near manufacturing areas in the larger, economically developed cities, such as Shanghai, Guangzhou and Beijing. While these markets offer very basic services, they are very price competitive. The products, suppliers, and names of some of China's largest timber markets are detailed in Table 22.

Table 22. Major timber distribution markets in China 2004

Name of Market	Province	Products Sold	Source of Wood
West North Material Market	Gan'su	Logs/Lumber	Russia
Dongguan Houjie Xingye Timber/Plywood Market	Guangdong	Lumber & Wood panels	Domestic and imported (all)
Guangzhou Yuzhu Int. Timber Exchange Market	Guangdong	Logs/Lumber/Flooring/Panels	Domestic and imported (all)
Hebei Zhengding Hengshan Market	Hebei	Panels/Decoration board	Domestic/ SE Asia
Shijiazhuang Timber Center Market	Hebei	Logs/Lumber/etc.	Russia
Fuzhou Forestry Products Exchange Market	Fujian	Lumber & Decoration Material	NZ/Australia
Jiangsu Xuzhou Timber Market	Jiangsu	Logs/Lumber/Plywood	Russia
Nanjing Timber Exchange Market	Jiangsu	Logs	Domestic
Dezhou Shandong Timber Market	Shandong	Logs/Lumber	Russia
Dezhou Timber Market	Shandong	Logs/Lumber	Russia
Shanghai East China Int. Timber Trade Market	Shanghai	Logs/Lumber/etc.	Import (all)
Shanghai Furen Timber Market	Shanghai	Logs/Lumber/Flooring/panels	N & S America, SE Asia, Africa
Tianjin Huanbohai Timber Market	Tianjin	Lumber/Flooring/Decoration Material	Europe, Africa, SE Asia
Zhejiang Huadong Timber Market	Zhejiang	Logs/Lumber/Moulding	Europe, Africa, SE Asia, Brazil
Zhejiang Nanxun Timber Market	Zhejiang	Flooring/other wood products	Domestic, SE Asia, S America
Hangzhou Timber Exchange Market	Zhejiang	Logs/Lumber/Wood panels	Domestic, Russia, N America, SE Asia

Note: In above table "flooring" means the dimension lumber or blanks used for flooring production.

Source: AF&PA 2004

5.2. Wooden Doors and Windows

Industry Summary

Demand for windows and doors is following China's rising consumer demand for new housing. Demand for interior doors is estimated to be 10% of annual new residential construction area, which is 150 to 200 million square meters.

According to an industry analyst, China's door industry has gone through three stages (Wang 2005). From the early 1900s though 1980, stile and rail doors built at the construction site or in workshops dominated the wooden door market. Automated production was not introduced until the end of the period. From the 1980s through the 1990s, as China improved its manufacturing abilities and access to imported materials, steel and aluminum doors and windows were introduced. Government policies restricting the use of wood and encouraging substitute materials in door and window manufacturing helped steel and aluminum windows gain market share. Although wooden windows and doors were increasingly replaced by metal products, they still accounted for approximately half of window and door sales in China. In early 2000 new materials and products with innovative functions were introduced. Vinyl doors and window are increasing their market share by approximately 20% annually. Today, wood doors and windows account for only 5% of the total market (Wang 2005).

Aluminum windows and doors are now used in approximately half of Chinese homes. Analysts anticipate that annual production in 2005 will be 150 million square meters. However, government policies that encourage the use of energy efficient building materials are helping sales of PVC and steel composite doors and windows. Industry analysts expect that by the end of 2005, PVC and steel composites will represent 20% of China's window and door market. Specialty doors made of glass and steel, steel and wood are also used, but these doors are restricted to high-income niche markets. Forecasts project that by 2005, demand for wood doors and windows will grow by 10%, PVC by 12% and steel by 6.5% (AMID 2004).

Doors

According to the China Forestry Distribution Association (2005), of 100 million door sets sold in China per year, hollow core doors are used in almost two-thirds of the market, PVC and steel doors have a 30% market share and solid wood doors have approximately 5% of the market. The majority of domestically produced doors are sold to lower- and middle-income consumers and sales of hollow core doors, which use fast growing plantation-grown species and plywood, are expected to continue to gain market share.

China's wooden door manufacturers are located primarily in Guangdong, Heilongjiang, Liaoning, Jilin, Shanghai, Yunnan, and Zhejiang provinces. The species used vary by manufacturing region and end-market. Imported wood is much more commonly used for higher quality applications and North American hardwoods, particularly red oak, are among the most popular appearance grade species. Tropical species such as *meranti* from Southeast Asia and *sapeli* from Africa are also used, but primarily by manufacturers in Zhejiang Province in eastern China. Red pine and larch from Russia predominate in northern China (AF&PA 2004).

While most Chinese wooden door manufacturers are focused on selling domestically, the government does encourage companies to export with a 16% tax rebate on exports. Coupled with low labor and overhead rates, Chinese manufacturers are successfully entering the international market. According to Mr. Yonglin Wang, president of China Wood Door Committee, approximately 8% of wooden doors produced in China are exported. As shown in Table 23, from 1995 to 2005 wooden door exports increased from US$48 million to an estimated $330 million. The US and Japan were the two leading export destinations in 2005, accounting for 36% and 26% of total exports, respectively.

Although imports of wooden doors are only about 1% of the value of China's exports, imports increased steadily between 2001 and 2004, reflecting China's growing demand for high-end building materials (Table 24). In 2004, the US supplied over half of China's imported wooden doors, making it the country's leading imported door supplier. However, during the first ten months of 2005, the value of China's door imports declined by 23%. This can be partially attributed to a 53% drop in unit price of US door exports from $17,784/ton to $8,301/ton (Global Trade Atlas 2005).

While wooden door imports are rising, PVC and metal doors dominate the market and the trend is expected to continue. The China Wood Door Committee projects that Chinese consumers will purchase approximately 100 million door sets in the near future (almost equal to domestic production). PVC doors are expected to be used in two-thirds of the market and steel doors will fill the remaining demand.

Table 23. China's leading destinations for wooden door exports 1999- 2005 (US$ millions).

	1999	2000	2001	2002	2003	2004	Jan-Oct 2005	Change*
United States	$10.3	$5.7	$7.9	$14.0	$26.2	$77.0	$103.1	79%
Japan	$3.4	$5.3	$6.9	$14.7	$45.2	$70.7	$72.1	28%
Hong Kong	$68.7	$71.2	$51.5	$49.2	$46.4	$49.6	$32.5	-20%
Korea South	$1.9	$4.7	$10.0	$18.9	$16.3	$14.0	$12.9	5%
Canada	$0.1	$0.1	$0.2	$0.9	$6.3	$12.4	$11.4	28%
United Kingdom	$2.6	$3.2	$3.7	$4.5	$6.2	$9.4	$7.2	-11%
Netherlands	$3.9	$4.1	$4.1	$4.8	$5.3	$5.5	$4.9	7%
France	$1.0	$1.0	$1.2	$1.9	$3.5	$4.0	$7.0	114%
Ireland	$0.1	$0.0	$0.2	$0.7	$1.0	$3.6	$5.2	95%
Total exports	**$97.6**	**$100.9**	**$90.4**	**$116.4**	**$167.5**	**$265.4**	**$282.7**	**35%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: World Trade Atlas 2005

Table 24. China's leading wooden door suppliers 1999- 2005 (US$ millions).

	1999	2000	2001	2002	2003	2004	Jan-Oct 2005	Change*
US	$0.14	$0.08	$0.14	$0.53	$0.32	$1.69	$0.87	-41%
Germany	$0.01	$0.02	$0.03	$0.14	$0.36	$0.47	$0.15	-67%
Italy	$0.03	$0.05	$0.14	$0.27	$0.51	$0.22	$0.53	186%
Canada	$0.35	$0.10	$0.30	$0.42	$0.61	$0.21	$0.10	-41%
Japan	$0.34	$0.31	$0.18	$0.20	$0.15	$0.11	$0.03	-74%
Taiwan	$0.11	$0.05	$0.01	$0.01	$0.01	$0.10	$0.02	-82%
Total imports	**$2.13**	**$1.52**	**$1.41**	**$1.93**	**$2.33**	**$3.20**	**$2.14**	**-23%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: World Trade Atlas

Distribution channels

There are four basic distribution channels for doors in China, which vary by the size and processing ability of the manufacturer and region. Large manufacturers with their own sawmills or manufacturers who have agreements with local sawmills may purchase logs and produce their own lumber. If the manufacturer does not have their own saw mill or have an agreement with a local mill, they purchase lumber and veneer directly from a local wholesaler or a producer in the country of origin. Smaller firms tend to use an intermediary.

Finished doors are sold to two types of markets: contract markets and retail markets. Doors sold in the contract market are purchased in large volumes and generally used in large construction projects. Most doors used in large residential projects are purchased by the developer or builder directly from the manufacturer, which could signal an opportunity for overseas door manufacturers.

As mentioned in previous sections, most consumers and small contracting firms purchase doors from building materials markets. The product selection is wide, prices are typically lower than at western-style home centers and prices can be negotiated, although quality and warranties are less assured.

Windows

Steel, vinyl, aluminum and wood composites are the leading window materials in China. Government energy efficiency policies have encouraged builders and consumers to use vinyl windows and as a result, vinyl windows have gained significant market share over the past few years. Over 80% of new residential buildings in Dalian and Qingdao in northern China reportedly use vinyl windows.

The use of wood windows in China has increased substantially over the past ten years, yet due to price, they are limited to luxury homes. As shown in Table 25, in 2004 wood window imports in China totaled $2.7 million, a 270% increase from 1999. The US is the leading supplier with a 75% share of the imported wood window market.

Table 25. China's leading wood window suppliers 1999- 2005 (US$ thousands).

	1999	2000	2001	2002	2003	2004	Jan-Oct 2005	Change *
United States	$221	$257	$158	$1,109	$662	$1,984	$1,167	-32%
Denmark	$306	$20	$3	$120	$9	$228	$107	-51%
Poland	$0	$0	$0	$0	$0	$179	$300	122%
Hungary	$196	$763	$1,766	$1,025	$1,182	$104	$163	109%
Germany	$0	$3	$2	$14	$118	$79	$185	165%
Total imports	**$994**	**$1,094**	**$1,956**	**$2,308**	**$2,156**	**$2,661**	**$1,993**	**-13%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: World Trade Atlas

While US producers dominate the imported wood window market, they do face competition for domestic window manufacturers. Several wooden door manufacturers also produce windows and components. For example, Dalian Shenyou owns Shengpeng Window Co., which produces wood windows for the local market. Other factories produce window components for export such as Yunnan Tengchong Gulin Wood Co., a leading Chinese door manufacturer (AF&PA 2004).

At this time, China's interest in wooden windows is primarily as an exporter. Although exports of wood windows and frames are only about 20-25% of the value of door exports, exports have been increasing rapidly. The US is by far the leading destination for wood windows from China. As shown in Table 26, in 2004, 45% of China's window exports were shipped to the US, followed by the United Kingdom (18.5%) and Australia (6.7%). From Jan-Oct 2005, Chinese exports increased 47% to $61 million, with the majority of China's windows exported to the US.

Table 26. China's leading destinations for wood window exports 1999- 2005 (US$ millions).

	1999	2000	2001	2002	2003	2004	Jan-Oct 2005	Change*
United States	$6.5	$5.2	$8.0	$9.2	$16.5	$23.2	$29.4	57%
United Kingdom	$1.6	$1.8	$3.7	$7.2	$6.3	$9.5	$6.9	-8%
Australia	$0.2	$0.1	$0.7	$0.8	$2.4	$3.4	$4.9	79%
Japan	$1.1	$0.9	$0.7	$1.3	$2.3	$2.4	$1.4	-26%
Denmark	$0.0	$0.0	$0.6	$1.1	$2.4	$2.0	$1.5	-11%
Germany	$0.6	$2.2	$0.6	$0.1	$0.6	$1.7	$2.8	99%
Sweden	$0.7	$2.9	$2.5	$1.5	$2.2	$1.7	$3.3	155%
Total exports	**$15.0**	**$21.0**	**$23.2**	**$27.5**	**$39.1**	**$51.3**	**$61.0**	**47%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: World Trade Atlas

5.3. Flooring and Moulding

Flooring

According to the China Forest Products Industry Association's Flooring Committee, there are approximately 4,000 solid wood flooring manufacturers in China that produce approximately 70 million square meters of solid wood flooring annually. Annual sales total US$3.6 billion (RMB 28.8 billion). Sales have increased 20-30% per year recently, and analysts expect this rate to continue "for the medium term". As shown in Figure 24, laminated flooring, solid wood flooring, engineered wood flooring (multi-layer wood composite flooring), and bamboo flooring are major product sectors. Approximately 90% of the raw materials used are imported, and exports of finished flooring are increasing (AFPA 2004a).

Manufacturing clusters are located in Zhejiang, Jiangsu and Shandong provinces in East China. Nanxun, a town of 200,000 in Zhejiang province, is a manufacturing center for solid wood flooring and home to approximately 280 wooden flooring manufactures. Analysts estimate that area manufacturers produce 2.5 million square meters of merbau flooring annually and use almost 70% of China's merbau log imports. According to Telepak/EIA (2005), area manufacturers purchase logs from agents in Zhangjiagang who act on behalf of a small coterie of large importers. The logs are then transported by barge to a suburb of Nanxun from the Zhangjiagang port. (Telepak/EIA 2005).

Most of China's large flooring manufacturers are vertically integrated. They typically own the channels that they use to purchase raw materials as well as to sell finished goods. Approximately 200 of these mills purchase flooring planks/lumber, produce flooring at other factories under their own brands, and then sell the products through their own channels. A smaller number of mills produce softwood flooring but so far this is not a major industry in China. These smaller softwood factories are scattered throughout northeast China and Shanxi Province since the mills generally use logs and lumber from Russia (AF&PA 2004).

As the supply of tropical logs has become less certain, many of China's largest flooring manufacturers are moving away from tropical suppliers and toward Russian, South American and Southeast Asian suppliers. For example, Shanghai Anxin Flooring Co., once known as China's largest user of South American wood, recently purchased 1,000 square kilometers of forest land in the Russian Far East to secure long-term raw supply in light of declining supplies of tropical hardwoods. The company already owns two sawmills in Brazil, and has established a joint venture on the boarder of Russia, producing white oak floors.

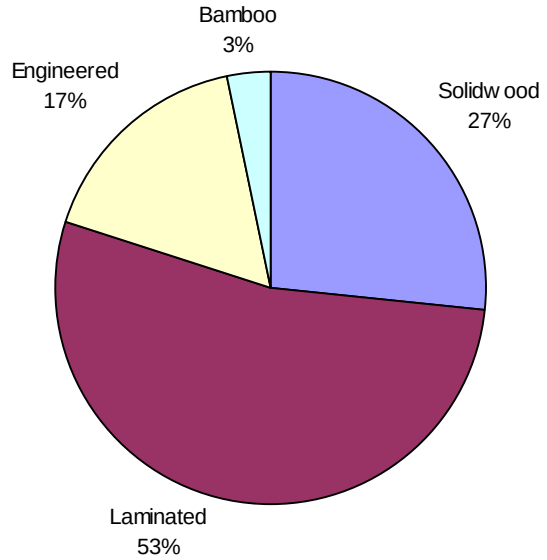

Figure 24. Key sectors and estimated share of China's flooring production by volume in 2004.
Source: Mr. Zhihua Gao, president of China Flooring Committee 2005

In addition to having a large solid wood flooring industry, more Chinese manufacturers of engineered flooring are also entering the market. Approximately 100 Chinese manufacturers produce approximately 43 million square

meters of engineering flooring each year, which includes 3-layer wood, multi-layer wood and non-wood composite flooring. Most of these producers are concentrated in northeastern China, Beijing, Tianjin, Shandong, Guangdong, Yun'nan, Zhejiang and Jiangsu. According to a representative from the China Flooring Committee, most composite flooring plants are highly automated and use advanced production equipment from Germany, Finland, Italy and Japan. The majority of the output from these plants is exported, although domestic demand has increased rapidly over the past few years. According to industry experts, much of the three-layer engineered flooring is exported to Europe and the US and most of the multi-layer flooring is sold to Japan, South Korea and Northeast Asia. Engineered wood flooring is expected to replace laminated and solid wood flooring in China due to increasing consumer awareness about environmental issues and rising living standards.

Recently, some Chinese laminate flooring manufacturers have faced charges by Unilin, a Holland-based flooring company and three US manufacturers for illegally exporting patented products to the US (China.org.cn 2004). This issue is expected to increase awareness about intellectual property rights among Chinese manufacturers.

Approximately 20% of the composite flooring produced in China in 2004 was exported (AF&PA 2004). Exports increased from US$100 million in 2001 to nearly $250 million in 2003, and in the first six months of 2004 exports increased 80% over the same period in 2003. As shown in Table 27, major markets for parquet flooring from China include the US (32%), Canada (17%), and Japan (14%).

Table 27. China's leading destinations for parquet flooring by value 1999-2005 (US$ millions).

	1999	2000	2001	2002	2003	2004
United States	$8.1	$13.3	$15.5	$35.7	$69.7	$94.9
Canada	$1.2	$1.2	$0.8	$3.0	$15.4	$44.9
Japan	$38.7	$47.3	$34.2	$34.7	$38.7	$31.1
Hong Kong	$6.6	$11.3	$8.5	$10.4	$10.0	$9.6
Spain	$7.4	$6.4	$6.4	$10.4	$18.3	$6.6
Italy	$0.2	$0.5	$0.6	$1.0	$1.9	$3.5
Kazakhstan	$0.0	$0.0	$0.0	$0.1	$0.1	$0.5
Total exports	**$88.0**	**$119.6**	**$107.2**	**$153.1**	**$247.5**	**$269.9**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Table 28. China's leading destinations for parquet flooring by volume 1999- 2005 (1,000 tons).

	1999	2000	2001	2002	2003	2004
United States	5.4	8.1	9.0	19.7	44.5	64.5
Canada	1.0	0.8	0.5	2.2	18.4	49.5
Japan	22.0	26.6	22.6	22.9	26.4	20.1
Hong Kong	6.3	9.5	9.0	11.3	15.3	15.1
Spain	5.8	5.4	4.8	5.5	8.4	3.1
Italy	0.2	0.3	0.3	0.6	0.9	1.6
Kazakhstan	0.0	0.0	0.0	0.1	0.1	0.9
Total exports	**58.4**	**77.0**	**72.4**	**96.9**	**170.9**	**214.1**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Moulding

Most of China's moulding is produced in Fengxian (Feng County) in Jiangsu Province and Dongyang in Zhejiang Province. Almost all of this production is used domestically. There are approximately 6,400 moulding mills in Fengxian that employ 130,000 workers (or 1/8 of the town's total population), and produce over 60% of China's total production volume. Annual sales from these producers are $120 million (RMB 1 billion).

Chinese moulding manufacturers primarily use European beech (mainly from Germany, Italy, Russia, France, Ukraine) , okoume and sapeli from Africa, black and red walnut from South and North America, cherry from the US, and a variety of other species from Southeast Asia. The Fengxian Timber Market reportedly is the largest imported beech market in China, consuming more than 40% of China's total beech imports. However, Chinese moulding manufacturers are also using "technology wood", or reconstituted decorative veneer. Some mills also purchased 10-year harvest rights on 10,000 acres in Germany (Jiangsu News 2005).

Dongyang Moulding Production Center (Zhejiang Province) supplies most of the moulding used in East China. Dongning Jixin, in Dongning City is possibly China's largest producer of moulding for export. Some mills, such as Dongning Jixin import poplar from Russia through their own purchasing office. Most large door manufacturers also produce moulding for export, although not in large volumes.

While the export data does not separate flooring from moulding, we believe that the majority of HS 4409 is flooring. As shown in Tables 29 and 30, from 1999 to 2004, export revenue from hardwood and softwood flooring and moulding increased more than five times and export volume increased three fold. Exports increased substantially during the first 10 months of 2005. As shown in Figures 25 and 26, hardwood flooring and moulding imports increased 70% in 2004, but imports of softwood moulding and flooring declined 53%. In 2004, leading export markets for HS 4409 (mostly hardwood flooring) from China included the US (29% of total exports, by value), Japan (28%), and the UK (12%).

Demand for hardwood flooring and moulding in China was also greater than demand for softwood flooring and moulding. However, as shown in Figure 27, in 2004 China's hardwoods flooring and moulding imports dropped to their lowest level in the past 10 years but rebounded slightly in 2005. Softwoods declined after 2003, and remain low, and continued to decline. As shown in Tables 31and 32, the US was China's leading supplier of softwood flooring and moulding, and the third leading supplier of hardwood flooring and moulding.

Table 29. China's leading destinations for wood flooring and moulding exports by value (US$ millions)

	1999	2000	2001	2002	2003	2004	Jan-Oct 2005	% change*
United States	$5.8	$14.3	$21.6	$30.5	$47.9	$80.4	$140.9	158%
Japan	$41.3	$45.9	$38.0	$49.3	$71.5	$78.9	$81.5	32%
United Kingdom	$1.4	$2.6	$3.4	$7.3	$15.5	$34.8	$49.5	90%
Canada	$1.8	$1.5	$1.6	$3.1	$10.0	$22.9	$74.9	355%
Ireland	$1.9	$3.5	$2.8	$3.7	$6.1	$17.4	$20.3	47%
Hong Kong	$7.5	$7.9	$7.8	$9.4	$6.8	$10.1	$17.5	154%
Total exports	**$82.4**	**$100.0**	**$94.4**	**$122.9**	**$187.9**	**$277.9**	**$450.0**	**122%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

Table 30. China's leading destinations for wood flooring and moulding exports by volume (1,000 tons)

	1999	2000	2001	2002	2003	2004	Jan-Oct 2005	%change*
Japan	30	34	28	36	52	59	60	29%
United States	4	10	15	22	33	58	99	149%
United Kingdom	1	2	2	5	11	24	34	89%
Canada	1	1	1	2	8	17	53	347%
Hong Kong	8	9	10	11	9	17	30	160%
Ireland	1	3	2	3	4	12	15	52%
Total exports	**69**	**80**	**78**	**100**	**146**	**221**	**345**	**115%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*

Source: Global Trade Atlas

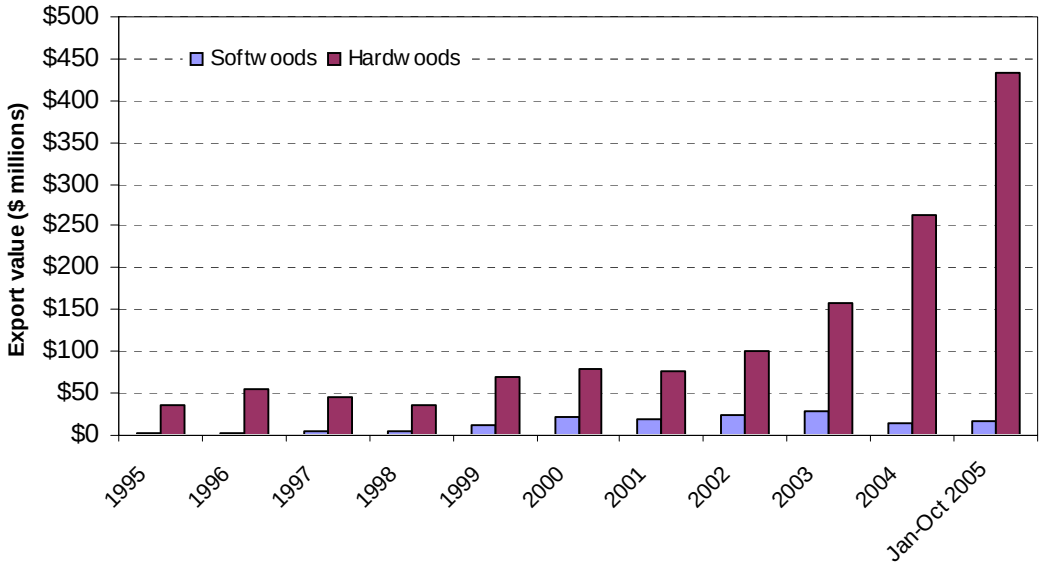

Figure 25. China's exports of flooring and moulding by value (US$ million) 1995-2005
Source: Global Trade Atlas

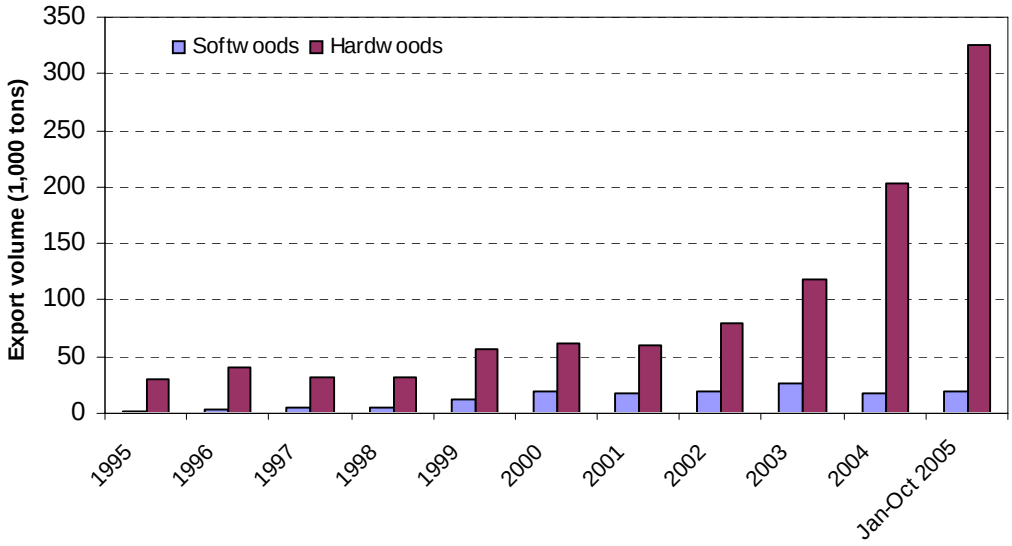

Figure 26. China's exports of flooring and moulding by volume (1,000 tons) 1995-2005
Source: Global Trade Atlas

Figure 27. China's imports of flooring and moulding by volume (1,000 tons) 1995-2005
Source: Global Trade Atlas 2005

Table 31. China's leading suppliers of hardwood flooring and moulding by volume (tons), 1999-2005

	1999	2000	2001	2002	2003	2004	Jan-Oct 2005	% change*
Malaysia	6,320	2,890	2,312	5,224	1,861	1,777	255	-85%
Indonesia	12,279	3,739	6,788	4,493	2,676	1,130	559	-43%
United States	480	576	28	1,555	2,086	1,075	7,678	929%
Canada	162	60	497	227	529	799	583	-26%
Taiwan	1,194	623	523	484	701	417	387	13%
Denmark	0	2	1	2	204	290	164	-22%
Myanmar	0	32	208	1,039	571	212	263	59%
Total imports	**23,778**	**10,807**	**12,254**	**18,589**	**14,038**	**7,533**	**10,261**	**53%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*
Source: World Trade Atlas 2005

Table 32. China's leading suppliers of softwood flooring and moulding by volume (tons), 1999-2005

	1999	2000	2001	2002	2003	2004	Jan-Oct 2005	% change*
United States	110	24	7	1,358	5,216	2,776	88	-96%
Canada	0	290	96	1,704	1,147	927	58	-94%
Finland	159	42	122	873	1,142	514	144	-70%
Germany	5	2	82	62	197	101	124	31%
Sweden	74	137	266	319	0	0	585	--
Total imports	**1,001**	**739**	**746**	**4,827**	**8,535**	**4,412**	**1,164**	**-68%**

**% change of Jan-Oct 2005 over Jan-Oct 2004*
Source: Global Trade Atlas 2005

Case Study: Shanghai Anxin Flooring Co. (http://www.anxin-flooring.com/)

Background

Shanghai Anxin Flooring was founded in 1994 in Wenzhou, Zhejiang Province, as a timber trader specializing in Brazilian timber species. The company is now China's largest hardwood flooring manufacturer and leading importer of Brazilian wood. Anxin Flooring imports 80% of its raw materials from South America and consumes 50% of China's imports from Brazil. In 2004, the company's three plants in Shanghai, Brazil and Russia produced 2.5 million square meters of finished flooring and 1.5 million square meters of planks (semi-finished products). The company also has extensive supplier networks and strong financial backing, which have enabled it to establish a strong domestic distribution system to supply floor planks and raw materials to approximately 150 smaller flooring manufacturers in Nanxun, Zhejiang Province.

Production

Anxin Flooring's three manufacturing plants produce a wide range of products, including solid wood flooring, engineered flooring, decking, and laminated flooring from hundreds of South American, Southeast Asian, and African species. The company also produces cork flooring from Australian logs and lumber. Its annual production has reached 4.0 million square meters, which amounts to $120 million of annual sales. In 2004, the company purchased 1,000 square kilometers of old-growth forests and two sawmills in Brazil, which added 4,000 cubic meters to the company's monthly production volume. The company, fearing declining tropical timber availability and rising competition for raw materials, established a joint venture in Suifenhe, China where it produces 1,000 cubic meters of flooring from Russian white oak, ash, birch, basswood, and some softwood species.

Demand for cork and engineered wood flooring is expected to increase substantially as tropical hardwoods become scarce. Cork flooring is a new product to China, and the company management is "very optimistic" about the market potential.

Market channels

Most of Anxin Flooring sales are made through three channels: retail/wholesale, contract market (interior decoration) and export. Each of these markets has different brands and prices, depending on market.

The manufacturer has 21 regional sales offices in major Chinese cities and over 400 Anxin Flooring retail stores and wholesaling outlets across the country. The company has three levels of contract distributors: four regional distributors in charge of North China, South China, Northwest (& Southwest) and East China; provincial distributors responsible for supplying most first-tier cities (normally province capital); and distributors in second-tier cities and neighborhoods. Anxin also supplies nation-wide retail chains, such as B&Q and the Home Way with products with different brands and prices. The company also sells products directly to interior design firms and builders. In the export market, Anxin is primarily a subcontractor who produces flooring for international buyers under foreign brands.

Forest certification

Anxin is seeking to obtain FSC certification within the next two years. In October 2005, Anxin was one of the first eight companies from mainland China and Hong Kong to be admitted to the China Forest and Trade Network (CFTN). CFTN was established in March 2005 as the China chapter of the Global Forest and Trade Network to eliminate illegal logging and to improve forest management. According to Mr. Lu Weiguang, Anxin's president, "Anxin's goal is to become the leading flooring company in the world, and to achieve that we must take responsibility for the environment. The CFTN will help my company find sustainable sources of legal timber so that both my business and the forests will thrive for generations to come" (AFPA 2005).

5.4. Furniture

Industry summary

China's furniture manufacturers have become dominant players in the world furniture market, buoyed by cheap and plentiful labor and low overhead costs. Chinese manufacturers also dominate the domestic furniture market. In 2004, Chinese manufacturers produced approximate $32 billion worth of goods, roughly one-third of which was exported ($10.3 billion) (CNFA 2005). By the end of 2005, total production value is expected to reach $42 billion and exports are forecast to be $14 billion (Chen 2005). From 1995-2004, total output increased almost five-fold and exports increased nine-fold. Average annual growth increased 25% (CNFA 2002-2005) (Figure 28). The furniture industry's growth rate outpaced that of the Chinese Gross Domestic Production (9%) and average industrial growth (11%) (World Bank 2005).

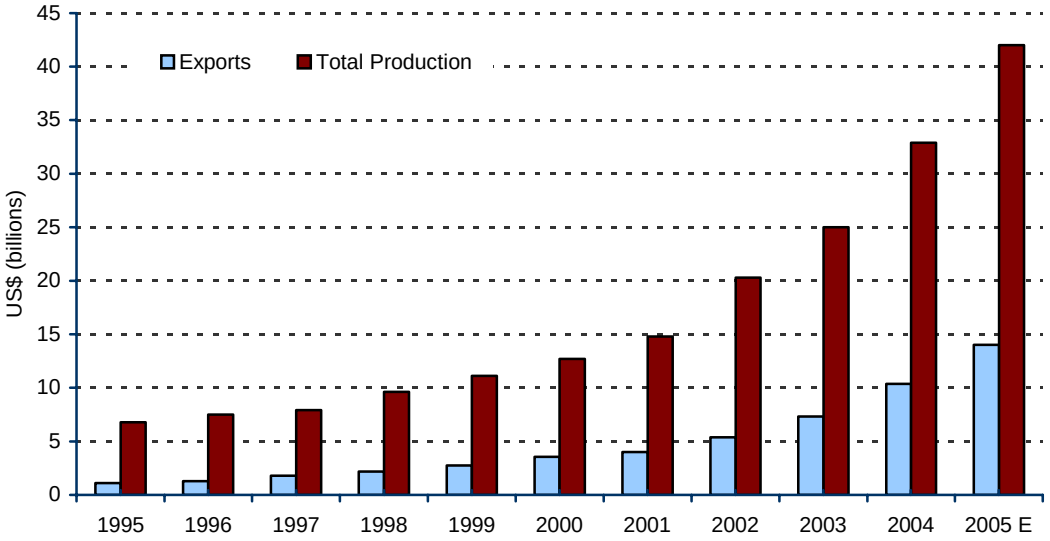

Figure 28. China's furniture production and exports, 1995-2004.

Source: CFNA 2005

Most of China's 50,000 furniture manufacturers are small- to medium-sized operations with annual sales of less than $36 million (RMB300 million). Large manufacturers account for only 3% of the industry. At least 90% of Chinese furniture companies are privately owned firms that are operated under a number of different arrangements, including foreign-owned, stock-holding companies, and various joint ventures (Cao *et al*. 2004).

China's furniture industry is also very regionally diverse. As shown in Table 33, the Pearl River Delta in the south is China's leading furniture manufacturing and exporting region. Together, China's three furniture manufacturing provinces (Guangdong, Fujian and Zhejiang) account for almost 90% of the furniture production and almost 85% of total export shipments in 2004.

Table 33. Key furniture production regions in China

	Center Provinces / Cities	Percent of total production (by piece)	Percent of total export (by value)
South	Guangdong, Fujian	66%	51%
East	Zhejiang, Shanghai	14%	23%
North	Shandong, Hebei, Tianjin, Beijing	8%	10%
Northeast	Harbin (Heilongjiang), Dalian (Liaoning)	4%	4%
Southwest & Northwest	Chengdu (Sichuan), Chongqing, Xi'an (Shannxi)	1%	1%

Source: CNFA 2005

Although Chinese statistics and the international trade statistics differ greatly, both agree that China and the US are the world's leading furniture traders. The US is the world's leading wooden furniture importer and China's best customer. In 2004, China exported $8.7 billion worth of household furniture, or almost half of US household furniture imports (Carroll 2005). At the same time, the US consumes half of China's furniture exports each year.

China's furniture imports are limited, but they have increased since 2000 when tariffs were eased as part of China's agreement with the WTO. In 2005, tariffs were eliminated altogether. However, eliminating the tariffs doesn't necessarily mean imports will increase dramatically in the near term. Issues such as the VAT on furniture ranging from 11%-17%, and high price still remain barriers.

In 2004, China imported $726 million in furniture, a 26% increase from 2003. Wooden furniture imports increased 13%, totaling $58.2 million. Germany is China's leading supplier, accounting for more than one-third of total import value, followed by Japan, South Korea, Taiwan and the US (World Trade Atlas 2005).

Distribution channels

Most residential furniture is sold through brand specific stores (such as Ethan Allen), furniture markets, and home centers. Analysts estimate that there are more than 2,500 large retail outlets with floor space above 5,000 square meters, and 30 furniture markets that are larger than 50,000 square meters (Figure 29) (Xu, 2005). There are also a number of regional distribution centers, such as "Furniture Ave." in Dongguan (Guangdong), and "Li Kou Furniture City" in Suzhou (Jiangsu), where thousands of factories have shops that sell furniture for the wholesale and retail markets.

Demand for high-end furniture is forecast to increase in the next few years as more luxury hotels and homes are built in China. Analysts estimate that the hotel industry will require 300,000 new sets of high-end hotel furniture, valued at US$125 million (RMB1 billion).

Brand-name stores and home centers are major outlets for imported furniture, yet these retailers target high income consumers. To lower prices and expand their market, some foreign furniture brands are forming joint-ventures and producing furniture locally. One example is a joint venture between Ethan Allan and Markor Group, China's largest softwood furniture manufacturer and exporter. So far, the partners have opened eleven stores in major Chinese cities and they hope to open 30 stores in the next three years. IKEA has also improved their access to the Chinese market by manufacturing products locally. Most of the furniture that IKEA carries in its Chinese stores is produced locally, which has helped the retailer become hugely successful with Chinese consumers through stores in Shanghai, Beijing and Shenzhen. In the spring of 2006, the company will add a new "super store" in Beijing. According to Linda Xu, IKEA China's public relations manager, IKEA increased sales revenue by 34.5% and sales volume by 500% in just five years by reducing prices by nearly 44% from 2000.

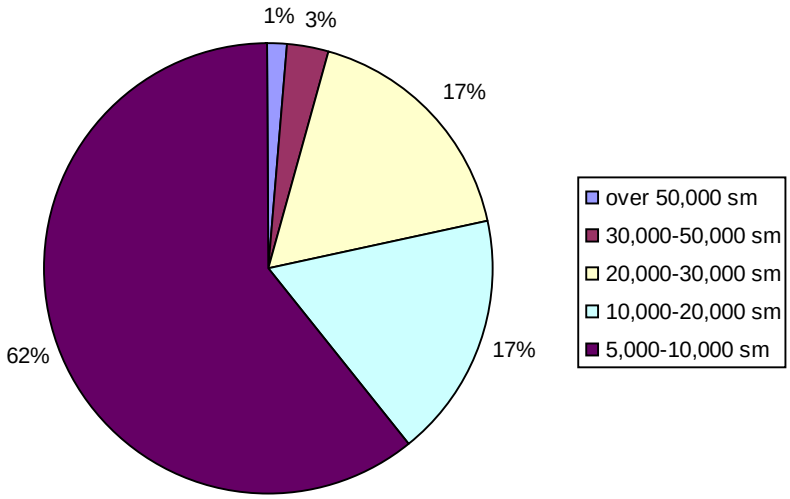

Figure 29. China's furniture retailers by floor space (square meters)
Source: Xu, 2005

Case Study: Markor International Furniture Ltd.
Markor, China's largest furniture manufacturer, exports most of its production to the US, Canada, and Europe. Markor has eleven manufacturing plants in China that produce a full range of furniture ranging from wood bedroom sets to upholstered furniture to accessories. The main manufacturing facilities are located in Tianjin and Urmuqi in China. In 2004, the company employed approximately 5,000 people and generated over $700 million in sales revenue (Wright Reports 2005).

Markor imports approximately 5,000 m^3 a month of radiata pine from New Zealand. The company also uses US hardwoods, Northern European spruce, Malaysian rubber wood, and domestic birch and ash.

Markor produces furniture for US retailers and importers such as Drexel Heritage, Lexington, Broyhill and Hammary (Urban 2002). In 2001, they signed an agreement with Ethan Allen to open a chain of Ethan Allen and Markor brand retail stores in China (Ethan Allen 2001). The first Markor store opened in 2002 and by October 2005, Markor had opened 14 stores (365f.com 2005). More information about Markor can be found on Wood and Wood Products Journal (April 2002) (http://www.iswonline.com/wwp/200204/markor.htm)

5.5. Treated Lumber

Industry summary

Treated wood for residential use was first introduced to China in the 1980s by Finnforest, which was followed by the introduction of southern yellow pine. China also has a number of domestic wood treaters who treat Russian red pine and wood from New Zealand, Scandinavia, and the US (OSU 2004).

The treated wood market did not develop until single- and multi- family housing developments began to feature elaborate landscaping features that included canals with walkways, footbridges, and railings. From 2002-2004, 23 new treated wood suppliers entered the market. Most of these companies focus on selling low priced domestically treated wood. Only 3-4 of these companies sell European pine (middle-income market), and 3-4 companies sell southern yellow pine (high-income market).

From 2002-2004, demand for treated southern yellow pine was strong as China's housing market boomed and luxury home developments and golf courses were built. However, in 2005, the housing market began to slow and industry representatives report slowing demand for treated southern yellow pine. Many of these exporters say competition from local treaters, tropical hardwoods, and lower cost substitutes are cutting into their market share. Interest in untreated wood is also increasing and one distributor predicted that sales of untreated wood would outpace treated wood sales in the future.

Another distributor said that he expects lower-priced products will increase their share of the market to approximately one-third, displacing European and Southern yellow pine. This distributor predicts that competition, particularly from lower-priced products, which will lead to huge price drops which will force a number of suppliers and treaters out of business.

The treated wood market can be broken into three levels. The low-priced market is locally treated domestic Mongolian scotch pine, Mason (South China), Russian pine, Brazilian or Chilean pine, and counterfeit, or untreated or dyed wood that is stamped and sold as treated. According to industry representatives, the average price for low-price/quality treated wood is US$247-494/ m^3 (RMB 2,000-4,000/m^3). Canfor and Finnforest supply the mid- to higher-priced market with products ranging from US$ 494-741/m^3 (RMB 4,000-6,000m^3). In some cases, European products are priced higher (up to RMB 7,000/m^3. Southern yellow pine is the most expensive, with prices exceeding US$864 (RMB7,000/$m^3$).

OBI is one of few home centers that sells imported treated lumber. However, after OBI was purchased by B&Q in 2004, the company replaced imported treated lumber with locally-treated products in a bid to offer lower prices.

A major issue for imported treated wood is treating standards. While local treaters may not meet international standards, most Chinese developers and builders are unaware of the difference and are willing to forego quality for low price. While the local industry is reportedly developing quality standards for treated wood, interviewees said that they expect these standards will fall far short of other international standards. US involvement in the standards development process might help improve these standards.

As in with other industries in China, the treated lumber industry is moving from imports to local production. Therefore, local manufacturers will continue to demand raw materials and technologies.

Distribution

Treated lumber is primarily sold directly to contractors and developers. Retail sales are almost non-existed. For example, a large supplier sells 98% of its volume to contractors for landscaping projects and only 2% to individual buyers.

As mentioned earlier, most successful treated wood suppliers provide design and construction services. A number of US building materials distributors follow a similar organization structure for selling to China.

The ground level of distributors is design companies on township (city) level. Qualified distributors should have at least RMB 2-3 million of capital investment, 3 sales people and one designer, as well as a warehouse of 300-500 square meters. Based on a large supplier's experience in the Chinese market, local distributors are not mature enough to educate and develop the market by themselves; neither can they provide professional training to employees.

The second tier of distributor is a national sales office, responsible for national level market development, logistics, promotion, training, technical support and quality control.

The top tier is the company head office in Taiwan. The company imports directly from North America, and is also the general distributor in Taiwan market.

Mr. Zhang (2005) compared market development process in Taiwan and China, a major difference is that China has distinctive regional characteristics which slow down market development process and make the market structure fragmented. Close to Taiwan, in Shanghai, government projects account for over 40%. This is a good channel to

introduce new products and establish company reputation, although participating in such projects means low profitability.

5.6 Glue-laminated lumber

Golf course developments represent an opportunity for glulam posts, beams, and treated wood. Since 1983, over 100 golf courses have been built in China and many include wood bridges, decks, and railings in their landscaping plans. There are also opportunities for glulam members in clubhouse buildings, hotels, and retail spaces.

APA-The Engineered Wood Association has led a number of programs to educate Chinese developers and architects about glulam structural members. The first glulam bridge was built in China in 2004 at the Sheshan golf course near Shanghai. Since then, APA has continued to promote glulams through seminars and trade show participation. The efforts were well received and two additional glulam bridges were contracted in late 2004.

APA is also working with the Shanghai 2010 World's Fair organizers and architects being considered for World's Fair projects to have glulams specified in the building plans. However, Ed Elias, International Programs Manager for APA, anticipates the heavy glulam post and beam market will remain a niche market in the near-term.

More education is needed regarding appropriate preservatives, maintenance, and wood durability. Imported glulams also face competition from domestically produced glulams. While the quality may not be the same as imported goods, and de-lamination is reportedly an issue, price often outweighs quality for Chinese developers.

6. STRATEGIC RECOMMENDATIONS

Understanding government policy and direction of investment is critical for firms with long-term resource commitments in China. Although the Chinese government readily embraces the capitalist ideology, a number of housing developments are controlled by local government agencies; China has yet to develop an open exchange of information. Therefore, good relations with government officials and large real estate companies are extremely helpful for firms in obtaining project and bidding information. Most, if not all of the successful US building materials exporters spend a great deal of time generating contacts at government offices in order to find out about new government housing development contracts. Others have developed strong relationships with Chinese developers or distributors who have their own previously established contacts with government officials. It is hard to overemphasize the importance of relationships in China and their role in developing successful businesses.

The most critical business decision facing US manufacturers and exporters of value-added wood products is identifying the proper distribution strategy. For most small to medium-sized companies, with limited resources in terms of capital and managerial capability, that means choosing the right distributor to represent their product. However, no matter where you do business in China, maintaining market presence is critical. Most US firms don't have inventory capacity in China, preferring to sell their products via a variety of intermediaries. Distribution options for US manufacturers and exporters include:

Trading companies: Trading companies are commonly used by foreign lumber and building materials companies to sell in China. Importers and exporters are hired on a commission basis and more often than not, they represent many companies and sell competing products, such as Russian and Canadian lumber.

Sales office: Before China lifted the ban on distribution for foreign companies operating in China at the end of 2004, representative offices were solely trading offices, without inventory capacities. Industry veterans suggest that overseas companies establish joint inventories with local partners in tax-free zones so that the foreign supplier can stock supply in China, tax free, to reduce lead time and keep inventory costs low.

Distributors: A few construction companies serve as agents or distributors for foreign building products. These firms usually carry a variety of products from multiple sources and the advantage is that the developer will usually use the products that they represent in their own developments. First-level (country- or regional-level) distributors are usually large firms with strong financial backing, which enables them to maintain larger inventories of building materials in China and supply secondary level distributors (smaller construction companies).

Timber markets: Traditional timber distribution centers are a major distribution channel for primary and secondary processed wood products. Industry analysts expect traditional markets to maintain at least one-third of the market over the next 5-10 years, due to the low prices available at these markets and the country's regionally fragmented distribution system.

Home centers: Newly introduced Chinese and foreign-owned western-style home centers are developing fast and attracting middle-income consumers and commercial customers who are drawn by the chains' warranties, no-dicker pricing, assurance that the centers will be in business long enough to honor product warranties, fair business practices, and installed sales. Home centers have been successful in winning middle-income consumers but they still struggle to convince consumers that their prices are competitive with traditional building materials markets. Home Way tries to allay consumers' fears about higher prices by offering double the purchase price refunds to consumers who find the same product cheaper at another store. To widen their sales reach and reduce their dependence on consumers, some home centers are selling to large interior decoration firms.

Regional Differences

China is made up of 22 provinces, 12 dialects and 1.3 billion people with wide ranging product preferences, income, and distribution channels. These differences exist not only between north and south, east and west, but also between rural and urban areas. First-tier cities such as Shanghai and Beijing have already been major targets for imports. However, second tier cities such as Chengdu, Chongqing, Guangzhou, and Dalian are emerging markets for imported building markets. The "West Development" project will bring more opportunities for imports over the next five years.

Logistics

Third party logistics are developing quickly and since China was admitted to the WTO, foreign companies have been allowed to operate in China. However, regional protectionism is a significant barrier to improving transportation efficiencies. Numerous toll booths along highways are a concern to managers when companies decide where to build regional distribution centers. Successfully selling products to China requires a long-term commitment of resources, which makes it an impractical venture for small exporters to undertake alone.

Our discussions with developers and builders clearly indicated two things. First, price is extremely important. However, developers of higher end residential projects appeared receptive to technical educational programs and information that communicated the performance and quality benefits of specific imported building materials. For example, developers we talked with demonstrated substantial interest in information related to the performance benefits of wood windows and treated lumber. This indicates that there is a group of developers and specifiers in China who would be willing to pay a premium for imported building materials if their benefits were clearly communicated.

However, they indicated that the availability of technical support, spare parts (in the case of wood windows), adequate inventory and promotional materials were important considerations in the material purchasing decision. These requirements suggest, and our interviews tended to confirm, that establishing a relationship with an aggressive Chinese importer can be a critical element of success for small and medium-sized companies looking to export their products to China. Chinese distributors have the knowledge, resources and contacts to successfully introduce a product into China. Having said this, any manufacturer or exporter looking to take their product to China needs to take time to carefully identify competent distributors in China and, having chosen one, to work hard to develop a strong business relationship with your distributor. This means providing them with the technical support that they will require.

It is worth repeating advice from AF&PA (2004) because it is equally applicable regardless of the building products sector. US companies interested in entering the Chinese market should:

- Adapt products to meet consumer preferences on size, appearance, and specifications;
- Educate consumers and specifiers about species, grades, and proper usage/installation;
- Focus on technical and product education;
- Demonstrate product performance and applications;
- Increase local representation in China to deal with distribution, logistics, and after-sales service. Inventory needs to be in the market;
- Focus on building the business for the long-term."

6.1. Market Opportunities for US Wood Products

Hardwood lumber and hardwood veneer

While wages in China are increasing, China still has an ample supply of inexpensive labor to supply its wood furniture and flooring plants, which will continue to drive demand for US hardwood lumber. American red oak, cherry, alder, maple, and walnut are among the most popular species for furniture manufacturing in China bound for Chinese and North American consumers. Yellow poplar lumber and cherry veneer are also in high demand, due to an increasing shortage of supply. The American Hardwood Export Council (AHEC) has predicted double-digit growth of sales in the Chinese non-structural markets over the next few years.

Wood Windows

US wood windows have many advantages over their competitors in China, such as thermal insulation and water proof properties. As the Chinese government promotes energy-efficiency in buildings and building materials, local windows manufacturers face rising costs and higher market-entry standards for better window technology, quality and performance. The current market for wood windows is high-end villa projects located in the major Chinese cities. However, in the future, rapid urbanization is likely to provide new opportunities in second tier cities such as Chongqing and Nanjing.

Engineered Roof Truss Systems

As a major part of the government's old urban district renovation campaign, flat roofs of aged residential buildings are to be replaced with sloped roof systems. Slope roof modification has many advantages over flat roofs, including energy-efficiency and visual appeal. For most Chinese people, it is also a design that provides increased storage and living space in the house. This initiative will provide market opportunities for US engineered roof and truss systems.

Glulam Bridges and Beams

Outdoor applications such as bridges may be an opportunity since local wood is generally of lower quality compared to imports. Current uses for glulam timbers include bridges and clubhouses in upscale golf course developments as well as structural components in the outdoor walkways built around the water features that are becoming more prevalent in upscale residential developments.

Treated SYP and naturally durable species

Although competition is intense in the treated lumber market, there is potential for US softwood species if the market is well educated and US standards are well recognized. Critical to the success of this product market is educating Chinese construction professionals about the importance of proper lumber treatment on the long-term durability and performance of treated lumber. This is particularly challenging given the price sensitivity of this market. Another option is the use of naturally durable wood species such as western red cedar, Alaska yellow cedar, eastern white cedar and redwood. While these species provide attractive options for builders, availability and cost can be an issue.

High-end fine furniture

Import tariffs on furniture imports have been totally removed since 2005. US furniture brands, such as La-Z-Boy and Ethan Allen, have already been found at the retail level in major Chinese cities. Buyers of imported furniture are largely limited to overseas expatriates and upper income Chinese who are pursuing western lifestyles. With China's increasing integration into global economy, more of such high-income people will settle in China, thus keeping the market grow continuously.

7. CONCLUSIONS

While China spent decades as a closed economy, it has quickly become one of the world's leading economies. While China predominately imports raw materials, exports of value-added products are increasing. China is the world's third leading wood products importer, the world's fourth leading wood products exporter and the US's fourth leading market for wood products exports (Global Trade Atlas 2005).

China's plentiful supply of cheap labor and comparatively low capital costs have made it a leading workshop for the world. China consumes billions of dollars in raw materials such as logs and lumber and re-exports even more in value-added wood products. While raw materials, such as logs and lumber used in China's furniture factories remain China's leading wood imports, the country is rapidly transitioning from a raw materials market to a diversified market with rising demand for value-added imports. Locally produced building materials dominate the regionally fragmented and price-sensitive market, yet US building materials are making inroads into specific niche markets.

Changes in China's demographics are driving demand for imported building materials. Smaller family size, rising education levels, and more Chinese returning from overseas work and study are causing the emergence of more affluent families and individuals who are interested in higher quality products. Privatization of the housing industry has also created huge demand for larger and better quality homes and related goods and services. Between 2001 and 2002, spending on real estate projects increased 31% to $97 billion. In 2004, the construction industry accounted for 6.6% of China's GDP, making it the country's fourth largest industry for the past four years (Hu 2005).

While China's average annual personal income is increasing and the generation born after 1970 has both the capacity and propensity to spend more on more expensive imported goods, imported building materials face formidable competition from lower priced domestically produced products. Since privately-owned housing is a relatively new concept in China, many people are content to have their own homes. Construction and building material quality are highly variable and not as highly regarded as they are in countries with long histories of access to high quality building materials and home design.

China's forests have been unable to meet the rising demand for wood products, used both for domestic consumption and manufacturing. China's government is enacting plans to increase the forest inventory and to be completely self-sufficient by 2015. However, with 370 million m^3 in total annual consumption and only 48 million m^3 in domestic production, it is unlikely that China will be able to reach this goal. China will also continue to be reliant on imports to meet demand for high quality species used to product furniture, flooring and other high-quality building materials.

Over the past decade, China has invested heavily in fixed assets to maintain the country's rapid level of economic growth. According to the Eleventh Five-Year Blueprint (2005-2010), the central government will refocus public investment to "building a harmonious society" by improving people's living standards, particularly those of rural and low-income individuals. Therefore, analysts expect housing developments for middle- and upper-income consumers will gradually slow and subsidized affordable housing projects will increase. Land use restrictions for single family developments were expected to limit the number of luxury developments, but most of the large builders have already secured land use permits that will enable them to continue to build.

The emphasis of the Eleventh Five-Year Blueprint is on spreading investment and economic development away from the relatively wealthy coastal areas into the interior and western regions. The government clearly recognizes that they could well face increasing social protest from these regions if they continue to fall farther behind the coastal regions in terms of infrastructural development, business investment and standards of living. While this change in public investment signals important reallocation of resources. It does not imply that investment in the coastal regions will stop. Clearly there will continue to be massive investments in infrastructure in the run-up to the 2010 Olympic Games. However, it does signal that there will be increasing opportunities in the many large cities located in the interior regions of China. US forest products exporters would do well to expand their focus from the coastal regions (where most foreign business managers are currently focused) to the relatively unexploited interior cities. These may yet prove to be fertile grounds for US manufacturers and exporters of value-added wood products.

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APPENDIX B. MAP OF CHINA

Source: Laurent, undated