

**C I N T R A F O R**

**Working Paper 94**

**China Sourcebook:  
An Introduction to the  
Chinese Residential  
Construction and Building  
Materials Market**

**Alicia Robbins  
Paul Boardman  
John Perez-Garcia  
Rose Braden**

**April 2004**

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## 1.0 INTRODUCTION

### *CHINA WOOD AND BUILDING MATERIALS MARKET: A SOURCEBOOK FOR EXPORTERS*

China's rapid economic development over the past two decades has dramatically changed its position in the world economy. China has emerged from virtual isolation to become the seventh largest trading nation and the sixth largest economy in the world. Policies to encourage international trading relationships and stimulate consumer spending have created a booming economy. Today, trade accounts for nearly 50% of China's Gross Domestic Product (GDP), with imports from the United States making up US\$20 billion. In 2001, China's GDP reached almost US\$1.13 trillion. While the economies of the US's other leading trading partners such as Japan and the European Union have declined or remained flat in recent years, China's GDP has generally remained greater than 5% for the past decade.

Foremost in the list of reforms that have helped stimulate China's economy is housing reform. The shift from state provided housing to private ownership relieved the government of the financial burden of providing its housing while at the same time creating a leading industry in China's economy. Beijing alone is calling for the development of the housing industry as a means of increasing its current 6% share of GDP in 2001 to 10% by 2010.

Between 1978 and 2000, per capita living space increased from 3.6 square meters to 10.3 square meters and total investment in fixed assets had increased to more than US\$387 billion. The Chinese government estimates that approximately 700 million square meters of residential floor space was constructed from 1997 through 2000. The government hopes to increase urban per capita living space to 25 m<sup>2</sup>, or approximately 72 m<sup>2</sup> per household, by 2005. In order to achieve this plan, the government expects to construct 1.5 billion square meters of residential building space from 2001 to 2005. Domestic housing starts, which reportedly reached 22 million last year, are projected to grow to 24 million in 2002 and 26 million in 2003. This could result in approximately four to ten million urban annual housing starts, depending on the rate at which increases in per capita and household living space are achieved.

Because of the high population density of most urban areas, approximately 78% of China's urban residents live in multi-family housing, which ranges from low-end housing to full service apartments. It is estimated that 48% of urban residents live in six-story and under buildings, 28% in high-rise apartment buildings, and 3% live in luxury-style apartments. Less common is low-density housing, which includes high-end luxury villas geared to high income Chinese and the expatriates living in China. These villas, Most of which tend to be western-style architecture, account for only 1% of urban housing.

Concrete, steel and brick, have been the dominant building materials in the modern era. Wood frame construction, popular in traditional Chinese architecture, has not seen much penetration since housing reforms began, and will likely only be attractive or affordable to upper class Chinese and the expatriate community for the foreseeable future. The Foreign Agricultural Service has estimated wood frame construction housing starts to be significantly less than one percent of total housing starts for the next several years, while steel, masonry, and others forms will make up the majority of construction methods.

Wood frame construction faces several challenges. While wood is now recognized in the Chinese building code, consumers and developers repeatedly express concern about price, durability, wind load resistance, fire, moisture/decay, insects/termites, and seismic strength of wood frame construction.

Opportunities exist for US building materials and housing system companies to enter and expand in the Chinese market, but it will require a tremendous amount of work to overcome cultural barriers. Firms should be committed to establishing long-term contacts with whom to develop trading relationships and to make effort to adapt their products to meet Chinese needs. It is estimated that a growth rate of anywhere in the range of 15-30% will be sustained in building materials for several years to come, growing from US\$24 billion to \$71 billion between 2001 and 2005. The US has managed to increase its exports to China in this market, despite an overall decrease in imports of building materials.

One of the greatest opportunities to enter the market is in the 2008 Beijing Olympics. The government estimates that nearly \$22 million will be invested in infrastructure for the Olympics. Furthermore, the government is promoting a "Green Olympics," providing good opportunity for green building and use of wood products in building materials and finishing.

Furthermore, the Ministry of Construction has recently approved "green building" guidelines, and is promoting energy saving, recycled or renewable and pollution-free building materials. This initiative could prove to be a useful marketing tool for imports of wood-based building materials. As of June 2000, clay bricks, a traditional building material in China, have been banned in the construction of all new buildings in medium to large cities by the Ministry of Construction, the State Economic and Trade Commission, and the State Administration of the Building Materials Industry. Coal is China's primary energy source, and in an effort to reduce air pollution the government is targeting brick production, which reportedly consumes a quarter of China's coal. As of June 2003, clay bricks will be banned entirely.

In 2000, the government banned the use of clay brick in home building. Prior to this ban, brick was one of the most preferred building materials and was a major competitor to wood frame housing, composing nearly 70% of Chinese construction materials. The Ministry of Construction is largely promoting the use of lightweight concrete blocks as a substitute to clay bricks and is hoping that the housing boom will carry over to China's steel industry. However, because there are no codes for steel frame houses and they serve a different market than wood frame housing, and because homebuyers in China (like those in the US) do not want to live in a home constructed entirely of steel, experts do not expect steel and concrete to pose much of a threat to the development of wood frame housing in China.

Most of the new housing will likely be built in the form of six-story walkups or high-rise buildings, but there also exists a potential for single, wood-frame homes. Weyerhaeuser's Kent Wheeler has said that China represents the only opportunity in the world to create a large wood frame housing market where one does not currently exist; this is largely because of China's aggressive housing reform policies, low amounts of housing currently available, high savings rates, increasing purchasing power, and a strong consumer desire for better housing. To penetrate the market, however, will require a significant amount of effort and marketing, as there is no current infrastructure to introduce potential Chinese homebuyers to wood frame construction. Despite this tremendous long-term potential, the Foreign Agricultural Service (FAS) estimates that for at least the next several years, wood frame construction will occupy less than half a percent of all housing starts.

It should be noted that China has nearly four times the population of the United States living on almost half the arable land. The American suburban model of the single-family home with a large surrounding lot is not likely a feasible model for a high percentage of Chinese real estate development. Not only is it not affordable for the majority of the population, but also there simply is not enough land for such expansion. Wood frame construction and single-family homes, in general, will be limited to a small subset of the population and most construction efforts will be focused on multi-family and multi-story buildings.

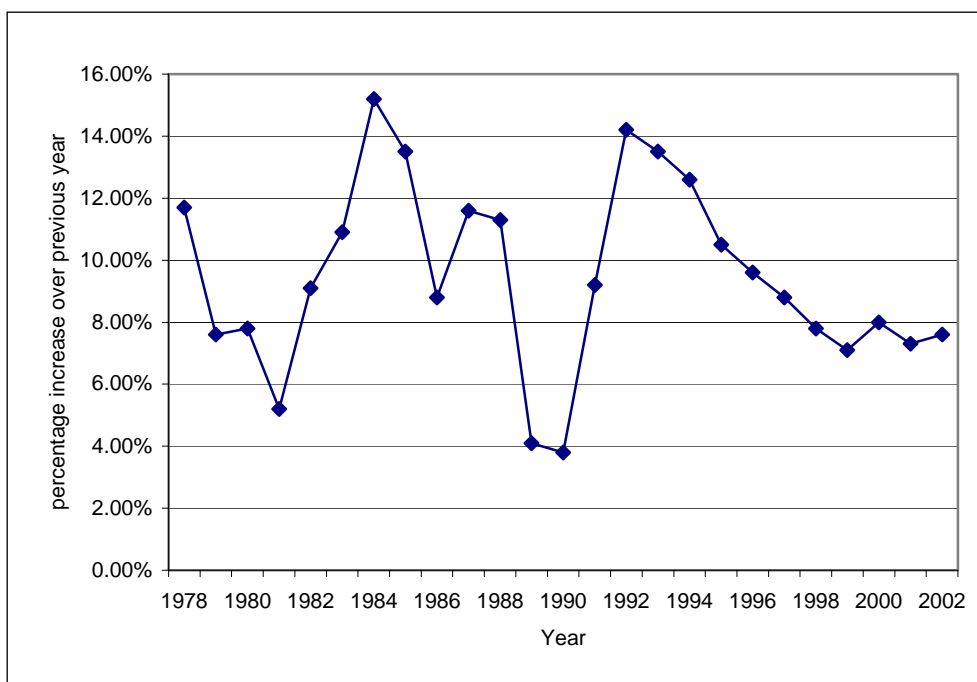
Other housing reforms that promise to change the current way that building materials are supplied include the newly policy to provide consumers with turnkey housing. Previously, Chinese homebuyers bought only the unfinished shell (*maopei*) of a home or apartment. Consumer complaints about graft, poor workmanship, and construction delays have prompted the government to require builders to pre-install features. This policy will take effect in Shanghai by 2005 and industry experts expect the policy to expand to other cities. The policy may result in a decline in the number of small interior finish companies as construction companies expand to fill the new niche.

Quality issues are a central area of concern in China's housing industry. The National Bureau of Statistics reports that only 30% of all construction in 2000 was of "high" quality. Many Chinese consumers have expressed concern over issues regarding the safety and durability of their homes, malfunctions, and comfort. As Chinese homebuyers become more selective and acquire more financial resources, quality is certain to become an important factor in consumers' decision-making process.

## 2.0 BACKGROUND: ECONOMIC OUTLOOK

### 2.1 NATIONAL ECONOMY

China's rapid economic development over the past twenty or so years has lifted millions out of severe poverty and propelled many into extraordinary wealth. China has emerged from virtual isolation to become the seventh largest trading nation and the sixth largest economy in the world. Following Deng Xiaoping's reinstatement in the late 1970s, the central government initiated a set of reforms that completely revitalized the country's economy, integrating it into the world economy. In 1978 China was almost completely autarkic, engaging in trade with only its closest neighbors and political allies. Today, trade accounts for nearly fifty percent of China's Gross Domestic Product (GDP); imports from the United States have grown from nearly zero to almost \$20 billion in value. In 2001, China's GDP reached close to \$1.13 trillion. Although annual economic growth during this period had been somewhat inconsistent and heavily affected by domestic political policies or trends, it has generally remained greater than 5% for the past decade (Figure 2.1). Growth in 2001 remained strong at over 7%.



**Figure 2.1. Annual Percentage Change in China's GDP.**

Source: National Bureau of Statistics of China, 2001

While much larger increases have occurred in coastal areas, national per capita GDP increased from \$46 to \$860 between 1978 and 2000, and average incomes are projected to reach US \$954 by the end of 2002.

China's reforms, targeted initially only at the agricultural sector, were later extended to industry and are now – as the country evolves into its membership in the World Trade Organization (WTO) – gaining momentum in the services sector. China's leaders have stressed a gradual and somewhat piecemeal reform process in order to avoid large, sweeping, and fast-paced restructuring that could potentially result in economic and social instability, not to mention potential political upheaval. Although Premier Zhu Rongji's style in the late 1990s had been less consensual and stressed more rapid reforms than that of Premier Zhao Ziyang in the 1980s, China has managed to avoid extending its reforms to the political system and related governing institutions. It has been what Barry Naughton calls "institutionally conservative," whereby the center has avoided dramatically replacing institutions and processes, instead slowly restructuring existing ones to enable the economy to eventually "grow out of the plan."

The Chinese expression "groping for stones while crossing the river" has epitomized the reform era and the government's experimentation process, attempting different policies at the local level and eventually officially adopting at the center those that seem to work best. Unfortunately, this has also meant that reform has been uneven and some areas, like the eastern coast, have experienced significantly more economic growth than others, such as the inner western provinces.

China's leaders are committed to integrating the country into the global economy and are well poised to continue down such a path. 2001 was an auspicious year for creating momentum in reforms and opening the country up to the rest of the world. China's capital city, Beijing, won its Olympic bid for the summer 2008 games; the country became a member of the World Trade Organization (WTO); and Shanghai successfully hosted the APEC summit in the fall. Even in the face of the global slowdown after September 11, the country was still able to maintain an officially reported 7.6% economic growth rate during the last quarter of 2001 and a 7.8% growth rate during the first half of 2002. As China grows, so do the wants and demands of its consumers; consumption patterns in China are beginning to look more and more like those of a developed country.

The next year will signal a new era for China as its leadership changes hands. President Jiang Zemin is to step down at the 16<sup>th</sup> Party Congress in November of 2002, and will likely be replaced by his successor, current Vice-President Hu Jintao. In addition, Li Peng, Chairman of the Standing Committee, and Premier Zhu Rongji are expected to leave their posts within the next few years. Zhu is expected to be replaced by his protégé, present Vice-Premier Wen Jiabao. The new leadership will be technocrats, bureaucrats who were trained in science and technology, and who are seemingly more driven by economics than political fervor. Hu was trained as an engineer, Wen as a geologist. Hu has very often been described simply as "enigmatic," in that not much is known about him or his leadership style and how he will perform after taking the reigns from Jiang.

Regardless of Hu's physical presence, a certain priority for both Hu and Wen will certainly be the preservation of the Communist Party and Beijing's ability to exert control over the provinces and municipalities. They will have to do so in the face of increased massive layoffs as the government offloads debt-ridden state-owned enterprises (SOEs) and increased unemployment among peasants. The Chinese Academy of Social Sciences has estimated that China's unemployment rate could reach as high as 15% in coming years (Miles, 2002). However, despite some uncertainties in the next generation of the Party's leadership and concerns over inflated reported growth rates, the outlook for the Chinese economy is generally good.

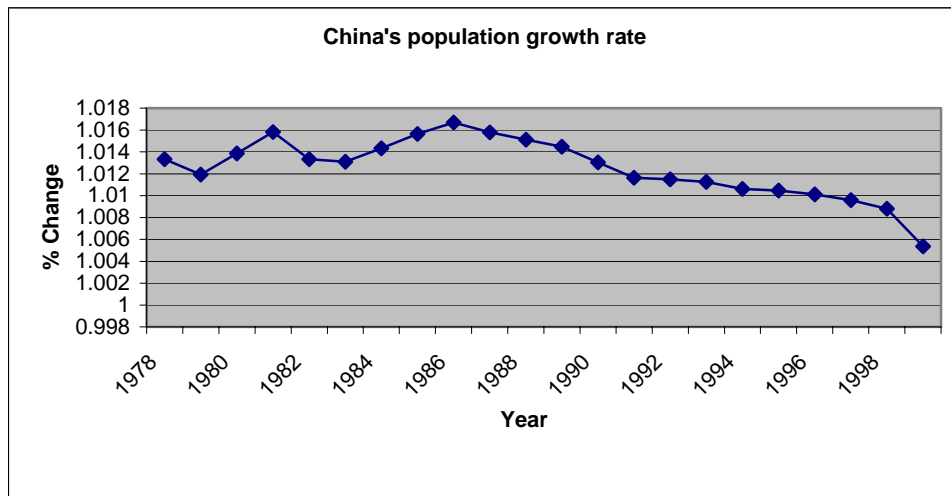
## **2.2 DEMOGRAPHICS**

### **2.2.1 Population**

Despite the crisis and famine of the Great Leap Forward during 1959 to 1961, China's population has more than doubled from 552 million persons in the early 1950s to over 1.2 billion in 2000. This is due in large part to the dramatic increase in crude birth rates coupled with a simultaneous drop in crude death rates during the 1960s, creating a nearly 3% population growth. During the 1970s, however, as a result of stringent government imposed family planning policies, birth rates began to drop off, and by 2000, the government reported actual population growth of just one percent (Figure 2.2) (National Bureau of Statistics of China, 2001).

Since the introduction of the One Child Per Family Policy, and its predecessor, the “Later-Longer-Fewer,” a policy that encouraged couples to get married later (for women, until they reached 23 in rural areas and 25 in cities), leave longer spacing between children and to have fewer children in total, average household size in China has been reduced to approximately 3.5 persons. It is likely, however, that in many areas, families are underreporting the size of their households in order to avoid fines or punishment for exceeding the one-child quota, a problem that has significant cumulative consequences for tax collection and government-provided services.

In 1980, in order to ensure that couples wait to get married, the government increased the minimum marrying age to twenty for all women. The average marrying age for women in China has increased from 18.7 in 1950 to 20.8 in 1970 and again in 1998 to 23.6. Unlike many Western countries, almost all women in China marry, and almost all marry by the time they reach the age 30. Also unlike many Western countries or Japan most women are still having children, even if only one; most Chinese women have their children between the ages 20 and 29.



**Figure 2.2. China’s Population Growth Rate, 1978-1998**

Source: National Bureau of Statistics of China, 2001

In addition to creating “little emperors” (children who are doted upon by their parents and grandparents), there have been a number of more significant unintended side effects of the government’s family planning policies. First, because in rural areas boys are generally considered critical to maintaining a family’s legacy while girls marry into another family, thereby leaving their own, preferential treatment is generally given to producing boys. Studies have demonstrated that in lower income families, first-born surviving children are more likely to be boys (Secondi, 2002). As the post one-child policy generation grows up, men are outnumbering women (some estimates put the ratio at 117 or 125 men for every 100 women) and are finding it increasingly difficult to find women willing to marry them. These “bare sticks” (those who cannot find wives and are resigned to living alone) are typically of lower-income and peasant origin.

As the generation born in the 1940s and 1950s begins aging, there will be fewer members of a younger generation to care for them and to contribute to the social security system as it currently exists. Chinese culture has traditionally stressed a strong sense of filial piety, and Chinese offspring have typically cared for their parents in their old age. As a result, there is no current infrastructure for retirement homes or facilities as found in western countries. Compounding this problem is that it is socially taboo to not care for your parents, so that developing an adequate infrastructure for elderly care facilities will likely take some time yet to achieve. Although urban workers have been entitled to pensions, the pension system is virtually bankrupt, making it unlikely that these pensions will cover the costs of caring for the elderly as the century progresses.

### 2.2.2 Urbanization and Migrant Populations

Although urbanization rates have skyrocketed over the past twenty years, China is still predominately an agricultural country (Table 2.1). Approximately 64% of its population continues to live in rural areas, but many rural residents are leaving the countryside to find better employment opportunities in urban areas. As of 2000, 40 of China's 663 cities already had populations over one million, making the urbanization rate around 30%; by 2030, it is expected that urbanization rates could reach as high as 55%.

**Table 2.1. Population of China (in millions)**

	<b>Total</b>	<b>Ratio</b>
	1265.83	100.00%
Rural	807.39	63.78%
Urban	458.44	36.22%

Source: National Bureau of Statistics of China, 2001

Because of strict policies regarding one's permanent residency status and the need to have a household registration card (*hukou*) to gain access to resources or facilities available to urban residents, cities are developing burgeoning "floating populations," migrant workers that are largely unaccounted for, or rather are included in rural population statistics but not those of the cities they are living and working in for at least six months a year. Without these residency cards, the estimated 100 million members of the floating population living and working in urban areas are not entitled to state subsidized housing.

The government has realized it must act on the issue of the *hukou* and their "floating populations", and has initiated reforms in certain cities. In 2001, approximately 600,000 rural migrants received urban residency cards, mostly in small to medium cities. In March 2001, the State Council mandated that all urban areas at and below the small city-level (or having a population of less than 100,000) grant a *hukou* to residents with a fixed job and home. Migrant workers typically live in shared housing, but there is a subset that has accumulated enough wealth to purchase or lease their own homes and could contribute to the further development of the middle and upper classes. Even without registration cards, and because they are not entitled to subsidized housing, a growing number of migrant workers paying full market rent are purchasing real estate, mostly in the smaller cities in the South, near Hong Kong.

In Shanghai the government recently issued a new form of residency cards, which are being touted as "green cards", and are available to both migrants from other parts of China and to foreigners living in Shanghai (China Daily Staff, 2002a). These new cards entitle recipients to the same social security benefits, to enroll their children in local schools, and access to provident funds as permanent residents, but have a limited time that they are active.

### 2.2.3 Household Formation

All of the above factors influence housing formation patterns in China, which also depend largely on income and location. It is generally presumed that even as the population increases, household size will continue to decrease as a result of family planning policies. While rural families will continue to have larger household sizes, urban families, which are generally better educated and have access to better healthcare, have household sizes smaller than the national average. As mentioned above, the national average is 3.5 persons; Shanghai's average household size is approximately 2.9 persons, while Beijing's is 2.8 (National Bureau of Statistics of China, 2001).<sup>1</sup> The number of dependent children is not the only factor involved in Chinese household sizes, the number of dependent elderly parents also contributes to household size and determination (Yi, 2002). While the nuclear family in the US includes two parents and two children, the nuclear family in China will look more like two parents, one child and one grandparent.

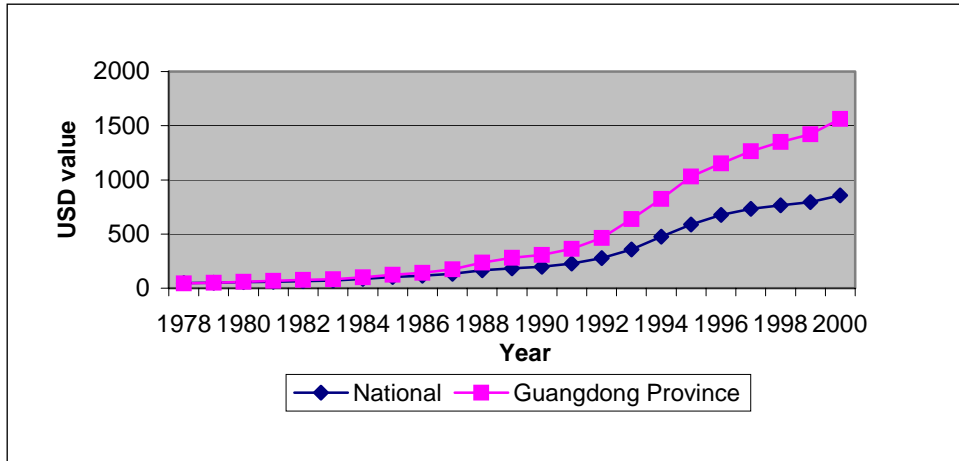
Every year approximately one and one half million new urban households are created. Newly married couples have tended to continue to live with one set of parents: in the planned era, until the government assigned housing, and in the reform era until they can afford the cost of purchasing their own homes.

## 2.3 INCOME LEVELS

As mentioned previously, per capita income has increased dramatically over the past twenty-five years since reforms were initiated. In 1978, per capita GDP was just \$46 (in current dollar value); today the per capita GDP is about \$954 (Figure 2.3). However, income distribution is greatly uneven. The government has emphasized developing certain areas first, and as a result urban workers have seen their incomes rise dramatically higher than have rural agricultural workers and residents of eastern coastal cities have seen their income rise higher than their counterparts in inland cities. Recent estimates put China's Gini Coefficient, an indicator of income distribution that ranges from 0 to 1 with 0 being perfectly equal distribution and 1 at the other end of the spectrum, at around .45; for comparison, most OECD countries have a Gini Coefficient around .26.

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<sup>1</sup> 2.9 and 2.8 respectively.



**Figure 2.3. China's Per Capita GDP**

Source: National Bureau of Statistics of China, 2001

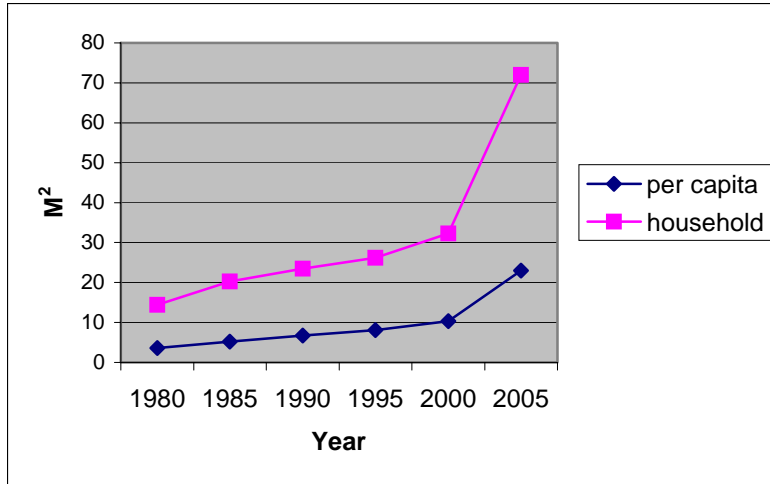
There is now a middle class of more than 100 million people, earning at least US \$3000 per year and growing by 20% (Smith, 2002). Most urban areas are striving to maintain between 9-11% per annum growth rate in per capita incomes. If they are able to achieve such a goal, by 2010 there could be a population larger than that of the United States earning at least \$6,000 per year.

## 2.4 HOUSING REFORMS AND INVESTMENT

Prior to the housing reforms initiated in the 1980s, all urban housing was provided by the state, via State-Owned Enterprises (SOEs) and work units (*danwei*). Since reforming SOEs and reducing the size of their debts has become one of the government's top priorities, relieving these institutions of the burden of providing their employees with what were previously considered non-market benefits, has become a vehicle of change. One of the major reforms to propel this change has been in the housing sector. In the 1980s, the government began experimenting with different types of incentives to offload the housing burden, but it was not until the late 80s and early 90s that housing reform really gained any momentum.

During the Mao years, because private consumption was eschewed, investment in housing was considered unproductive. All investment in new housing construction during those years was appropriated by the state, but the enterprise was responsible for maintenance and upkeep costs. However, because rents were less than one percent of household income they were not even adequate to cover maintenance costs and as a result housing conditions deteriorated significantly. On the eve of the Cultural Revolution in the 1960s, Mao urged urban developers and residents to reduce their living standards and wants; the Ministry of Building Industry actually called for per capita living space to not exceed four square meters (43 square feet) and household living area to not exceed eighteen square meters (194 square feet) (Lu, 2001).

Between 1949 and 1978 annual investment in housing was generally less than 1% of total GDP. As a result, by the late 1970s, per capita living for urban residents was only 3.6 square meters and total national investment in fixed assets in 1980 was US \$10 billion. By the mid 1980s, a nationwide survey determined that almost 30% of all urban residents were either without formal residence ("homeless") or living in overcrowded and otherwise inconvenient conditions; for those living in public housing, only a quarter lived in what were considered "good" conditions (Tolley, 1999).



**Figure 2.4. Urban Living Space**

Source: National Bureau of Statistics of China, various years.

The late reform era, however, has witnessed the development of policies aimed at eliminating such problems and increasing investment in housing. By 2000, per capita living space had increased to 10.3 square meters (Figure 2.4) and total investment in fixed assets had increased to more than US \$387 billion. During this period construction of residential floor space has increased by more than 250%. The Chinese government estimates that approximately 700 million square meters of residential floor space was constructed from 1997 through 2000 (National Bureau of Statistics of China, 2001).

Today, the government would like to see housing and real estate be established as a force fueling growth in the economy, instead of a public good and burden to the state. This transformation of the housing industry is evidenced in a number of cities across China. Beijing alone is calling for the development of the housing industry in order to increase its current 6% share of GDP in 2001 to 10% in 2010.

The government hopes to increase urban per capita living space to 25 m<sup>2</sup>, or approximately 72 m<sup>2</sup> per household, by 2005. In order to achieve its plan, the government expects to construct 1.5 billion square meters of residential building space during the five-year plan 2001 – 2005 (China Daily Staff, 2000a). Domestic housing starts, which reportedly reached 22 million last year, are projected to grow to 24 million in 2002 and 26 million in 2003 (FAS, 2002). This could result in approximately four to ten million urban annual housing starts, depending on the rate at which increases in per capita and household living space are achieved.

In addition to building new structures or renovating existing ones, the government introduced a series of policies in 1998 to provide better incentives for people to purchase their own homes. While rents are still subsidized in many cities, an emerging middle and upper classes able to afford their own homes will contribute to the growing number of urban dwellers renovating and furnishing existing residences.

### **Note on Chinese Statistics**

*In China, there is a saying that “officials create statistics and statistics create careers for officials.” Statistical falsification at both central and local levels is a problem of epidemic proportions in the Middle Kingdom and has been recognized by the government as a hindrance to the accumulation of accurate data. Even Premier Zhu Rongji has commented on the abysmal state of Chinese statistics, noting that false statistics drive down the quality of policy decision-making.*

*Falsification can come in the form of outright fabrication or selectively chosen data that deliberately provides misleading information. A 1997 study on the implementation of the Statistics Law found 60,000 instances of erroneous or misleading statistics, half of which were intentionally falsified. More recently, in “The Coming Collapse of China,” Gordon Chang cites a 1999 study conducted by the Ministry of Finance that found that close to 90% of state owned enterprises had actually fabricated their profit and loss statements.*

*The high level of bureaucracy involved in each step of government activities and the lack of a proper internal evaluation system makes it easy for local officials to manipulate statistics. Without an effective, independent and transparent auditing process, government departments may only report news to their superiors that enables them to appear to have made significant economic achievements. Even if officials at a higher level detect falsification, there is a low probability that any action will be taken. The collection of statistical information is only further impeded when local officials actually refuse to make it available for fear of providing their superiors with what might not be construed as “happy” news.*

*Dr. Thomas Rawski, of the University of Pittsburgh, estimates that GDP growth in 2001 was closer to 3% or 4%, about half of the official figure. He challenges the official figures by looking at other data such as energy consumption. Between 1997 and 2000, China's GDP officially grew by 24.7%. Yet counter-intuitively, energy consumption dropped by 12.8% in the same period. For more on Dr. Rawski's research please see his website: <http://www.pitt.edu/~tgrawski/>*

*Nonetheless, the central government takes information collection seriously, and in many cases, statistics provided or sanctioned by Beijing are the only ones available. In this study we will refer often to statistics from China's State Statistical Bureau, the central government's highest-level statistical accumulation organization; while we do not wish to undermine the reader's confidence in economic and trade statistics, we feel it is important to make him or her aware of the contested nature of Chinese statistics.*

### 3.0 HOUSING MARKET ASSESSMENT

#### 3.1 LEGACY OF THE STATE OWNED ENTERPRISE SYSTEM

After the Communists established power in 1949, urban land was seized and incorporated into national ownership. Urban workers employed by the state were entitled to a number of benefits provided by the state via the enterprise. These benefits, which were generally not extended to rural peasants and urban employees working in collectives, included health care, education for family members, access to lower prices for food, lifelong job security (“the iron rice bowl”), retirement benefits, and housing. Oftentimes, the quality of housing or health facilities depended on the magnitude of the enterprise. Larger and more profitable enterprises benefiting from an economy-of-scale effect were able to provide their employees with access to better resources.

Although different enterprises were able to provide state workers with different levels of quality housing and because personal consumption was eschewed during the Mao years, most urban residents lived in poor quality housing. Well-known problems of the welfare system included housing shortages, unequal distribution, stagnant investment, and inadequate rents that led to government deficits. Entitlement did not necessarily mean workers were always provided with adequate housing or that the system functioned effectively. Urbanization rates also increased rapidly during the years following the initiation of reforms, compounding the shortage and quality problems.

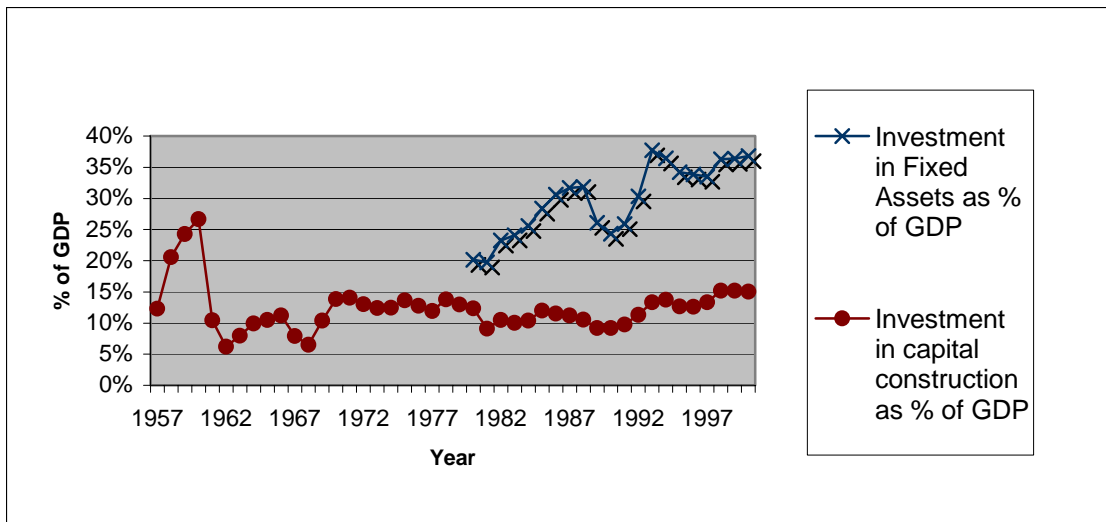


Figure 3.1. Investment in Capital Construction and Fixed Assets as a Percentage of GDP from 1957 to 2000.

Source: National Bureau of Statistics of China, 2001

From 1950-1978, urban per capita living space remained stagnant and even declined in some areas, falling from an average of 4.5 m<sup>2</sup> per capita to approximately 3.6 m<sup>2</sup> per capita (Lu, 2001). Annual investment in capital construction between 1957 and 1977 grew threefold, increasing from approximately US \$1.5 billion to US \$4.5 billion. As a percentage of GDP, investment actually increased from 12% in 1957 to nearly 27% in 1960, but this was likely due to the intensive industrial development policies of the Great Leap Forward, because by 1962 it had dropped to a mere 6% of total GDP. During this period, investment for new housing construction was allocated directly by the state to the enterprise; one obvious consequence of this was that the government had complete control over increasing or restricting housing investment (Lu, 2001). Mao's suggestions that urban residents ought to reconsider how much living space they actually needed then became official policy, and the government simply reduced the amount of funding appropriated to enterprises. Individuals could not own their homes and the average cost of rent was equal to a mere 1% of household income (Zhang, 1998).

In the late 1970s, the government acknowledged the severity of the housing situation and began seriously considering reforms in the manner of which housing was provided to the public. In 1980, after a speech made by Deng Xiaoping, individuals (and households) in some cities were permitted, and even encouraged, to purchase their own homes. For several reasons the early experiments and incentives carried out over the next decade aimed at promoting individual home buying were not entirely successful (Murie, 1999). First, the purchase cost was subsidized by as much as 30% by the enterprise for which the buyer worked, making it still very costly to the enterprise. Second, rents continued to remain so low that it was not worth the high purchase prices. Third, buyers were required to put as much as 40% down, with the rest to be paid out over a span of only five years. Fourth, while homes could be inherited, they could not be resold into a secondary housing market, making the purchase of a home not very attractive in terms of investment possibilities.

Having experimented with a series of improved incentives in the second half of the 1980s, the government was confident it had developed several successful initiatives and in 1988, Beijing put forth the so-called Ten Year Reform Strategy, or the National Housing Reform Plan. The plan was based on experiments carried out in Yantai in the Shandong province, and called for increasing rents for publicly provided housing, subsidizing the purchase of housing by individuals, and vigorous promotion of selling public housing (Murie, 1999). The national plan was implemented initially only in the 80 largest cities and later extended to include all cities and towns. Three years later, the government formalized a set of plans to establish sources of savings for households to draw from upon purchasing their own homes. Administrative control over housing allocation and management was devolved to the work unit level, with the eventual goal of shifting responsibility to private or non-governmental firms. In general, however, the central government still retained ultimate legislative authority over property rights in urban areas.

Throughout this era of new housing policy, urban residents experienced improvements in their overall living conditions. During the 1980s, per capita living space in urban areas rose to 6 m<sup>2</sup>. By 2000, urban per capita living space had increased to 10.3 m<sup>2</sup>; by 2005, the government aims to increase that average to 23 m<sup>2</sup>, and doing so has been declared the main task of housing departments for the 2001-2005 period (China Daily, 2001a). Since 1978, investment in capital construction has averaged about 12% of GDP annually, growing from US \$6.6 billion to more than \$158 billion.

In 1998, ten years after the first formal housing reform plan, Premier Zhu Rongji announced that urban state-owned enterprises were to completely discontinue providing housing to new employees, but would continue to provide cash allowances to help cover the cost of the higher priced housing now available on the open market. For those who have continued to live in state-provided housing, monthly rents have risen from 1% of the household income to close to 15%. By 2000, the government reported that nearly 70% of all formerly State-owned housing had been sold to individuals at "market" prices (People's Daily, 2000a). One of the most important aspects of housing reform isn't in the number of houses or apartments sold to date, but in the overall change in perception, particularly among young people, of housing provision. Because the government has legitimized the concept of private home ownership, most people now view home ownership as a goal and a long-term necessity. This, in turn, will undoubtedly result in exponential growth of home sales in future years.

## **3.2 THE MORTGAGE SYSTEM AND TRENDS IN FINANCING**

As mentioned earlier, prior to reforms all funds for the construction of new buildings had to be earmarked and provided by the state, but beginning in the late 70s the government allowed private individuals and other ownership regimes to partner in the investment of construction projects. Although private investment in construction grew fourfold from 1980 to 1984, it never accounted for more than 7% of total investment. More recently, state appropriation for capital construction has dwindled from 78% of total funds in 1978 to just 12% in 2000 (National Bureau of Statistics of China, 2001). State investment in real estate development has also become largely insignificant; by 2000, it had been reduced to a mere .1% of total investment, with the greatest investment coming from domestic loans, foreign investment, and fundraising.

In the two decades since housing reforms began, and since it realized it could no longer afford to entirely finance urban residential housing development, the government has reintroduced market mechanisms to stimulate both investment in new construction and the purchase of individual homes. In 1994, the government formally recognized the importance of private investment in housing construction and home buying. With respect to the latter, policymakers have used a combination of initiatives to make the purchase of a home more accessible to urban residents.

First, the government called upon Chinese banks to expand their portfolios to include consumption loans. Many Chinese banks, created largely to fund industrial and agricultural development, are now redefining their portfolios to include home loans. The Bank of China, the country's central bank, and others, such as China Construction Bank and the Industrial and Commercial Bank, are now issuing 20 to 30-year mortgages without fixed rates. Interest rates on home loans are generally around 5.6%. During the 1990s, the Industrial and Commercial Bank tripled their home savings deposits, reaching over 70 billion RMB. In June 1998, in an effort to make loans more accessible to more people, the government issued the Personal Housing Loan Management Regulation, which regulated various aspects of housing loans including target, condition, process, validity limit, interest rates, mortgage, property pledge and assurance, housing insurance, mortgaged property, and property disposal. In 1999 banks had doubled the value of loans issued for home buying over the previous year.

Second is the creation of mandatory public reserve funds, also known as provident funds or the compulsory savings, which were developed through experimentation in cities like Yantai and Shanghai in the late 80s and formalized across the country in the early 90s. Where implemented, state employees are required to deposit a portion of their monthly salary into their funds (approximately 5-7% of monthly salary); the employer then deposits a comparable or matching amount into the account. Within two years of participation, the employee can borrow up to fifteen times what has been deposited with an interest rate typically 1-2% below market levels (Wheiler, 2001). The employer's approval is required for use of the funds and they can only be used for the purchase, renovation, or repair of a home. If the fund is not used, the employee can collect the monies upon retirement.

Third, in order to offload many homes, work units offered apartments for sale at less than market prices. Many people were able to afford the purchase of their homes through this sort of incentive, especially when combined with one or two of the above options and their own personal savings or through other forms of informal borrowing. The Chinese have unusually high savings rates; it is estimated that urban and rural savings reserves account for nearly half of China's bank deposits. This is largely due to the fact that for so many years, urban workers had most of their needs provided or subsidized by the state. Some estimate that five or six million Chinese have savings worth more than US \$100,000 (Smith, 2002).

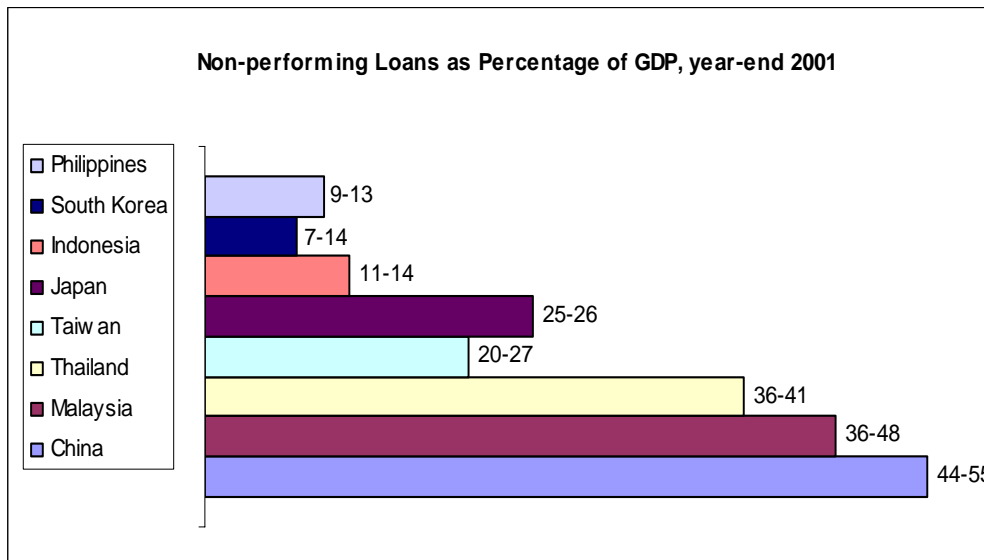
### **3.2.1 The Future of Financing**

One of the concerns accompanying China's accession to the WTO is the certain difficulty the country will encounter in revamping the banking system. At present, China's banks are predominately state-run and are the primary source for the insolvent SOEs the government is desperately trying to reform. SOEs account for a large portion of the banks' non-performing loans (NPLs). Although there is little consensus on the real value of China's NPLs, it has been estimated that they now account for anywhere between 30-45% of all loans (Figure 3.2).

It is these same banks that the government is instructing to issue increased number of personal loans for home buying. Prior to the 1998 housing policy, only a certain number of banks were permitted to issue mortgage loans; the new policy not only extended mortgaging rights to all banks, it also formalized a uniform application process and eligibility requirements (Luo, 2001).

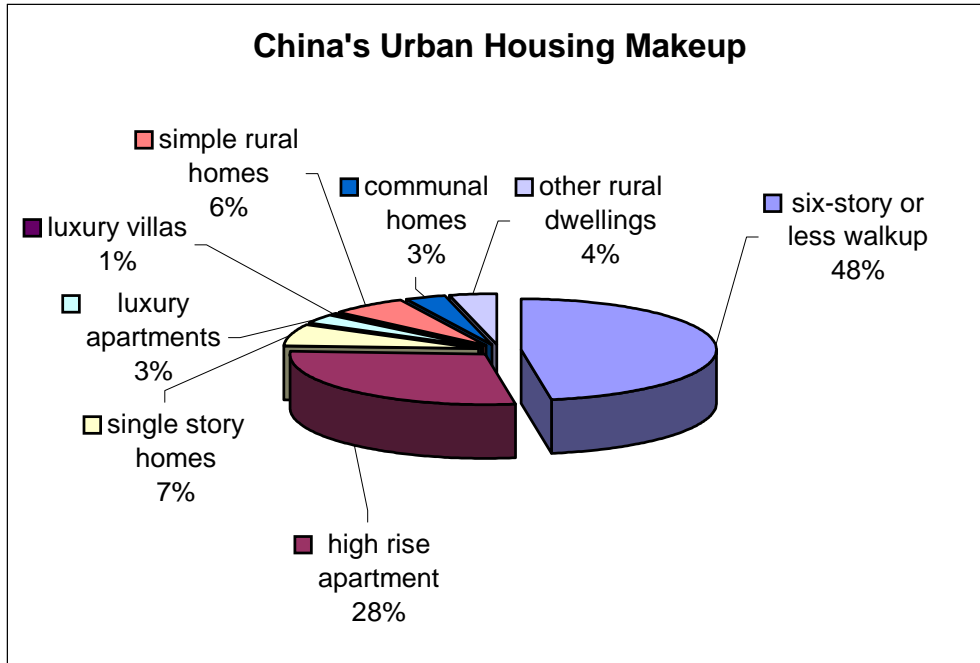
In 1997, there were eight national banks, most of which were tied to industrial or agricultural development. In 2000, there were nineteen national banks, most of which were established to assist in local economic development or international trade. Most of these banks continue to be state-owned and operated, but WTO entrance will most likely result in a complete restructuring of the banking system. Previously, foreign banks have not been allowed to open branches in mainland China or to accept personal savings accounts in Chinese currency. Within two years of accession foreign banks will be allowed to conduct business with companies in RMB; within five they will be allowed to accept deposits of RMB from individuals.

The frenzied pace of construction has left little room for style or grace in many places; after years of the bland style with which Communist China built apartment buildings for the masses, trends in home design are beginning to change. Prior to 1990, most apartments were constructed with 2-3 bedrooms, a bathroom, small kitchen and no living room. For most of the 1990s, apartments were built similarly, but a small living room was added to the home. After 1998, apartments began to be constructed with 2-3 bedrooms, a bathroom, larger kitchen and living room and a dining room, as well as with some closet or storage space (Wheiler, 2001).



**Figure 3.2. Non-performing Loans as a Percentage of GDP, year-end 2001**

Source: McKinsey Quarterly Staff, 2002.



**Figure 3.3. China's Urban Housing Makeup**

Source: FSC ISA Report 2001

Because of the high population density of most urban areas, planners have stressed multi-family residences (Figure 3.3). Close to 78% of urban residents live in high density schemes, which include low-end, "economical" housing to full service apartments. These homes are typically built in the form of either a six-floor walk-up or a high-rise building. It is estimated that 48% of urban residents live in six-story and under buildings, 28% in high-rise apartment buildings, and 3% live in luxury-style apartments. Less common is low-density housing, which includes high-end luxury villas geared to high income Chinese and the expatriate communities living in China. These villas account for only 1% of urban housing. Most of these villas tend to be designed in western-style architecture, with few in the traditional Chinese style courtyard.

ITTO reports that by the end of 2001 the per-capita housing area for China's urban residents had jumped to 21 sq. meters from 13 sq. meters in 1989. Rural housing also improved. Per-capita housing area in rural China area has reportedly increased to 25 sq. meters up from 21.8 sq. meters in 1995. Annual investment in both urban and rural housing has taken up more than 8% of GDP which accounts for more than 20% of investment of national fixed assets. The housing industry has contributed about 4% annually to GDP since 1999. This exceeds the contribution of other important industries such steel industry and energy (ITTO Staff, 2002).

### 3.3 HOUSING STARTS BY CONSTRUCTION METHOD

Concrete, steel and brick, have been the dominant building materials in the modern era. Wood frame construction, popular in traditional Chinese architecture, has not seen much penetration since housing reforms began, and will likely only be attractive or affordable to upper class Chinese and the expatriate community for the foreseeable future. The Foreign Agricultural Service has estimated wood frame construction housing starts to be significantly less than one percent of total housing starts for the next several years, while steel, masonry, and others forms will make up the large majority of construction methods (Table 3.1).

**Table 3.1. China's Construction Market**

	2000	2001	2002	2003
TOTAL STARTS (in 1000 units)	18256	19534	21096	26165
Wood Frame	10	11	12	13
Steel, Masonry, Other	18246	19523	21084	26152
TOTAL RESIDENTIAL	14057	15041	16244	21161
Single family	1406	1504	1624	2116
Multi family	12651	13537	14620	19045

Source: FAS, 2002

### 3.4 HOUSING CATEGORIES BY OWNERSHIP AND FINANCING

#### 3.4.1 Private Housing

By 2000 the number of homes purchased by individuals was fifteen times greater than the number of homes purchased in 1991. In 1998 a State Statistical Bureau survey indicated that almost 33% of urban residents owned their own homes, although many think that the estimate is too high. Owners can sell their homes, but it is unclear what will happen at the end of a 70-year lease for the land on which homes are built as this land is owned by the state.

#### 3.4.2 Public Housing

Those purchasing housing remain largely tied to the public sector; work units continue to contribute a large portion of buyers of new housing. Ownership of the land itself remains in the hands of the government, but an easement is provided to the leaseholder, who is entitled to use of the property for a set amount of time depending on use. Residential users can be granted a 70-year lease, industrial users are entitled to 50-year leases, and sports, recreational, or educational groups can also be granted 50-year leases (Wang, 1999). At the end of these leases, the user can renew their contracts.

Although publicly provided housing is being phased out, the government still subsidizes housing for the vast majority of urban residents. For those who continue to rent from their work units, gradual increases in their monthly payments have risen from approximately 1% to 15% of total household incomes.

### 3.5 CONSTRAINTS AND OPPORTUNITIES

#### 3.5.1 Consumer Preferences and Building or Construction Quality

There are consumer concerns about several aspects of wood frame construction homes. These concerns include durability, wind load resistance, fire, moisture/decay, insects/termites, and seismic strength. Developers have also expressed these concerns.

##### *Pricing*

One concern for potential homebuyers is that the price to income ratio is quite high, much higher than many other countries, and the average urban resident would have to save for many years before he or she would be able to afford their own home. However, because the Chinese have relatively high savings rates, former state employees have access to provident funds, and because the government is encouraging banks to expand home loans to include "zero down payment", there are many ways to fund the purchase of a home other than through individuals' direct incomes.

**Table 3.2. Housing prices per unit area in China for 2000**

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**Actual Price (including estimate finishing costs) in \$ per m<sup>2</sup>**

	<b>Residential Buildings</b>	<b>Villas &amp; Upscale</b>	<b>Economical</b>
Beijing	773	1411	449
Shanghai	564	1037	NA
Guangdong	505	682	236
Sichuan	193	651	143

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In China all urban land is owned by the state. Users may opt to lease rights to a piece of land for a given period of time. In 1990 and 1994 the government enacted the Urban Land Regulations and the Urban Real Estate Law, which gives local land departments the right to issue long-term leases (i.e., up to 70 years for residential usage). This concept is known as “granted land use rights” (Chan, 1999).

Pricing is determined by a combination of factors, including current government policies. These factors include:

- Cost for land acquisition, resettlement of peasant owners, site development, construction, taxes, project management, and profits.
- Expenses for auxiliary facilities with housing.
- Public facilities including green space, on-site infrastructure, kindergartens, schools, sub-district offices, and other unspecified items, commonly known as *da peitao* (large projects of public infrastructure in new housing development areas).
- Commercial facilities such as clinics, grocery stores, bookstores, gas stations, waste treatment plants, and similar structures.

If the average home is approximately 80 square meters in cities, or 861 square feet, and 50 nationally, or 538.2 square feet, then the average price of a home is: \$14,531 (nationally) (see Table 3.2):

- In Beijing: \$61,840
- In Shanghai: \$45,120
- Chengdu: \$15,440
- Guangzhou: \$40,400

An example of gradual reform from the early stages is the two-tiered development scheme; one for residents who could afford to wholly purchase their homes and one for those who could not afford to purchase. For these individuals, enterprises would purchase apartment buildings and rent at subsidized prices. In Shanghai in 1993, 75% of new housing was bought by work units to provide to their employees.

### **3.5.2 Opportunities for US Building Materials and Housing Systems**

Opportunities exist for US building materials and housing system companies to enter and expand in the Chinese market, but it will require a tremendous amount of work to conquer the cultural and language barriers. Firms should be committed to establishing long-term contacts with whom to develop trading relationships and to make effort to adapt their products to meet Chinese needs. It is estimated that a growth rate of anywhere in the range of 15-30% will be sustained in building materials for several years to come, growing from US \$24 billion to \$71 billion between 2001 and 2005. The US has managed to increase its exports to China in this market, despite an overall decrease in imports of building materials.

One of the greatest opportunities to enter the market is in the 2008 Beijing Olympics. The government estimates that nearly \$22 million will be invested in infrastructure for the Olympics. Furthermore, the government is promoting a “Green Olympics,” providing good opportunity for green building and use of wood products in building materials and finishing.

Furthermore, the Ministry of Construction has recently approved “green building” guidelines, and is promoting energy saving, recycled or renewable and pollution-free building materials. This initiative could prove to be a useful marketing tool for imports of wood-based building materials. As of June 2000, clay bricks, a traditional building material in China, have been banned in the construction of all new buildings in medium to large cities by the Ministry of Construction, the State Economic and Trade Commission, and the State Administration of the Building Materials Industry. Coal is China’s primary energy source, and in an effort to reduce air pollution the government is targeting brick production, which reportedly consumes a quarter of China’s coal (China Daily Staff, 2001b). As of June 2003, clay bricks will be banned entirely.

In 2000, the government banned the use of clay brick in home building. Prior to this ban, brick was one of the most preferred building materials and was a major competitor to wood frame housing, composing nearly 70% of Chinese construction materials. The Ministry of Construction is largely promoting the use of lightweight concrete blocks as a substitute to the clay bricks and is hoping that the housing boom will carry over to China's steel industry. However, because there are no codes for steel framed houses and they serve a different market than wood frame housing, and because homebuyers in China (like those in the US) do not want to live in a home constructed entirely of steel, experts do not expect steel and concrete to pose much of a threat to the development of wood frame housing in China. Other materials that have recently been banned or are being phased out are cast iron piping and steel windows and doors.

Most of the new housing will likely be built in the form of six-story walkups or high-rise buildings, but there also exists a potential for single, wood-frame construction (WFC) homes. Weyerhaeuser's Kent Wheeler has said that China represents the only opportunity in the world to create a large wood frame housing market where one does not currently exist; this is largely because of China's aggressive housing reform policies, low amounts of housing currently available, high savings rates, increasing purchasing power, and a strong consumer desire for better housing (Wheeler, 2001). To penetrate the market, however, will require a significant amount of effort and marketing, as there is no current infrastructure to introduce potential Chinese homebuyers to wood frame construction. Despite this tremendous long-term potential, the Foreign Agricultural Service (FAS) estimates that for at least the next several years, WFC will occupy less than half a percent of all housing starts.

It should be noted that China has nearly four times the population of the United States living on almost half the arable land. Population densities in most cities are quite high, especially in the eastern coastal cities. In the four cities discussed above, the average density of residents is about 1832 persons per square kilometer, with Shanghai having the highest population density at 2,626 persons per square kilometer, followed then by Chengdu, Guangzhou and Beijing. The American suburban model of the single-family home with a large surrounding lot is not likely a feasible model for a high percentage of Chinese real estate development. Not only is it not affordable for the majority of the population, but also there simply is not enough land for such expansion. WFC and single-family homes, in general, will be limited to a small subset of the population and most construction efforts will be focused on multi-family and multi-story buildings.

### **3.5.3 Quality Concerns**

A reappearing concern on both buyers' and builders' parts is that of ensuring quality. The National Bureau of Statistics reports that only 30% of all construction in 2000 was of "high" quality.

Many Chinese consumers have already expressed concern over issues regarding the safety and durability of their homes, malfunctions, and comfort. As Chinese homebuyers become more selective and acquire more financial resources, quality is certain to become an important factor in consumers' decision-making process.

Unfortunately, such construction quality issues also carry-over for buyers of western style luxury villas and wood frame construction homes. Training is much needed to advise builders of how to assemble doors and windows, inappropriate use of materials, and even wood with forged labels.

China is currently developing a legal framework for recourse in dispute cases where homebuyers feel cheated by their builders or developers (Xinhua Staff, 2002a). In a country where quality can be a significant problem, having a just resolution process is an important step.

### **3.6 OTHER HOUSING POLICIES AND GOVERNMENT INITIATIVES – IMPACT ON DEMAND**

The Ministry of Construction is presently revamping construction policies to convert the market over to turnkey housing. Previously, Chinese homebuyers bought only the unfinished shell (*maopei*) of a home or apartment. Because performing improvements and upgrades then required much supervision time of the buyer, and delayed the move-in date typically by six months, the government is trying to create policies that require the builders to pre-install features and to ensure better quality.

There are already almost twelve thousand foreign invested developers and five thousand construction firms operating in China; within three years, wholly foreign owned construction firms will be permitted to operate within China (FAS, 2002).

Despite the plethora of official circulars and bureaucratic speeches, the first piece of legislation was passed in 1995 (Urban Housing and Real Estate Act) (Wang, 1999). Alan Murie and Ya Ping Wang argued that without legislation, the development of commercial housing was explosive, created a boom and bust environment, and inflated prices.

#### 4.0 MARKET PROFILES: CHENGDU, GUANGZHOU, BEIJING, SHANGHAI

This section will focus on existing and potential opportunities of four major cities within China. American interests have strong presences in all four of these cities. Guangzhou and Chengdu are the capitals of Guangdong and Sichuan Provinces, respectively; Beijing and Shanghai are two of the four municipalities in China that enjoy an administrative status of provincial level. All of these cities have, or are located close to, Special Economic Zones (SEZs), areas designated by the central government to attract foreign capital. While Guangzhou, Shanghai, and Beijing have been at the forefront of domestic and international investment attention, Chengdu is only beginning to experience economic development. All of these cities will continue to receive high levels of foreign and domestic investment, especially since China's recent accession to the WTO will result in more companies seeking to conduct business in China, the Beijing 2008 Olympics has motivated a whole host of infrastructure investment, and the government is planning the Western Development Scheme.

**Table 4.1. Per Capita GDP for Major Cities in China**

City	Population		Estimated Per Capita GDP	
	(in millions)	GDP (2001)	Per Capita GDP (2001)	(2005)
Guangzhou	9.94	\$28 billion	\$4,600	\$7,700
Shanghai	16.74	\$60 billion	\$4,500	\$6,000
Beijing	13.82	\$34 billion	\$3,000	\$4,000
Chengdu	10.20	\$18 billion	\$1,680	\$2,500

Source: National Bureau of Statistics of China, 2001, and estimated growth for per capita GDP using official targets for 2005.

Housing prices in most cities in China have increased by an annual average of 2.5% for the past two years; with significant price increases occurring during the 1999-2000 period. The national average housing price ranges from approximately US \$362 to \$483 per square meter, or US \$34 to \$45 per square foot. Housing investment in Guangzhou, Shanghai, and Beijing have been particularly high, relative to other Chinese cities; prices in these cities also tend to be higher, averaging around \$550 per square meter, or \$51 per square foot (People's Daily, 2002a). In some of the more sought after areas of these cities, prices for new houses can run upwards of \$2,000 per square meter, or \$186 per square foot.

**Table 4.2. Average Housing Prices for Major Cities in China**

Year 2000	Average Selling Price (US \$ per m <sup>2</sup> )		
	Residential Buildings	Villas and Upscale	Economical
Beijing	552	1008	320
Shanghai	403	740	na
Guangdong	360	487	168
Sichuan	138	465	102

Source: National Bureau of Statistics of China, 2001

## 4.1 CHENGDU

Chengdu, which means “great city,” has a geographic area of 4000 km<sup>2</sup>, and is the capital city of Sichuan, the country’s second most populous province. The city has a population of approximately ten million. In 2001, Chengdu’s GDP was \$18 billion, with a per capita GDP of US \$1680, lower than many coastal cities, but higher than neighboring cities in the region (Table 4.1). Chengdu has a goal of increasing its per capita GDP to \$2500 by 2005 and to \$4000 by 2010. Chengdu has the highest density of road networks in the western region and the sixth largest airport in the country. Because of the city’s central location relative to western China, Chengdu will likely serve as the seat for much of the central government’s ambitious western development plans.

Chengdu, one of the first areas to experience agricultural reforms in the late 1970s, has only recently emerged as a strong science and technology hub; in 1998, the government established the National Chengdu Hi-tech Zone, in order to promote foreign direct investment in the region. The city now boasts research and development investment from transnational corporations like Compaq, Shell, Intel, GE, Nokia, Siemens, Mitsubishi, Ericsson and Coca Cola. In 2001, there were 66 Fortune 500 companies operating in Chengdu, with eleven of those in the Hi-Tech Zone. Fourteen international banks have operations in Chengdu, including Citibank and HSBC. In 2000, foreign direct investment in Sichuan province reached US \$220 million (Chengdu Municipal Government, 2002).<sup>2</sup> More than 300 international firms and organizations have representative offices in the province (China Daily Staff, 2000b).

In June of 2002, in an attempt to shift development from heavy industry to services, the government opened traditionally closed sectors such as telecommunications, infrastructure, and energy development to foreign investment. The government is also hoping foreign investment will enhance what it calls the six “pillar” industries: hydropower, electronic information, mechanical metallurgy, medical chemicals, tourism and food.

It is clear that Chengdu is also committed to improving the quality of life for its residents. From 1993 to 1997, Chengdu invested 3 billion RMB (US \$362 million) in solving environmental problems by reinforcing the banks and planting trees and grass along the Fujiang and Nanjiang rivers.

Housing reforms were extended to Chengdu in the early 1990s. Chengdu is heavily reliant on international and domestic sources outside Sichuan for building materials, as provincial firms are able to supply only about a third of the demand (Suen, 2000). It is estimated that high-end products comprise approximately 10-20% of Sichuan’s \$1.9 billion building material market.

In an article from Soufun.com, China’s premier online real estate network, 800 new single-family homes were being built by the group “New World Home Development” (*Xinjie Yumai*) called “Tianxia Qingcheng” “Under Heaven Green City.” The homes will all be single-family residences and many will range from 126-183 square meters; with some properties coming with 2000 square meter gardens.

### 4.1.1 Special Attractions

One particular niche to be filled is in flooring. This sector has the potential to be popular among Chengdu residents, as the city has a generally moist climate and carpets are not a first choice. Wood flooring will have to compete with other, cheaper materials such as ceramic tiles or vinyl (Suen, 2000).

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<sup>2</sup> <http://www.chengdu.gov.cn/itd/chengdu/investment/fiic.jsp>

## 4.2 SHANGHAI

Shanghai, translated as “On the Sea,” has a rich legacy and has often been called the Paris of the East or the Pearl of the Orient. Although it began as a small fishing village sometime around the 11<sup>th</sup> century, by the 18<sup>th</sup> century Shanghai had grown into the largest metropolitan area in China. After foreigners were granted concessions during the 19<sup>th</sup> century as a result of the Opium War, the city became heavily influenced by western culture and took on an international flavor. During the 1930s, Shanghai emerged as a global financial, commercial, and intellectual hub, although the city also developed a somewhat notorious reputation for gambling, drugs, and gangster activity. In 1937, the Japanese invaded China and occupied Shanghai until the end of World War II. After the Communists established the PRC in 1949, the new government seized foreign businesses and assets, forcing the withdrawal of international interests from the city for the next three decades.

Today, Shanghai residents still regard themselves as more modern and sophisticated than their fellow countrymen. Even through the Cultural Revolution, Shanghainese have always viewed themselves as being more fashionable and stylish, and likely more confident, than their comrades in the rest of the country. Indeed, Shanghai residents spend a higher percentage of their disposable incomes on consumer goods than their fellow countrymen.

The Shanghai municipality consists of fifteen urban districts, five suburban counties, 6,341 square kilometers, and has a population inching up on 17 million. As a municipality, the city enjoys provincial status. In 2001, the city’s GDP was \$60 billion and per capita GDP was \$4,500 (see Table 4.1). By 2005, this figure is expected to reach \$6,000. In 2000, Shanghai received over US \$3 billion in foreign direct investment, or almost 8% of China’s total FDI. As of June 2000, 254 of 500 Fortune 500 companies had invested or established offices in Shanghai (China Daily, 2000c).

Shanghai is one the most rapidly urbanizing and modernizing cities in mainland China. In 1990, the Pudong area just east and across the Huangpu River from downtown Shanghai was designated a Special Economic Zone (SEZ), making Shanghai once again an attractive proposition for foreign investment. In the 1990s, Shanghai underwent massive urban restructuring, as many of the industrial factories were relocated outside the city, downtown Shanghai along Nanjing Road was rebuilt, an Opera House and National Museum were constructed and the area along the Bund was renovated. In addition, a subway system is still in the process of being constructed. Recently improved 1 ring roads allow swift movement around the city.

Shanghai, well located as a port city, sits at the mouth of the Yangtze River as it flows into the ocean. Shanghai is considered the country’s main industrial city, producing steel, textiles, machinery, electrical and electronic equipment, cars, and other equipment. The city also boasts shipbuilding, oil-refining, gas-extracting, and diamond-processing operations. Many predict that if China sustains its rate of growth, Shanghai will soon replace Hong Kong as the gateway to and economic powerhouse of Asia.



**Figure 4.1. View of Pudong from the Bund**

Source: [www.orientalarchitecture.com](http://www.orientalarchitecture.com). 2002.

Shanghai has undergone significant housing reforms and upgrades over the past decade. 53% of Shanghai's present housing stock was built in the 1990s and during that time almost \$29 billion was invested in housing in the city. Between 1990 and 1997, Shanghai went from investing 2.6 billion RMB (\$306 million) annually in housing to 43.3 billion RMB (\$5.1 billion) (Shahid, 2001). According to Soufun.com, Shanghai invested 50 billion RMB (US\$6 billion) in 16 million square meters of new housing in the first half of 2002; by the end of the year, the city expected to construct 47 million m<sup>2</sup> of new residential housing, up from 15.68 million m<sup>2</sup> of new housing completed in 2001.

**Table 4.3. Estimated Housing Starts**

	2000	2001	2002	2003
Shanghai	209,605	236,854	267,645	302,438
Sichuan	160,648	181,532	205,131	231,799
Beijing	155,537	175,757	198,605	224,424
Guangdong	305,873	345,636	390,569	441,343

Note: Estimated using data from National Bureau of Statistics of China, 2001.

In the mid-1990s, Pudong saw a glut of construction and development in an excessive effort to meet the needs of potential international firms and expatriates. After a period of high vacancy rates, the government temporarily suspended all new construction projects to avoid further construction of buildings that would end up vacant. In 2000, the Shanghai Municipal Housing and Administration seized the rights to leasing lands for construction projects, including shopping malls and golf courses. Then in August of 2001, the Shanghai government introduced a bidding system for land-lease development projects, effectively lifting its restrictions that previously required higher bids from foreign developers. This likely will result in an increase in the construction of high-end and luxury apartments. Despite such restrictions, investment in real estate in Shanghai over the past year has been burgeoning yet again, likely to the point of creating another surplus.

In 2000, the average residential home in Shanghai sold for US \$430 per square meter, with villas and more upscale residences selling for approximately US \$740 per square meter (see Table 4.2). Total housing sales in 2001 were estimated at a value of \$9 billion and almost 18 million square meters, making the value per square meter approximately \$505.

#### **4.2.1 Special Attractions**

The Furen forest products wholesale market, located in Shanghai, maintains a large stock of hardwood products. More than half of the market's sales are in tropical species, such as mahogany, rosewood and teak, imported from Myanmar and Indonesia (Bean, 2001a). Western temperate species include European Beech and American hardwoods like cherry, walnut, oak and maple; these account for another 30% of sales. Other species come from Africa, South America and China.

#### **4.3 BEIJING**

Beijing, meaning "northern capital," is the capital city and political center of the country. With only few exceptions, Beijing has been the capital seat since the 13<sup>th</sup> Century and is rich in its cultural heritage and ancient architectural landmarks such as the Forbidden City, Temple of Heaven, Summer Palace, and the Great Wall. Although the city's image was somewhat tarnished by the events of 1989, Beijing is working hard to remake itself and will soon be better known for its Olympic games, to be held in the summer of 2008.

Beijing has a population of close to 14 million and an area of nearly 17,000 square kilometers. In 2001, the city's total Gross Domestic Product was \$34 billion (see Table 4.1). Relative to Shanghai and Guangzhou, the city lags slightly behind in per capita GDP, estimated at \$3,000 in 2001, but expected to reach \$4,000 by 2005. In 2000, Beijing received \$1.6 billion in foreign direct investment, or approximately 4% of the country's total FDI.

The Olympic events in 2008, which the city is promoting as a "green" Olympics, promise to act as a catalyst for cleaning up the city's air pollution, greening the landscape, and improving urban infrastructure. By 2007, 90% of buses and 70% of taxis in Beijing will use clean natural gas. Five new subway lines extending 114 kilometers and a light rail system to run 40 kilometers will both be completed; these new modes of transportation will help facilitate travel during the events. In the course of this campaign, Beijing plans to relocate its key industries, moving 200 industrial enterprises from the downtown area into suburban areas, and has recently adopted the current Euro 2 vehicular emission standards. The city is investing more than US \$20 billion on building the venues and infrastructure (including housing) needed for the games, and \$12 billion on improving the environment alone (Beijing Olympic Committee, 2002).

Some of the more popular and expensive residential areas that have emerged in recent years in Beijing include the Haidian, Chaoyang, Dongcheng, and Xicheng districts. Home prices in Beijing ran quite high in 2000; the average residence sold for US \$552 per square meter, with villas and more upscale luxury apartment selling for US \$1008 per square meter (see Table 4.2). During the fourth quarter of the year, rents for foreign-sales luxury apartments reached an average \$19 per square meter. Also during the last quarter of 2001, average rents for serviced luxury apartments reached nearly \$29 per square meter, a 27% increase year on year (Colliers Jardine Staff, 2001).

As of September 2002, Beijing abolished the dual price system for housing, which required higher prices for foreigners purchasing homes in the capital. This will follow the example of Shanghai, which abolished its dual price system in 2001.

#### **4.4 GUANGZHOU**

While modern development of Guangzhou has mainly been a result of synergistic effects from of the development of neighboring Hong Kong, Guangzhou has long been an important trading port. Guangzhou, sitting at the heart of the Pearl River Delta, has a geographic area of approximately 7,435 square kilometers and is the capital of the Guangdong province. The region's general proximity to Hong Kong and the SEZ city, Shenzhen, has made it one of the largest recipients of foreign direct investment and one the fastest growing economies and richest cities in China. From 1995 to 2000, Guangzhou increased its GDP by an average annual rate of 13.1 % and has a target annual growth of 12 % over the next five years. Per capita GDP is expected to exceed US \$7,700 by 2005 (China Daily Staff, 2001d). The information industry, foreign trade, and services are all major contributors to Guangzhou's economy. In 2000, 59 Fortune 500 companies were already operating in the city (China Daily Staff, 2000c).

The city has a population of nearly 10 million, a gross domestic product of US \$28 billion in 2001, and at \$4,600, one of the highest per capita GDPs in the country (see Table 4.1). Guangzhou, like most of the larger cities in China, has several ring roads to allow fluid movement around the city. In 2000, the Guangdong province alone received US \$11.2 billion in FDI, accounting for nearly 28% of the country's total foreign direct investment.

In 1985, 1148 households in Guangzhou lived in "public housing," 90 rented, and 344 owned their residences. In 2000, that ratio had nearly flipped: 264 lived in public housing, 24 rented, 1120 owned their own housing, and 192 lived in a recently created "partially-owned" housing category (National Bureau of Statistics, 2001b). Guangzhou was one of the first cities to participate in housing reform experiments during the early 1980s and to benefit from the development of personal credit in the form of housing loans.

#### **4.4.1 Special Attractions**

Guangdong Province, as one of China's key ports, is a large importer of wood products. In 2001, timber imports into the port of Guangdong in 2001 accounted for nearly a third of China's total wood imports, among which lumber accounted for half that amount and logs for another 17%. Guangdong is one of the most productive areas in China for furniture and other value-added wood products, with most of the production centered in the cities of Shenzhen, Zhongshan, Shunde, and Dongguan. Dongguan is also known for its Xingye timber and plywood market, home to some 160 dealers of domestic and imported timber and plywood.

## **5.0 CHINA'S BUILDING MATERIALS AND SECONDARY WOOD PRODUCTS INDUSTRIAL SECTOR**

### **5.1 DOMESTIC SUPPLY AND CONSTRAINTS**

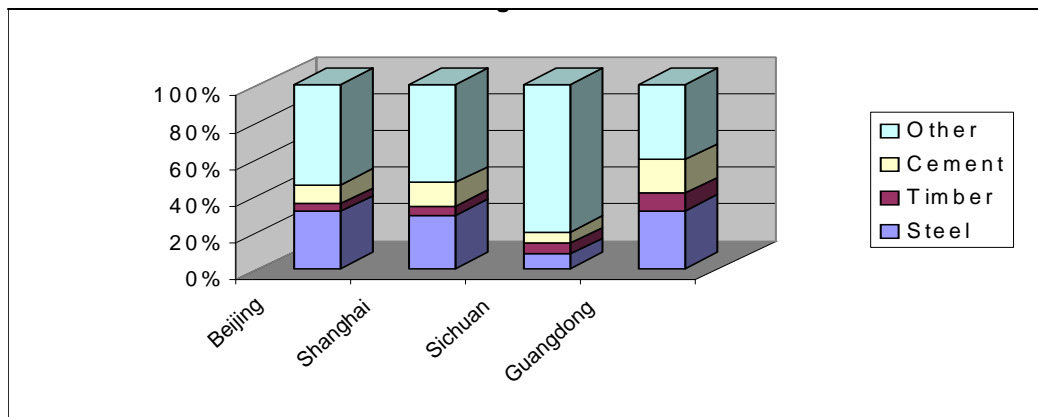
Forests and their potential resources have long been a matter of concern to the Chinese government. When the Communists established power in 1949 an early goal was to improve forest coverage from a meager 8.6% of total land area (Zhang, 2001). Over the years total forest coverage increased, but Mao's manic drive for industrialization and inappropriate management of resources in the 1950s and 1960s resulted in the over extraction of forest resources, predominately from virgin or natural forest areas, often used as fuel wood to support industry and manufacturing.

Today forests are owned either by the central government, province, or collective, and still generally tend to be inefficiently managed. Private ownership of forested areas was permitted until the early 1950s, but land reform campaigns quickly led to collectivization. The contributions of economies of scale by the communes lent well to efficient and rapid logging of naturally forested areas; local officials encouraged unsustainably heavy logging in exchange for immediate economic benefits. Prices were determined by the state; timber producers did not receive true market value for their products and were rewarded instead for their ability to fill production quotas (World Bank Staff, 2000). Even through the reform era the state has maintained ownership and management of industries related to the natural resource extraction. It is unlikely that forests will be privatized in the foreseeable future.

Immediately after a series of devastating floods killed several thousand people along the upper reaches of the Yangtze River in 1998, the government imposed a logging ban, froze construction on officially designated forested lands for at least one year, and required that any new projects obtain cabinet level approval. In 1999 Beijing developed the Natural Forest Conservation Plan (NFCP), which ensured the protection of 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 for additional protection of collectively owned natural forests under provincial jurisdiction. The government also launched the "Green for Grain" programs in 1999 to compensate farmers for growing trees instead of planting high-yield crops.

It is evident that even before China imposed the 1998 ban its timber supply was severely constrained by a lack of domestic resources. According the fifth national survey of forestland conducted from 1994 to 1998, China had about 160 million hectares of forested areas, and more than 11 billion m<sup>3</sup> in forest stock. Although total land supposedly designated as forestland is almost 27%, forest coverage is actually only about 16.6% of total land area, far less than the global average of approximately 26%. Per capita forest coverage is equal to about 0.13 hectares, compared to the world average of approximately 0.6 hectares per capita.

China's main timber producing forests are located in three key areas: 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 three areas comprise nearly 90% of China's total growing stock. Even with the restrictions that have been imposed in recent years the wood products industry continues to play an important role in the country's economy as forest products account for approximately 8% of China's total GDP (Chen, 2001). Industrial roundwood production in 2001 was 51 million m<sup>3</sup>. China's main species include Chinese Fir, Southern Pines, Masson Pine, Larch, Eucalyptus, Poplar, Natural Hardwoods, and Natural Softwoods. China has approximately 113 million hectares of naturally forested areas and 46 million hectares of plantation forests.



**Figure 5.1. Value of Building Materials as a Percentage of Total in 2000**

Source: National Bureau of Statistics of China, 2001

In 2000, total domestic demand for wood products in China was almost 80 million m<sup>3</sup>, and the value of timber as a building material was worth approximately US \$4.2 billion. Predictions for the wood and forest products market expect demand to increase to 250 million m<sup>3</sup> by the end of 2002, but do not foresee major fluctuations in coming years (FAS, 2002). Chinese consumers generally tend to show a preference for American imports, but the general public is still unable to purchase expensive imports and most Chinese are price sensitive.

### 5.1.1 Building Materials

Because steel and concrete are the primary building materials in China (Figure 5.1), the greatest potential for immediate growth in wood consumption is likely to be in non-structural building materials, interior decoration, and furniture. Building and decorations material consumption are expected to continue development at a rate of 15-30% annually over the next five years, and the total annual volume of interior decoration and refurbishing work will also likely grow from \$24 billion to \$71 billion between 2001 through 2005 (Department of State Staff, 2001).

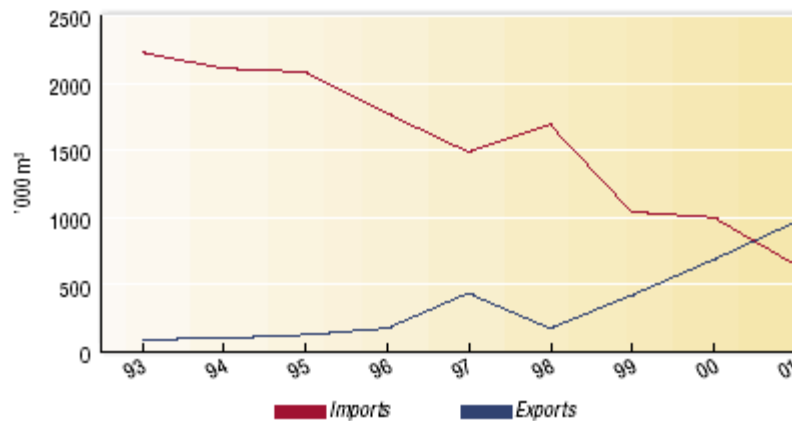
Until last year, the average homebuyer purchased not a finished home but an empty shell home (*maopei*), and was responsible for finishing the home him or herself. This, in addition to the increased number of hotels and firms building new office space, has created a large market for imports of non-structural and secondary wood products such as flooring, cabinets, and furniture, as well as for the Do-It-Yourself distributors.

The domestic furniture industry is able to supply the majority of China's furniture demand. These firms are on the whole privately owned and are increasing output by as much as 20% per year (Bean, 2001b). Although manufacturers are seeking alternatives to wood for materials in their furniture, wood currently comprises approximately 70% of the materials used in furniture (Bean, 2001b).

## 5.1.2 Industry Sectors

### *Plywood Mills*

According to World Trade Atlas data, China's production of plywood and veneers in 2001 increased by nearly 160% over 2000, bringing the value of production up from \$99,000 to \$256,000. China has become a net exporter of plywood, a dramatic turnaround from even just four years ago. Imports of plywood went from around 1.7 million m<sup>3</sup> in 1998 to a mere 650,000 m<sup>3</sup> in 2001 (Figure 5.2). Exports of plywood, by contrast, rose dramatically from less than 200,000 m<sup>3</sup> in 1998 to almost 1 million m<sup>3</sup> in 2001. Korea, Hong Kong, Japan, US, Taiwan were all destinations for Chinese plywood. 2002 data shows that plywood exports are rising ever faster.



**Figure 5.2. China's Export and Import of Plywood, 1993-2001**

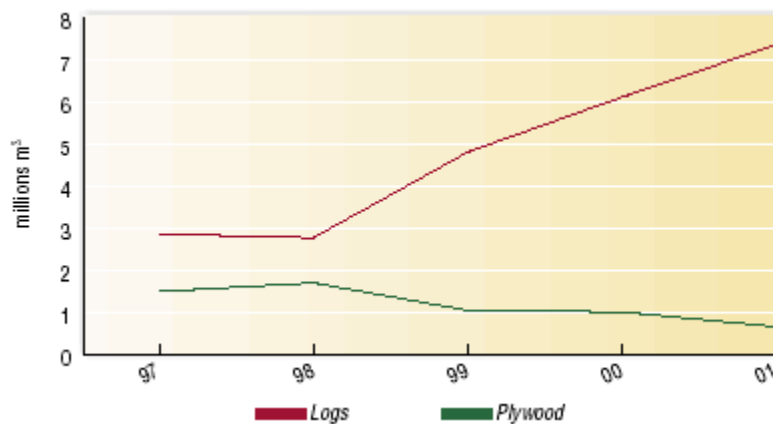
Source: ITTO Staff, 2002.

The tropical timber plywood industry in China gained a competitive advantage over the low-cost Indonesian and Malaysia plywood when the Chinese government removed log import tariffs and took a hard line stance on plywood smuggling. This reversed the creeping decline in log imports (Figure 5.3). By 2001 the volume of tropical log imports had more than doubled and the Chinese industry began to export substantial volumes of plywood. In addition, joint ventures created with foreign enterprises and new technology investments drove many of the old SOE and smaller mills out of business, creating consolidation which much strengthened the industry. As always, reliable statistics on the China's plywood production are difficult to ascertain, but according to State Forestry Administration data it amounted to almost 10 million m<sup>3</sup> in 2000. The heart of the industry is in Zhejiang Province which has more than 200 mills and an annual capacity of about a third of the nation's total plywood production capacity.

**Figure 5.3. Volume of Chinese tropical log and tropical plywood imports, 1997–2001**

Source: ITTO Staff, 2002

Describing the rapid growth in the plywood industry, the ITTO writes:



“According to recent statistics, China produced 21.1 million cubic metres of various wood-based panels in 2001, a level second only to the US production. Wood-based panel imports came to 1.9 million cubic metres while exports were 1.1 million cubic metres. The negative balance of trade was 802,300 cubic metres. However, there is a big difference in the trade depending on the various wood-based panels. Plywood exports amounted to 965,400 cubic metres or 89.4% of China's total wood-based panel exports in 2001. Exports of other wood-based panels were only 114,100 cubic metres, including: 62,300 cubic metres of veneer, 26,800 cubic metres of fiberboard and 25,000 cubic metres of particleboard. This illustrates the substantial increase in plywood exports.

China imported 1.9 million cubic metres of various wood-based panels in 2001, of which plywood, was 650,900 cubic metres veneer 335 700 cubic metres and particleboard 447 600 cubic metres. The statistics show that the increasing proportion of fiberboard and particleboard imports was the main reason for unfavorable balance trade of wood-based panel.

According to local analysts, one of the main reasons for the continued increase in particleboard imports was the rapidly growing demand for composite flooring material in the domestic markets in recent years.” (ITTO Tropical Timber Market Report November 16 – 30, 2002)

#### *Chinese Plywood now being exported to Japan and Europe*

Japan has been one of the surprising recipients of Chinese plywood exports. According to trade statistics, Japan's imports from China more than doubled over the same period last year. Japanese importers cite improved technology and greater production capacity in meeting their quality demands. More importantly, Chinese plywood has a price advantage over Indonesian plywood and Japan's domestic plywood. Most of this plywood is presently being used in packaging, however, and not as structural panels. Also noteworthy are the inroads China has been making as a significant exporter of tropical plywood to Europe (UN Economic commission for Europe, October 1, 2002 Press Release).

#### *Hardboard, MDF, and Particleboard Mills*

China is a major manufacturer of medium-density fiberboard (MDF). According to a recent report by the ITTO, China had more than 230 MDF manufacturing plants and a production capacity of almost eight million m<sup>3</sup> by June 2001 (ITTO Staff, 2002). Most of China's panel-producing firms are small, with less than 30,000 m<sup>3</sup> annual capacity. It is likely that as China begins to shift domestic production to plantation sourced material resources there will be increased production of panels made from lower-quality, younger trees.

### *Furniture Industry*

China's domestic furniture industry is quite well developed, with almost 30,000 manufacturers across the country. China is not only an importer of furniture, it is also an exporter, and in 1999 exported \$1.9 billion worth of furniture to the US alone (Bean, 2001b). In 2001, industry revenues totaled \$16.87 billion and are expected to grow by 10-12% over the next year (FAS, 2002). Many of these firms are quite small, operating in township or village enterprise (TVE) form, with annual sales of less than \$120,000 (Sun, 1999). Many of the smaller firms are located in the southern provinces, while the larger firms tend to be located in the northern regions.

Tariffs are not as high for wood when it comes in commodity form for export. Exports of furniture have grown from \$48.5 million in 1990 to \$3.6 billion in 2000 (Zhu, 2002).

### *Flooring, Moldings, and Millwork*

According to FAS, there are currently 5,000 solid wood flooring manufacturers with an annual capacity of 40 million m<sup>3</sup> and 100 composite flooring manufacturers. China also has a strong laminated flooring industry, which exports most of its annual 12 million m<sup>3</sup> production. Projected growth for both solid wood and laminated manufacturers is expected to reach between 50 and 100% over the next several years. Domestic sales of Chinese produced flooring, siding, and moldings reached \$37,000, increasing from almost nothing during the previous year.

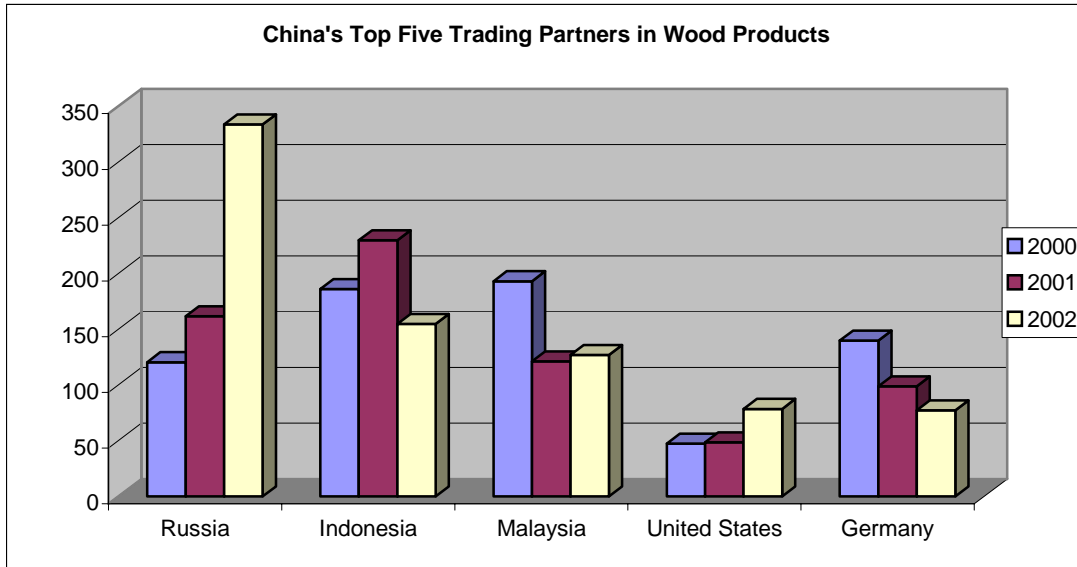
## **5.2 IMPORTS OF FOREST PRODUCTS AND BUILDING MATERIALS**

With a per capita demand for wood products of .12 m<sup>3</sup>, China has just a fifth of the global average, yet the sheer size of the country's population made it the largest importer of wood products last year. From 1990 to 2001 solid wood imports increased in value from \$800 million to \$3.5 billion. In 1995 China imported approximately 2.4 million cubic meters of wood; if China adheres to its logging quota, it will have to import nearly 27 million cubic meters in 2002 alone. In 2001 the greatest increases in imports came in the form of softwood logs, lumber, poles and veneer, hardwood chips, medium-density fiberboard, and pulpwood. The greatest decreases in imports came in railway ties, hardwood veneer, and tropical hardwood plywood (Table 5.1).

**Table 5.1. Chinese Imports of Major Wood Products (1,000 CM / MT)**

	<b>Units</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Softwood Logs	1,000CM	930	1480	4545	6398	9142
Tropical Hardwood Logs	1,000CM	1020	1083	1943	2408	2731
Temperate Hardwood Logs		28	110	3613	4803	4990
Hardwood Logs	1,000CM	1048	1193	5556	7211	0
Softwood Lumber	1,000CM	303	398	393	12014	640
Temperate Hardwood Lumber	1,000CM	833	1041	1978	19225	2698
Tropical Hardwood Lumber	1,000CM	189	238	349	31239	702
Hardwood Lumber	1,000CM	1022	1279	2327	50464	3400
Softwood Plywood	1,000CM	635	842	477	81703	162
Temperate Hardwood Plywood	1,000CM	11	21	52	132167	91
Tropical Hardwood Plywood	1,000CM	237	324	176	213870	76
Hardwood Plywood	1,000CM	248	345	228	346037	167
Fiberboard	MT	323978	400676	556359	559907	749095
MDF	MT	33725	51711	131856	905944	342634
Continuously Shaped Wood	MT	0	0	24799	1465851	13000
Particleboard	MT	96109	101614	161295	2371795	250939
Poles	MT	19548	16105	22379	3837646	27846
Pulpwood	1,000MT	2004	310	2955	6209441	4676680
Railway Ties	1,000CM	4	12	36	1047087	18
Veneer	MT	340522	402256	480969	16256528	250079
Wood Chips	MT	2060	1522	1030	26303615	3596

Source: FAS, 2002



**Figure 5.4. China's Top Five Trading Partners in Wood Products.**

Source: World Trade Atlas, 2002.

Russia has been the greatest beneficiary of the increased imports of softwood logs and lumber by China. The value of Russia's wood exports to China in 2001 increased by 53% over 2000, followed by the US, which experienced an overall increase of 18.6%. Many of China's other leading partners for trade in wood products actually experienced decreases in the value of their exports, with Germany experiencing a 35% decrease and Malaysia experiencing an almost 38% decrease. Indonesia's exports fell by a little less than 3% (Figure 5.4).

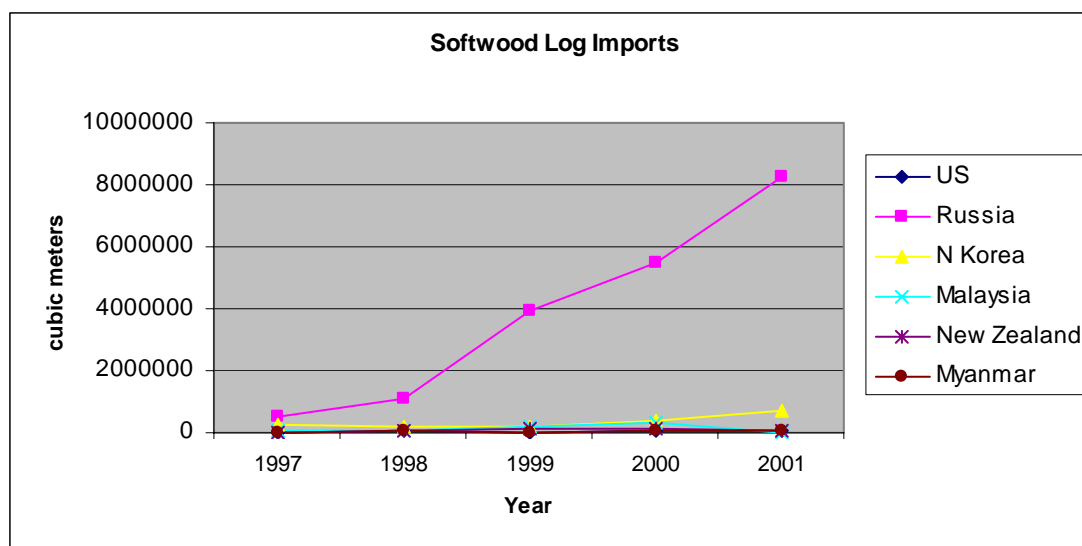
**Table 5.2. Chinese Imports of Wood Products from the United States, 1997-2001.**

<b>Imports from the United States (in 1,000 dollars)</b>					
	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Softwood Logs	11,027	8,714	2,346	5,786	10,662
Hardwood Logs	2,831	2,622	5,440	12,376	28,865
Softwood Lumber	1,712	1,297	1,213	2,322	12,624
Hardwood Lumber	16,901	13,960	29,904	54,156	59,399
Softwood Plywood	63	84	307	271	0
Hardwood Plywood	59	323	185	376	258
OSB/Waferboard	20	7	0	115	4
MDF	427	63	63	368	660
Particleboard	522	1,341	944	481	1,400
Poles	0	16	8	29	36
Hardwood Veneer	2,661	3,331	5,487	6,972	13,084
Softwood Flooring	5	30	142	0	27
Hardwood Flooring	28	528	13	0	43
Softwood Siding	0	0	0	0	35
Softwood Molding	0	80	26	0	0
Hardwood Molding	0	6	21	0	3
<b>Total</b>	<b>44,064</b>	<b>36,669</b>	<b>51,357</b>	<b>90,166</b>	<b>131,861</b>

Source: FAS, 2002.

The United States is among China's top five trading partners in wood products, and it is expected that US exports will gain a slight lead this year over Germany's. US exports to China of wood products increased by just 2% in 2001 over 2000, but are expected to grow by more than 60% in 2002, bringing the value to close to \$79 million. Major US exports to China are hardwood lumber, logs and veneer, softwood lumber and logs. According to FAS data, the largest increase in exports over the past five years was in softwood lumber. The value of SW lumber exports grew from \$2.3 to \$12.6 million from 2000 to 2001 (Table 5.2).

## 5.2.1 Softwood Logs and Lumber



**Figure 5.5. Volume of Chinese Softwood Log Imports.**

The majority of China's imports of softwood logs and lumber come from its close neighbor, Russia (Figure 5.5). In 2001, imports from Russia totaled almost \$600 million and 8.2 million m<sup>3</sup> in softwood logs, an increase of nearly 50% over the previous year and accounting for nearly 90% of China's total softwood log imports. In 2001 the US exported only 48,530 m<sup>3</sup> in softwood logs, and although far less than the Russians it was an increase over the previous year of nearly 50%.

**Table 5.3. Value of China's Softwood Lumber Imports**

Value of Softwood Lumber Imports (\$ mil.)			
Source	2000	2001	2002
Russia	4.34	5.79	14.65
New Zealand	7.33	8.26	8.87
Indonesia	0.89	0.12	4.64
Canada	1.74	2.73	3.71
Finland	1.12	2.40	2.84
US	2.18	1.87	2.30
Chile	0.23	0.74	1.89
Myanmar	0.35	0.99	1.27
Malaysia	0.54	0.25	1.08
Sweden	1.89	1.15	0.78

Source: World Trade Atlas, 2002.

Similar to its softwood logs, most of China's softwood lumber imports come from Russia, followed by New Zealand. Russia experienced a significant increase in the amount of lumber exported to China last year (85% over the year 2000). Canada also increased its lumber exports by 40% last year. Conversely, the US decreased its lumber exports by almost 9% over the previous year.

Russian exporters clearly have several advantages. First is the lower price for softwood logs; the average price of Russian softwood logs in 2001 was \$59 per cubic meter, while US softwood logs were close to \$106 and those from New Zealand were \$63 (FAS, 2002). Second, the Russians benefit from “small trade deals” tariff and tax benefits. It is more difficult to keep track of imports over land ports than at larger seaports. Customs statistics show that log imports for 2002 may very well double.

### 5.2.2 Hardwood Logs and Lumber

According to the American Hardwoods Export Council, total United States exports of hardwood products to China reached \$138 million in 2001, an increase of 89% over the previous year. Temperate hardwood products are the US’s major exporting wood products, valued at US \$67 million. US hardwood species that were popular in the Chinese market included ash, beech, birch, cherry, hickory, maple, red oak, yellow poplar, walnut, red alder, and white oak. Other popular products are logs and veneer.

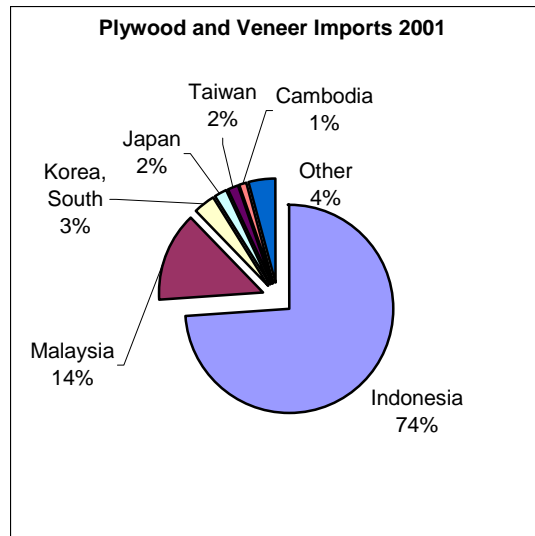
**Table 5.4. Temperate and Tropical Hardwood Lumber Imports (in cubic meters)**

Source	2000	2001	% Change
Indonesia	969,430	1,212,577	25.08%
Malaysia	530,773	424,632	-20.00%
Thailand	273,188	331,771	21.44%
US	255,853	352,506	37.78%
Brazil	24,873	54,376	118.61%
Myanmar	22,076	39,684	79.76%
Germany	207,190	223,745	7.99%
<b>Grand Total</b>	<b>2,283,383</b>	<b>2,639,291</b>	<b>15.59%</b>

Source: FAS, 2002

According to the ITTO, China continues to be the largest importer of tropical logs, lumber, and veneer. Between 1998 and 2001, tropical log imports more than doubled due in large part to the removal of tariffs on log imports (Adams, 2002).

### 5.2.3 Structural Panels



**Figure 5.6. China's Plywood and Veneer Imports, 2001**

Source: World Trade Atlas, 2002.

There is potential for a very sizable panel market in China; the Chinese have already developed a high demand for reconstituted panels. Of the total demand for structural wood materials, panels has grown from approximately 15% in 1990 to more than 40% in 2000, sharing the other 60% with lumber. Total imports of plywood for 2001 were valued at US \$60 million, a 46% decrease over the previous year, indicating further development of domestic production. Nearly 74% of imports in 2001 came from Indonesia, valued at US \$44 million; Malaysia was China's second largest supplier, with a 14% market share and exports valued at US \$8.5 million (Figure 5.6). While China's Southeast Asian suppliers maintained the largest market share, they experienced a net decrease in their exports to the mainland. Countries like Denmark, Canada, the US and Switzerland experienced significant increases in their exports of structural panels. Exports from the US of plywood and veneer increased by 81% in 2001 over 2000. Exports during this period decreased initially from \$62,000 in 2000 to \$55,000 in 2001 and likely will increase dramatically to \$99,000 in 2002 (World Trade Atlas, 2002).

### 5.2.4 Furniture

China has a well-developed furniture industry, and most trade in this sector is in exports. Much of the import volume in hardwood logs are converted into furniture for export. Most imports were high-end, luxury items. While normal tariffs are being reduced on imports of furniture, they are still currently around 22%, giving Chinese low-cost producers a comparative advantage.

### 5.2.5 Doors and Windows

Imports of wood window sashes (441810) have increased overall during the past three years. In 2000 total imports of wood windows were valued at just US \$1.095 million. In 2001 they increased to \$1.96 million, but are expected to continue to rise in 2002 (World Trade Atlas, 2002).

While imports of wood window frames have increased overall, imports of wood doors and their frames (441820) have declined overall. Imports in 2000 were US \$1.52 million, decreased to \$1.41 mill in 2001 (World Trade Atlas, 2002).

## 5.2.6 Moldings and Flooring

In general, Chinese demand is higher for hardwood flooring and molding than for softwood flooring and molding. The total value of imports of continuously shaped hardwoods has decreased from approximately \$1.7 million in 2000 to \$1.4 million in 2001, but is expected to increase to nearly \$2 million in 2002 (Table 5.5). China's continuously shaped softwood products come predominately from European countries like Sweden and Finland, followed by Italy, the Netherlands, and Canada (Table 5.6).

**Table 5.5. Value of Imports of Hardwood Flooring, Siding and Molding (in millions USD)**

Source	2000	2001	2002
Malaysia	0.4217	0.4521	0.6567
Indonesia	0.9030	0.6338	0.5176
Thailand	0.0453	0.0058	0.1563
Italy	0	0.0011	0.1280
Taiwan	0.0552	0.1085	0.1039
Germany	0.1304	0.1113	0.0969
Canada	0.0181	0.0394	0.0959
Myanmar	0.0368	0.0192	0.0923
United States	0.0204	0.0264	0.0675
Japan	0.0340	0.0403	0.0661

Source: World Trade Atlas, 2002.

**Table 5.6. Value of Softwood Flooring Siding and Molding Imports (in millions USD)**

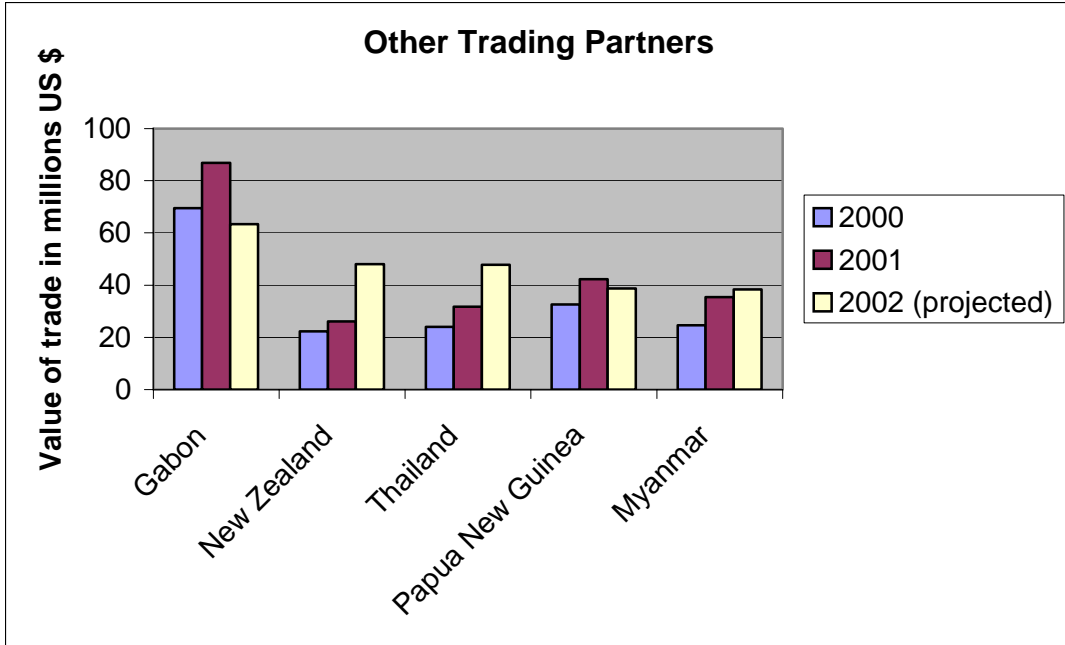
Source	2000	2001	2002
Sweden	0.0399	0.0012	0.5363
Finland	0.0083	0.0202	0.0447
Italy	0.0134	0.0051	0.0067
Netherlands	0.0025	0.0006	0.0029
Canada	0.0310	0	0.0008

Source: World Trade Atlas, 2002.

## 5.2.7 Imports from Other Regions – South East Asia, Europe, New Zealand

China's other top trading partners, in addition to those described above, include Gabon, New Zealand, Thailand, Papua New Guinea, and Myanmar (Burma) (Figure 5.7). Gabon's exports increased in 2001 by 25%, but are projected to decrease by 27% in 2002. New Zealand's exports increased by 17% in 2001 over 2000, and are projected to increase by 84% in 2002 over 2001. Thailand also increased in 2001 over 2000 by 32% and will increase an additional 51% in 2002. Papua New Guinea's exports increased in 2001 by 30%, but will decrease moderately this year by 8%. Myanmar is experiencing an overall increase, having stepped up its exports in 2001 by 40% over 2000 and only slightly this year by 8%. The Chinese are reportedly in negotiations to invest in various plantations in New Zealand; meanwhile the New Zealand government continues to heavily lobby the Chinese government.

**Figure 5.7. China's other important trading partners: South East Asia, Europe, New Zealand**

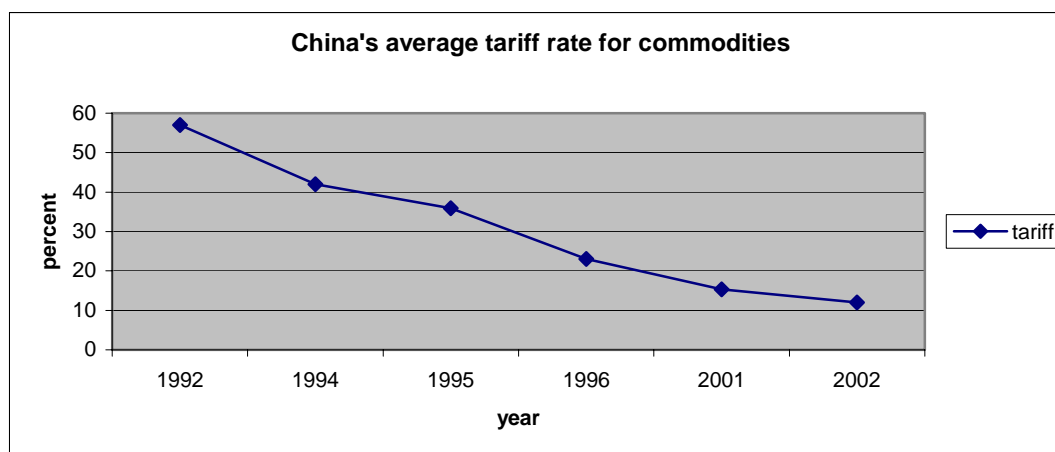


Canada's exports increased in 2001 by 52% and will do so again by 24% in 2002. As China's demand for tropical wood soars, equatorial countries are seeing their exports rise dramatically. Brazil's exports increased by 99% in 2001 and will go up again by an additional 13% in 2002. Liberia, while its share of exports remains marginal, significantly increased its exports both in 2001 by 127% and 2002 by 125%. Congo has also experienced a significant increase. In 2001, exports went up by 143% and will increase in 2002 by 934%. The value will increase from US \$1.5 million to \$15 million.

## 6.0 WTO – IMPACT ON FOREST PRODUCTS TRADE AND HOUSING OF CHINA’S ENTRY INTO WTO

### 6.1 TARIFFS: CURRENT AND FUTURE

Just ten years ago China’s tariff rates were prohibitively high, but over the past decade the government began gradually lowering tariffs from an average rate of 57% in 1992 to about 23% in 1996 for most commodities (Figure 6.1). Within two years of accession to the World Trade Organization (early 2004), most tariffs on all commodities will drop to an average of 15%, with some dropping closer to zero.



**Figure 6.1. China’s Average Tariff Rate for Commodities.**

Before China became a formal member of the World Trade Organization on December 11, 2001 there had been much talk about potential trade impacts. Aside from the generally favorable market access opportunities afforded by improved transparency, elimination of industrial and domestic subsidies, embracement of science rather than politics for its phytosanitary customs laws and the adoption of impartial dispute settlement of trade-related issues, very little discussion actually focused on the impact of membership related specifically to forest products and building products. In sum, China’s WTO commitment is to tariff-only import control. In principle, all non-tariff barriers to wood products will be dropped. Below is a quick summary of forest product impacts.

*Tariff Reduction:* China will reduce its tariffs on wood and wood products from an average tariff of 10.6 percent to 3.8 percent. Reductions will be fully implemented by January 1, 2004. Tariffs on value added products will drop even more significantly. It is expected that tariffs on furniture will drop sharply, possibly to between 2 and 15% over the next several years. Tariffs on logs, lumber, and engineered wood products will be completely eliminated, and tariffs on products such as kitchen cabinets and other small products will drop from 21% to zero. Construction materials will drop from 18-21% to 4-7.5%. Packaging and pallets will drop from 18 to 7.5%.

*Uniform Tariff Treatment:* US exports will receive the same uniform tariff treatment as all other countries. Any preferential tariff rates applied under a free-trade area must also be applied to the US.

*Uniform Tax Treatment:* Tax treatment of foreign invested firms will be the same as Chinese firms. National, provincial, and local taxes will be levied uniformly.

*Phase-out of Designated Trading Companies:* To date China has restricted both the number of companies and the types of goods that can be traded. Wood products were subject to further restrictions. After China's accession, the number of enterprises in China permitted to import and export wood products will be increased over a three-year transition period. At the end of this period, all companies in or outside of China will be able to import and export all wood products.

*Open Distribution: Prohibitions which restricted foreign companies from distributing products through wholesale and retail systems in China will be phased out over three years for wood and other products. (See FAS Beijing Timber Market Report dated December 2001; <http://www.fas.usda.gov/>)*

*Import Procedures and Inspections Standardized:* China will unify its certification systems so that all domestic and foreign products will be inspected according to the same standards.

*Custom Procedures Will Be Unified:* To combat regional protectionism, China agrees to significantly reduce paperwork (and therefore costs) for exporters and importers by not only simplifying customs and licensing procedures but by making them uniform throughout China as well.

Other important issues to watch:

*Building Materials Retail or Big Box Impact?* A pre-WTO US/China agreement clarifies the requirement that foreign investors will only be allowed minority ownership of chain stores with more than 30 stores.

*SEZ Large Influence on Import/Export Trade May Wane?* Under the WTO, Special Economic Zones such as Shenzhen will no longer receive regional specific considerations as they have in the past.

*Increased Social and Labor Mobility?* To absorb the millions of people unemployed due to WTO membership and increased agricultural imports, the Chinese government has announced that the Hukou household registration system will be changed. This will potentially cause a surge in the eastern urban population and spur an even larger demand for housing.

*"Small Trade" Deals on Land Border Trade:* Despite dramatic drops in the common tariff rates, there are other forms of taxes, such as the Value-Added Tax (VAT). The VAT rate for most value-added imports is 17%, and 13% for unprocessed goods. However, the VAT is inconsistently applied and neighboring countries, like Russia, receive preferential treatment and are charged only half the tax and VAT when they engage in small deals imported through land borders. Importers therefore pay only 6.5% VAT for logs and 8.5% for sawnwood/pulp and other processed products (Ye, 2002). Some reports state that the government has officially rescinded this policy, but there is still some confusion at actual ports-of-entry on the status of the policy, and the tariff is unevenly implemented (FAS, 2002). Raw imports and wood products processed in China for export are exempt from the VAT.

*Other Impacts:* Because most of the post-WTO accession changes will come in the services sector, there will be a tremendous increase in foreign cooperation in areas such as architecture, design, interior decoration, and real estate development. One should heed caution however; despite general optimism surrounding China joining the WTO, there are concerns about Beijing's capacity to implement the country's stated commitment on enforcing organizational rules. There has been skepticism about local official's own interpretations of regulations, interpretations that may not be compatible with the organization (Chang, 2001).

## **7.0 DISTRIBUTION**

### **7.1 DIRECT SELLING AND TRADING COMPANIES**

Because China did not permit direct selling for most of the twentieth century, state trading companies (STCs) acted as the link between Chinese and foreign firms. However, membership in the WTO is forcing a change in this policy. In 1998, government lifted STC control over dealing in international trade for forest products, allowing any company engaging in trade to import or export wood products (which is not to say any company could import or export). The Ministry of Foreign Trade and Cooperation (MOFTEC) has loosened its restrictions on import licensing and firms can now be granted approval as long as they have a certain amount of registered capital. Local agents, the next intermediary after the trading company, arrange the distribution and marketing of products once they are imported; these agents have become ubiquitous and, unless a firm has in-country representation, are necessary for exporting to China.

Within three years of its accession to the WTO, China will fully permit direct engagement and open distribution between foreign firms and domestic customers. WTO accession will require China to liberalize its retail distribution markets, allowing retail, wholesale stores, and other forms of direct sales within three years of accession.

HBF and the Austrian furniture manufacturer Svoboda have already established production facilities in China. IKEA has stores in Shanghai and Beijing, and mostly sells products built in China.

### **7.2 BIG BOXES VS. OTHER CHANNELS**

Several Do-it-Yourself (DIY) stores have been successful in the Chinese market. The British company B&Q has opened eight stores in mainland China, with four stores in the Shanghai area alone (FAS, 2002). The chain plans to have 58 stores in China by 2006. B&Q carries hardwood and softwood lumber and plywood imported from the US (US FPI, 2001). OBI, a German DIY chain, has also opened four stores in China. There are two in Shanghai, and one each in Nanjing and Wuxi, Jiangsu Province. HomeWay, a domestic company, has opened stores in Tianjin and Beijing. Another company that has recently entered the big box domain is Orient Home, which has opened seven stores including ones in Beijing, Shanghai and Dalian. Most of the products sold at Orient Home are manufactured domestically.

In China, virtually everything is available through small street-side stores, and wood products are no exception. Small, hole-in-the-wall type stores carry everything from doors and windows to toilets, all of this can be made available on the street.

Distribution in China is complex; effective and efficient in some areas, and almost non-existent in others. Some areas of China are better equipped with the infrastructure to transport goods across the country. There are 11,000 kilometers of road networks in China, and road transportation accounts for up to 76% of all transportation volume.

According to a State Department report, although China does not yet have any laws specifically addressing franchising, foreign companies that are establishing retail outlets arrange management partnerships with Chinese firms or sell to a domestic franchisee, who then manages and oversees the franchises (US Department of State Staff, 2001). Within three years of WTO accession, all restrictions on equity share, number of outlets, and location are to be eliminated.

## 8.0 DOING BUSINESS IN CHINA

### 8.1 BUSINESS PRACTICES

Doing business in China is not simply doing business as usual. China is heavily influenced, even today, by the lessons it learned during the 19<sup>th</sup> century and early part of the 20<sup>th</sup> century: first, that contact with the West can be harmful and must be managed with care; and second, that a strong government is essential to protecting national interests and promoting economic development. These issues still influence Chinese economic policies and interactions with westerners, as demonstrated by the Chinese reactions to the accidental bombing of the Chinese embassy in Belgrade in 1999 and the spy plane incident in 2001.

Many foreigners easily become frustrated with the Chinese style of conducting business. There is a strong emphasis on personal connections (*guanxi*) and relying on “old friends” (*lao pengyou*), relatives and acquaintances to fill needs before involving strangers. Chinese firms express disappointment with American firms too preoccupied with making a quick profit, and believe that establishing close working relationships is key to conducting business (Crump, 2001). Business will often be conducted over banquets or social events, and those planning to operate in China should expect to build long relationships with their Chinese counterparts. Foreigners will often complain of corruption or the bureaucratic nature of conducting business in China. It is important to remain flexible and to anticipate delays and to remain calm in the face of them.

This is hardly the venue for discussing how to bargain or negotiate with the Chinese, how to avoid making your Chinese counterpart “lose face,” but anyone conducting business in China should be prepared to learn how to avoid blunt language and aggressive behavior in their relationships with the Chinese, sometimes in favor of roundabout and often indirect approaches or responses. Impeding effective communication are language barrier difficulties; it is important to find someone who speaks fluent English and Chinese and understands the subtleties of both languages. Learning a few words of spoken Chinese will also take a project manager a long way in impressing his Chinese counterpart.

Lucien Pye, a noted China sociologist, has commented that foreign traders are often more influenced by what they want to see in China for market potential, and can be blind sighted by “dreams of the future” (Pye, 1992). It is important to follow up on any deals you may have made in China, and to perform your “due diligence.” It is recommended that firm representatives take the time and care to establish and confirm common goals for the project; once established, they should get agreements in writing, so as to avoid any unpleasant consequences (Sommers, 2002).

In a CINTRAFOR study published last year, it was found that foreign companies who successfully entered the wood product market in China strategically used competitive advantages specific to their firm to overcome entry barriers (Crump, 2001). They customized products to Chinese preferences, adjusted their payment schedules to conform to Chinese banks, increased their in-country presence, and increased their marketing plans to take advantage of the government’s green building policies.

Further reading on Chinese culture and China’s relationship with the west is strongly recommended.

### 8.2 LEGAL FRAMEWORK

China is only beginning to develop a transparent legal system. Although China has a long history of developing laws and regulations, the legal system, throughout both the dynastic period and the modern era, has traditionally been highly politicized and interpretation of laws has often been subject to either current Imperial or Party dictates (Turner, 2000).

Judges do not necessarily have legal expertise or backgrounds and are appointed by the local governments. Corruption at all levels is still a massive problem. The government has exhibited a relatively high level of commitment to cracking down on corrupt officials, and has severely punished them, liberally doling out the death penalty to corrupt members of the bureaucracy. While many advocates of China point to the successes in reforming China's legal and judicial framework, there are also many skeptics who argue that although China has enacted laws and is becoming a more "rule-based" society, that doesn't mean the rules or laws are actually being followed (FEER, 2002).

Chinese laws are often written in very vague terms so that officials have flexibility in interpreting their application. While common law equity jurisprudence in civil code systems provides for some level of discretion on the part of judges in the advanced industrial countries, the level of such discretion in China has been virtually unlimited. It is often difficult for individuals to interpret from the Chinese legal canon a discernible set of "rights". If a Chinese were to find himself in court it would usually be in regard to criminal matters in which he is the accused.

Legal reforms began nearly 20 years ago, but the country's recent moves toward an open-market economy have hastened the process. From 1949 to 1979, the National People's Congress (NPC) passed only 23 laws, but from 1979 to 1997 it passed 324 (Staff, 1998). Two years ago, China enacted the Law of Lawyers. Today, China has more than 100,000 lawyers and 8,300 law firms, with state-funded firms accounting for 30 percent of the total (Xinhua Staff, 1998).

In the spring of 2002, the government replaced rules and regulations regarding foreign investment with a new "*Regulations for Guiding the Direction of Foreign Investment*" and the "*New Catalog for Guiding Foreign Investment in Industries*." Often, the Chinese government will list areas of development in which they "encourage" foreign investment. According to a review of the new policies by the American Chamber of Commerce in Beijing, the government no longer classifies areas as "Restricted A" and "Restricted B," but has "encourages," "prohibited," "restricted"; those that are not mentioned at all are considered "permitted."

Official approval is often required for projects in which foreign investment or ownership is involved. The new guidelines stipulate that State Council (central level) approval is required for investment projects over \$100 million; between 30 and 100 million MOFTEC approval is required, and then provincial or local authorities have jurisdiction.

Forestry, agriculture, husbandry, fishing, and related industries are encouraged investment areas (as are those that fit generally into environmental protection or restoration). Log exports of several species of trees are restricted for joint-ventures, while wholly foreign-owned firms are prohibited from exporting at all.

The decentralizing nature of the economic reforms begun twenty years ago have had unanticipated effects on the central government's overall ability to coordinate and communicate with local-level governments. Local governments were given not only the authority necessary to reform local industries, but also the power to control financial resources at the local level. What resulted was the emergence of a new bargaining power for local governments and a tendency for them to sidestep or overlook rules handed down from the central government.

The structure of the national bureaucracy also contributes to the problem. The redundancy within the bureaucracies of the many central ministries means that conflicting orders are often issued, making it nearly impossible for those at the grassroots level to comply, even when they wish to do so. The widely held perception that government officials are corrupt further undermines the central government's efforts (US Department of State, 1999).

Poor coordination is not endemic to the vertical relationship between the local and the center. China's central-level ministries often have conflicting interests, hence disputes arise.

In Sichuan there are several key areas where the government is looking for investment that could be of particular interest to those seeking to conduct wood product export and/or construction. These include:

- Forestation and introduction of fine varieties

- Comprehensive utilization of bamboo resources
- Construction and operation of highways, independent bridges and tunnels
- Development, construction and operation of scenic spots and supporting facilities

## 9.0 CONCLUSIONS

China, we conclude, is a strong market opportunity. Although there are macro-economic concerns, the policy trend still seems to be toward greater economic opportunities and continued growth. The constraints to housing component and building material exporters are still many, however.

### 9.1 CONSTRAINTS

- **Macro-economic:**
  - Alarming percentage of non-performing loans, higher percentage-wise than Japan's, causing worries about a bubble economy. Real estate sector NPLs could be substantial.
  - Rising unemployment and mismatched rural/urban economic development are a cause for concern.
- **Regulatory Constraints:**
  - Uneven implementation of WTO commitments hampering improvements in distribution for forest products.
  - Concern about the government's openness to WFC, given its limited resource base, once it achieves a measure of success.
- **Building industry lack of knowledge and consumer preferences:**
  - Having largely abandoned a once-strong tradition of building in wood, cultural "prejudices" against WFC needs to be overcome.
  - Constraints to WFC construction growth continue to be concerns over pest infestation, fire, seismic performance and durability worries.
  - Lack of information about WFC is an ongoing constraint at both the construction trades level and consumer level.
  - Relatively new wood cooperator program in China and shallow experience by US industry means that core affiliations, key industry contacts and allegiances have not yet been fully identified.
- **Sector Obstacles:**
  - High turnover in a transient construction-sector work force means that wood cooperator technology transfer programs will inevitably "leak" information and be inefficient.
  - Masonry continues to be the price-leader in residential construction with WFC being a more costly alternative.
  - Product copying, illegal grade-stamping, without understanding the association of grade-marks with structural properties, thereby compromising quality and threatening WFC in the future with a high probability of product failures.
  - Seemingly no building inspection system, compromising quality control of housing stock.

- **Business practices:**
- Oft cited corruption
- Trademark copying, illegal grade-stamping
- Knock-off products, without proper structural inspection
- Lack of legal recourse and adjudication
- Lack of transparency in distribution systems

## **9.2 SUMMARY CONCLUSION:**

The sheer size of the market and pace of economic development makes China currently one of the most attractive market opportunities for housing and building materials. Pent-up demand for quality housing stock after almost 40 years of minimal investment in housing infrastructure insures that real estate growth will continue for a time. Strong and long-running GDP growth combined with a growing, urban middle class. Naturally, harvest restrictions continue to fuel imports. Perhaps more importantly robust FDI (\$53 billion in 2002 with over \$80 billion more promised) contributing new technology and increased plant capacity in the wood processing sector are fueling even more imports. The growing exports of furniture and other products are drawing in a variety of wood species. While success in China's non-wood-based housing culture is far from assured, programs for technology transfer of wood frame construction building technologies are being put into place. In addition, there is a large market for non-structural building materials already in place.

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