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# ***China's Wood Furniture Manufacturing Industry: Industrial Cluster and Export Competitiveness***

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**Abstract:** China is the largest furniture exporter in the world. Its wood furniture industry has become an important part of the country's forestry economic development. Hence, investigating China's furniture industry cluster and export competitiveness is favorable for the sustainable development of China's forestry industry. This study indicates that, under the guidance of the export-oriented strategy of China's reform and opening up for 30 years, the country's furniture industry has formed three big industry areas, namely, the Eastern Pearl River Delta, the Yangtze River Delta, and the Bohai Rim Region. As the strategy shifts from export orientation to a focus on domestic demand, the Midwest area will take over China's industrial transfer. At present, China's furniture products have an important position in the world market. In 2010, furniture exports accounted for 27% of the world's total exports, with wood furniture accounting for \$10.6 billion worth of exports, or 58% of China's total exports of furniture. Among the main export markets, the United States accounted for 39% of China's total exports. In terms of international furniture trade, an important mutual influence exists between China and the United States. China's office furniture and kitchen furniture have price advantages, whereas the bedroom furniture lacks price advantages. The production and export of mahogany furniture face the pressure of raw material shortage because of the protection of tropical forest resources. Hence, this challenge puts China's furniture industry in future competition from emerging countries such as Malaysia.

**Keywords:** wood furniture manufacturing industry; industry cluster; export competitiveness

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China's State Forestry Administration put forward a strategy of forestry industrial structure adjustment in 2000. The emphasis of the forestry primary industry is zoology forest construction which can protect the ecological environment. The forestry secondary industry is the key of the strategic adjustment. The economic growth of the secondary industry can be achieved mainly by encouraging technological innovation. And the development of the tertiary industry can take forestry ecological tourism as a new growth point.<sup>1</sup>

China's forestry industrial structure has constantly been improved in recent years, and the forestry secondary industry has become the pillar of China's forestry economy. In 2010, the output value of the forestry secondary industry was more than 50% of that of the total forestry industry (Zeng and Nie 2010). As a very important sector of the forestry secondary industry, the furniture manufacturing industry has developed rapidly in the past 30 years (Dickson 2011). In 1978, the industrial output value of China's wood furniture industry was only less than 1 billion RMB, while in 1988 it increased to 47 billion, and in 2008 it raised to 144 billion RMB (Xia and Yuan 2011). The international competitiveness of furniture has been enhanced significantly. By 2000, China has overtaken Canada as the world's largest furniture exporter (Cao et al. 2004). Against the background of the world's largest furniture producer and exporter, studying the cluster distribution, export structure, and price advantage of China's furniture industry is necessary. This study will help analyze and predict the future development potential of China's furniture industry, which has an important significance for its sustainable development.

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<sup>1</sup> In China, the forestry primary industry mainly includes the forestry planting and lumbering industries. The forestry secondary industry includes six categories of forestry processing and manufacturing industries: sawn wood and chips, panels, wood products, paper and pulp, wood furniture, and others. And the forestry tertiary industry mainly includes ecological tourism and forestry service industry.

## Introduction to China's Forestry Industry

From 2000 to 2010, China's forestry economy has maintained a steady and fast development (China State Forestry Administration 2011a). The industrial output value of China's forestry has grown from 355.6 billion RMB to 2,277.9 billion RMB, with growth 6.4 times (**Fig. 1**). In 2000, the respective output values of the forestry primary, secondary, and tertiary industry were 238.9 billion RMB, 103.5 billion RMB, and 13.2 billion RMB, with ratios of 67.2%, 29.1%, and 3.7%, respectively. The forestry economic development of the secondary and tertiary industry seriously lagged behind the primary industry. So there was significant potential for growth in the secondary and tertiary sectors.

[Insert figure 1. about here]

China's forestry industrial structure has been improved and upgraded constantly since 2000. The improvement of China's forestry industrial structure refers to the advanced development and rationalization of the process (Yang and Nie 2011a). The primary industry was the pillar of the forestry sector in 2000. From 2000 to 2010, the primary industry developed slowly and stably, with an average annual growth rate (AAGR) of 14%. On the other hand, the forestry secondary industry developed rapidly with an AAGR of 27.6%, and its annual industrial output value reached 1,187.7 billion RMB in 2010. The figures indicate that the forestry secondary industry has passed the primary industry, and has become the largest part in China's forestry economic development. The forestry tertiary industry has the fastest development rate, despite its relatively low output value in the entire forestry industry. From 2000 to 2010, the annual output value increased at an AAGR of 31.3% and reached 200.7

billion dollars. These changes have resulted in the ratio of industrial output value of China's forestry primary, secondary, and tertiary industry changed to 39%, 52.1%, and 8.9%, respectively, in 2010 (**Fig. 2**).

[Insert figure 2. about here]

To achieve the development of the forestry industry, China has constantly protected and fostered forest resources, ensured the stable development of the basic industry of forestry primary industry, offered key support to the forestry secondary industry by establishing the processing industry as the leading industry, and promoted the growth of the forestry tertiary industry. Through these measures, China has achieved the goal of improving the forestry industrial structure, and realized the purpose of the shift of the forestry economic growth pattern (China State Forestry Administration 2010).

### **China's Forestry Secondary Industry and Furniture Manufacturing Industry**

#### **Composition of China's forestry secondary industry**

As the pillar industry of China's forestry economy, the secondary industry is mainly divided into six manufacturing industry categories: sawn wood and chips, panels, wood products, paper and pulp, wood furniture, and others.

According to the official statistics of the industrial output value in 2000, the panel manufacturing industry accounted for 28.6% of the entire forestry secondary industry, whereas wood products and wood furniture industries each accounted for about 15% (China State Forestry Administration 2001). As the basic industry directly depends on forest resources, the sawn wood and chips industry accounted for 7.9%, whereas the paper and pulp

industry accounted for 6.5%.

Under the strategic guidance of China's forestry industrial structure adjustment, the development of the forestry secondary industry won a large amount of forestry technology support and human resources investment; hence, the internal structure of the industry gradually had been improved (Wang 2011). Among the six manufacturing industry categories of the forestry secondary industry, the paper and pulp industry, which is a technology- and capital-intensive industry, has the fastest development rate, and the AAGR of its output value reached 45.8%. Until 2010, the output value of the paper and pulp industry accounted for 24.6% of that of the forestry secondary industry (**Fig. 3**), highlighting the important position of the technology-intensive industry after the industrial structure adjustment. China's wood furniture industry is a resource- and labor-intensive industry, and due to its mature technical support and cheap labor resource, it developed rapidly, with the AAGR of output value reaching 27% in the past 10 years. In 2010, the output value of the wood furniture industry accounted for 13.8% of that of the forestry secondary industry, playing an important role in promoting forestry economic development. To upgrade the industrial structure, the Chinese government has to limit the development speed of the resource consumption-based industry. As the resource-intensive industry panel manufacturing and wood products industry developed relatively slowly, its proportion of the output value slightly declined. Slowing the development speed of forest resource consumption-based and labor-dependent industries will be a long-term direction of structure adjustment of the forestry industry in the future (Yang and Nie 2011b).

[Insert figure 3. about here]

## **Composition of China's furniture industry**

According to the standards of China's National Bureau of Statistics, the country's furniture industry is mainly divided into metal furniture, wood furniture, upholstered furniture, plastic furniture, glass furniture, and others (National Bureau of Statistics of China 2012). The industrial output of China's furniture industry increased every year, and by 2010, it reached 770.3 million sets, 8.6 times the output in 2000<sup>2</sup>. As the top three major furniture industries, the metal furniture, wood furniture, and upholstered furniture manufacturing industries developed very stably, and in 2010, the ratios of their output value to the total output of furniture industry were 55.0%, 33.8%, and 6.1%, respectively (Table 1). The wood furniture industry relies on the resource supply of renewable timber, and compared to the industries using non-renewable raw material, its development has more environmentally friendly features.

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs (World Commission on Environment and Development 1987). Under China's strategic guidance of sustainable development, the wood furniture manufacturing industry will play an important role in the development of China's furniture industry (Deng et al. 2004). The development of China's wood furniture industry should consider the sustainability of imported supply and export marketing. The sustainability of imported supply can be achieved by importing legal timber passed the Forest Stewardship Council (FSC) certification, and the sustainability of export marketing can be achieved through market diversification which can reduce the risk caused

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<sup>2</sup> The units of measurement are based on the standard units of quantity recommended by the World Customs Organization (WCO). Furniture has no standard unit value. The quantity unit "set" in terms of mass, price value, ranges and other information is determined by sellers and buyers according to the furniture material and usage.

by economic crisis.

[Insert table 1. about here]

### **Industrial cluster of China's furniture industry**

According to China's national statistics in 2010, the top five regions with the largest furniture industry output are Guangdong, Zhejiang, Fujian, and Shandong provinces, and Shanghai, and the furniture produced by the five regions accounted for about 81.2% of the country's total furniture output (Table 2). Among these provinces, Guangdong and Zhejiang produced 193.9 million and 187.4 million furniture sets, respectively, accounting for about half of the national output.

[Insert table 2. about here]

According to the national statistics of the industrial output, in 2010, China's top five provinces are Guangdong, Shandong, Zhejiang, Liaoning, and Fujian (**Fig. 4**). The wood furniture output of these provinces accounted for 76% of that of the country's total wood furniture output, and wood furniture production in the top two provinces, Guangdong and Shandong, amounted to 140 million sets, which accounted for more than 50% of the national output.

[Insert figure 4. about here]

China's furniture industry is mainly distributed in three large economically developed core areas, namely, the Pearl River Delta (represented by Guangdong), the Yangtze River Delta (represented by Zhejiang), and Bohai Rim Region (represented by Shandong). The formation of the three industrial cluster areas is affected by various factors, such as the policy, resources,



and trade, among others (Jin and Zhang 2003). In comparison, the development of the furniture industry in Midwest China<sup>3</sup> presently lags behind. Since the reform and opening up in 1978, the Chinese government has promoted the implementation of export-oriented strategy through encouraging foreign investment, allowing foreign investors set up factories locally and exchanging market for capital or technology. Due to the geographical advantages and industrial base, eastern China has attracted large number of international investment. The development of the furniture industry in the eastern provinces has been promoted; subsequently, the present furniture industry cluster has gradually formed.

During the financial crisis period in 2008, exports of eastern China have declined severely due to lack of demand in the United States and other developed countries. So the growth of domestic consumption has gained more attention. In recent years, China's economic policy has gradually adjusted from an export-led to a domestic demand-led strategy (Dong and Zhang 2010). The economy of Midwest China was less developed than the eastern provinces. In 2000, the Chinese government formulated the develop-the-Midwest strategy. The industrial transfer is an important measure to implement the strategy. The Chinese government has put forward a number of support policies for the industrial transfer from tax, finance, investment incentives, land use, and other aspects. And the motive of industrial transfer to the Midwest is that the enterprises hope the region's cheap labor and resource advantages can result in lower production costs and greater economic benefits. Thus, the industry will gradually transfer from the eastern coastal area to the Midwest, and the furniture industry may form a new

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<sup>3</sup> The central area of China includes 8 provinces: Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei and Hunan. The western China includes 12 provinces and cities: Sichuan, Chongqing, Guizhou, Yunnan, Xizang, Shaanxi, Gansu, Qinghai, Ningxia, Xinjiang, Guangxi and Inner Mongolia.

cluster in the Midwest regions, perhaps in Henan or Sichuan provinces, in the future (Pu 2011).

## **China's Furniture Export Structure**

### **HS statistical description**

Furniture is categorized in the HS list of the UN Comtrade database (Table 3), which contains furniture (9403), metal furniture (940310, 940320), wood furniture (940330, 940340, 940350, 940360), plastic furniture (940370), and bamboo rattan furniture (940380, 940381, 940389).<sup>4</sup>

[Insert table 3. about here]

### **Major furniture export countries in the world**

The UN Comtrade statistics show that world furniture exports increased at an annual rate of 10%, and reached 66.0 billion dollars in 2010. The top five export countries were China, Italy, Germany, Poland, and Vietnam (Table 4). From 2006 to 2010, China's furniture exports retained the top spot in the world, reaching 18.0 billion dollars and accounting for 27.3% of global furniture exports. Compared to Italy and Germany, which are the second and third largest furniture exporters, respectively, and have a 10% share of the world's furniture exports, China's furniture industry developed much faster and captured greater world attention. Numerous potential advantages, such as cheap labor, FSC certified wood supply, and improved labor productivity, could enhance the international competitiveness of China's furniture industry in the future (David et al. 2008).

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<sup>4</sup> HS code is the abbreviation of International Convention for Harmonized Commodity Description and Coding System. HS divides all international trade of goods into 22 categories and 98 chapters.

[Insert table 4. about here]

### **Major import countries of China's furniture**

Until 2010, the international market of China's furniture had expanded to over 200 countries and regions (China State Forestry Administration 2011b). The top 10 countries in the list accounted for 65% of China's total furniture exports. The United States relied heavily on China's furniture and was the largest importer of China's furniture products, with imports reaching 5.8 billion dollars in 2010 and constituting more than 32% of China's total exports (Table 5). Japan and the United Kingdom were the other key target markets for China's furniture. The export volume to Japan increased by an average annual growth rate of 11% and exceeded 1 billion dollars in 2010, accounting for 5.7% of the total exports of Chinese furniture. Furniture exports to the United Kingdom also continued to grow, with an annual growth rate of 25.8%. In addition, China's furniture exports to Thailand increased by nearly 67 times in the last five years.

[Insert table 5. about here]

According to the official statistics, in 2010, China's major categories of exported furniture are wood furniture, metal furniture, and bamboo rattan furniture, with a ratio of 58:23:6. As the most important export category, wood furniture exports reached 10 billion dollars, including mahogany and lacquered furniture (940360) (62%), bedroom wood furniture (940350) (25%), kitchen wood furniture (940340) (7%), and office wood furniture (940330) (6%). From an overall perspective, China has become an important middle to upper-end furniture processing country (Table 6).

[Insert table 6. about here]

### **China's Wood Furniture Export Price Advantage**

Among the five major import countries of China's wood furniture (Table 7), the United States was the most important country, with imports accounting for 39% of China's total wood furniture exports in 2010. Kitchen furniture imports of USA accounted for 60% of China's total kitchen furniture exports, with a total of 447.6 million dollars, whereas the office furniture imports accounted for 44% of total exports, with a total of 307 million dollars. Other major countries importing China's wood furniture were Japan, the United Kingdom, Canada, and Australia.

[Insert table 7. about here]

It is necessary to analyze the price advantage of China's exported wood furniture in the international competition. Considering the United States as the world's most important furniture importer (Murillo 2007), this study conducts a comparison analysis of the furniture prices from its major exporters, namely, China, Canada, Indonesia, and Malaysia. Based on the HS standard, the statistics of the average unit prices of imported office furniture, kitchen furniture, bedroom furniture, and mahogany and lacquered furniture are given in Table 8.

[Insert table 8. about here]

First, Chinese wood office furniture and kitchen furniture (940330, 940340) have price advantages. The average unit price of China's exported office furniture is \$40, compared to the \$50 price of office furniture from Canada or Indonesia, giving China an existing price advantage of 20%. The average unit price of China's exported kitchen furniture is about \$40,

which has a 10% price advantage compared to Canada and Indonesia. The unit price of China's kitchen furniture exported to the United States is no higher than the average price exported to the world. Meanwhile, the office furniture price is higher than the world average unit price by 11.5%.

Second, compared to other categories of wood furniture, the bedroom furniture (940350) has no price advantage. The world average unit price of China's exported bedroom furniture is about 10% higher than that of other countries. The average price of China's bedroom furniture exported to the United States is \$105, which is about 38% higher than the prices of those from Canada and Indonesia.

Furthermore, as China's important product, China's mahogany and lacquered furniture (940360) has an obvious price advantage compared to the prices of other countries, such as Canada and Indonesia. Under the employment of the forest certification mechanism, Mahogany logging has been subject to strict control. The mahogany supply has become an important factor affecting the sustainable development of the mahogany furniture industry. So considering the background of protection of international environment and rare plants (Jorge et al. 2008), the industrial development of mahogany and lacquered furniture could be subject to restrictions in the future.

Finally, China is facing strong competition from some emerging forces. Malaysia currently prioritizes its wood furniture industry, and driven by an export-oriented policy, it has become the leader in the Southeast Asian market (Boon-Kwee and Thiruchelvam 2012). Malaysia has the lowest export prices of all kinds of furniture products indicated above. A gap in the price advantages of exported wood furniture exists between China and Malaysia. In the long run,

given the rapid development of the furniture industry, countries with rich forest resources such as Malaysia and Indonesia may become substitutes for China's furniture exports. To ensure the stable development of the wood furniture industry, China should strive to improve not only labor productivity, but also the industrial competitiveness of scale economic advantage.

### **Summary and Conclusion**

China's forestry secondary industry has become the pillar industry of the forestry economy, and the furniture manufacturing industry has an important position in the forestry secondary industry. China's implementation of an export-led strategy has greatly promoted the fast development of its furniture industry. Through 30 years of structure adjustment and technology accumulation, China has become a major furniture producer and exporter. China's furniture manufacturing industry is mainly distributed in three large economically developed core areas, namely, the Pearl River Delta, the Yangtze River Delta and the Bohai Rim Region; meanwhile, the development of the furniture industry in Midwest China presently lags behind. With China's economic policy changing from being export-oriented to domestic demand-led, the industry in the eastern coastal areas faces a shift to the Midwest. Due to the implementation of the develop-the-Midwest strategy, as well as many preferential policies put forward for the Midwest areas to undertake the industrial transfer, a new cluster of China's furniture industry may be gradually formed in the Midwest China in the future.

China has an important position in the world market of furniture products. The country's furniture exports have ranked first in the world in the past five years. In 2010, China's furniture exports accounted for 27% of the world's total furniture exports. The main

categories of China's furniture export structure include wood furniture (58%), metal furniture (23%), and bamboo rattan furniture (6%). The specific category of wood furniture consists of mahogany and lacquered furniture (62%), bedroom furniture (25%), kitchen furniture (7%), and office wood furniture (6%). The international market for China's furniture has expanded to over 200 countries and regions, and major export targets in 2010 were the United States (39%), Japan (6%), the United Kingdom (4%), and other countries. In the process of furniture trade, China and the United States had an important influence on each other (Murillo 2007).

The analysis of the unit price indicates that the office furniture and kitchen furniture have price advantages, whereas the bedroom furniture lacks a price advantage. Mahogany and lacquered furniture is the most important export category, and has a significant price advantage. However, the fact that the production and export of this kind of furniture is facing material shortage caused by the international protection of tropical forest resources must be recognized. The international comparison results show that China's exported furniture has no price and resource advantages compared to countries with rich forest resources. Moreover, China's furniture industry is facing strong competition from Malaysia and other emerging processing countries.

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### **Captions of figures**

*Figure 1.—China's forestry industrial output value (2000 to 2010).*

*Figure 2.—Composition of China's forestry industrial output value in 2010.*

*Figure 3.—The industrial output value of China's forestry secondary industry in 2010.*

*Figure 4.—Cluster and distribution of China's wood furniture industry in 2010.*