

# Exploring Market Opportunities for American Hardwoods through Chinese International Furniture Supply Trade Shows

Wenping Shi (also corresponding author)
Graduate Research Assistant
Department of Agricultural and Biological
Engineering
The Pennsylvania State University
University Park, PA 16802
wxs191@psu.edu

#### **ABSTRACT**

Global competition is increasingly impacting business organization and practice, which is forcing US hardwood manufacturers to become more efficient in manufacturing, distribution, and marketing. At the international marketing level, firms must target their promotional mix more effectively and efficiently toward relevant buyers from around the world. International trade shows have long been considered a cost-efficient and quick way to promote exports or gain valuable market information for entry. China is now the

## Paul M. Smith

Professor of Bioproducts Marketing Department of Agricultural and Biological Engineering The Pennsylvania State University University Park, PA 16802 pms6@psu.edu

world's largest furniture producer and exporter and the leading importer of US hardwoods. As such, it is important to better understand mechanisms for cost-effective participation in this huge hardwood market. This study was conducted to increase awareness of the importance of US–Chinese hardwood trade and knowledge of Chinese international furniture supply trade shows (IFS-TSs). In 2011, US hardwood lumber exports to China totaled US\$506 million or two-thirds of the US\$775 million worth of all hardwood product exports that year. A total of 27

Chinese IFS-TSs were identified through a twopart process: a review of secondary sources and personal communication with key trade show informants in China. This article also profiles the largest and most influential Chinese IFS-TSs (n = 9) in terms of the number of attendees and exhibitors, and other relevant factors. A better understanding of these trade shows will help US hardwood manufactures make show participation decisions.

# INTRODUCTION

The US hardwood industry is now facing globalization, whereby "Political forces have 'flattened' the world permanently, for both better and worse with globalized trade, outsourcing, and supply-chaining" (Friedman 2007). The acceleration of global competition is dramatically impacting business organization and practice (Friedman 2007), thus forcing US hardwood manufacturers to become more sophisticated and efficient in manufacturing, distribution, and marketing. At the international marketing level, firms must target their promotional mix more effectively toward increasingly sophisticated buyers from around the world. International trade shows have long been considered a cost-efficient and quick way to promote exports or gain valuable market information for entry (Motwani et al. 1992, Rice 1992, Shoham 1999).

During the recent global recession, US domestic demand for hardwoods decreased while exports gained in importance. In particular, China's booming economic development and rapidly growing furniture industry has resulted in increasing demand for US hardwoods. Between 2006 and 2011, US hardwood log and lumber exports to China grew at an annual rate of 11.2 and 13 percent, respectively (US Department of Agriculture Foreign Agricultural Service [USDA/FAS] 2012). China is now the number 1 export customer of US hardwood products totaling approximately US\$775 million in 2011 (USDA/FAS 2012).

Over the last two decades, researchers

have addressed the development of the Chinese forest products industry in terms of forest resources, production and consumption, domestic supply, and imports (Zhang et al. 1997, 1998; Sun et al. 2004; Jiang 2007; Yang et al. 2010). One of the earliest efforts (Zhang et al. 1998) addressed the change in Chinese wood product import preference from softwoods in the 1980s to hardwoods in the 1990s. Zhang et al. (1998) further explained the major competitive advantages of US wood products in Chinese markets in terms of product quality, service, and reputation and the keys to accessing the Chinese markets as flexible credit terms, joint venture options, and effective promotional activities.

The growing Chinese furniture industry and furniture exports have also garnered increased research attention, including profiles of the Chinese furniture industry (Sun and Hammett 1999, Cao et al. 2004), manufacturing strategies (Robb and Xie 2003), innovation (Cao and Hansen 2006, Yu et al. 2011), supply chain practices and operational performance (Robb et al. 2008), and competitive forces (Hunter and Li 2007, Han et al. 2009). Sun and Hammett (1999) interviewed 26 wood furniture manufactures in China regarding their wood use and identified red oak as the most popular US temperate hardwood species. More recently, Wang et al. (2010) surveyed 50 potential and current US hardwood buyers in China to better understand distribution, sources of supply, product types, species, and the market opportunity for US hardwoods.

Competing in today's marketplace requires global communication and promotion programs. International furniture supply trade shows (IFS-TSs) have long served as an important venue for hardwood suppliers to communicate with target audiences in both domestic and international markets. These IFS-TSs feature furniture supplying industries such as wood raw materials, woodworking machinery, hardware, and other furniture accessories. As a result of Chinese market liberation and the subsequent

rapid growth of the Chinese furniture industry, IFS-TSs in China have grown in international importance and prestige, attracting increasing numbers of exhibitors and attendees from around the world. Hardwood suppliers now have a wide variety of IFS-TSs in China to consider, thus contributing to the complexity of the trade show selection decision.

This article provides an overview of the US-China hardwood trade and insight into Chinese IFS-TSs to assist decision makers who may consider participation as an exhibitor or attendee. The largest and most important Chinese IFS-TSs are further discussed in terms of location, dates, and the number of attendees and exhibitors. A limited amount of secondary data was available from both Chinese and US official sources. Therefore, personal communication with trade show experts in China was required to obtain the IFS-TSs information contained in this article.

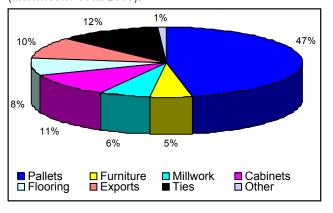
### **US HARDWOOD INDUSTRY**

Under a long-standing tradition of sustainable forest management, US forests continue to thrive and expand. The US Forest Service has reported that the volume of American hardwoods is 90 percent larger than it was 50 years ago, and nearly twice as much hardwood resource now grows and is harvested every year (Roddis Lumber and Veneer Co. 2010). Today, the United States is the largest producer of sawn hardwood in the world, comprising nearly onequarter of global production, and the number one temperate hardwood1 exporter (Panels and Furniture Asia 2009, American Hardwood Export Council 2011). According to the USDA Forest Service, approximately 90 percent of existing hardwood stock is contained in the eastern portion of the country (USDA Forest Inventory and Analysis 2007). The US hardwood industry is highly fragmented and populated by thousands of small- to medium-sized operations (French 2007, Hardwood Market Report 2011), which

are located in close proximity to timber supply regions, most notably the Appalachian region (Manchester et al. 2009).

The major Business-to-Business (B2B) customers of hardwood products are value-add manufacturers of finished goods including furniture, pallets, cabinets, millwork, and flooring (Bowe et al. 2001). Historically, furniture, flooring, cabinets, and millwork comprised the largest share of hardwood markets. However, due to weakness in US housing markets, industrial commerce and shipping materials (i.e., pallets, railroad ties, and timbers) have achieved a larger share of hardwood markets (Manchester et al. 2009, Espinoza et al. 2011). Specifically, the pallet industry increased from 37 percent of total hardwood consumption in 2008 to 47 percent in 2009 (Fig. 1; Manchester et al. 2009).

Figure 1. US hardwood consumption in 2009 by value (Manchester et al. 2009).

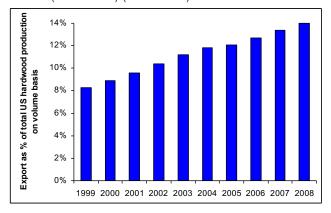


# **US HARDWOOD EXPORTS**

Temperate hardwood markets are increasingly becoming global in scope (Buehlmann et al. 2007). With the increasing transfer of manufacturing offshore, US domestic furniture, flooring, and other secondary wood product industries have declined (Buehlmann et al. 2007). However, the demand for US hardwoods in rapidly growing offshore markets has somewhat mitigated the reduced US demand. Figure 2 illustrates the growing share of US hardwood exports from 1999 through 2008 (Snow 2010).

<sup>&</sup>lt;sup>1</sup>Throughout this article, hardwood refers to hardwood logs, lumber, veneer, chips, hardwood plywood, and hardwood flooring.

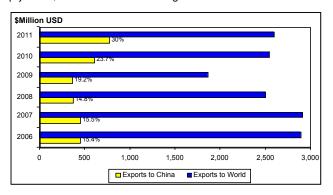
Figure 2. Exports as a percentage of US hardwood production (1999–2008) (Snow 2010).



## **US HARDWOOD EXPORTS TO CHINA**

China's key role as a customer of US hardwoods is shown in Figure 3. US hardwood products (lumber, logs, veneer, and plywood) have been the preferred raw material fueling China's increasing production of furniture, cabinets, flooring, etc. (Urban 2002, Lesprom 2005, Wang et al. 2010). In 2011, China accounted for 30 percent of total US hardwood products exports or US\$775 million, up from 23.7 percent (US\$604 million) in 2010 (Fig. 3; USDA/FAS 2012).

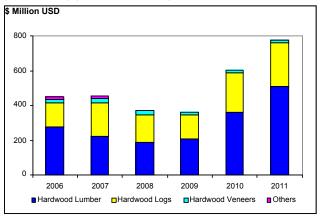
Figure 3. US hardwood exports to world and China (2006–2011) (USDA/FAS 2012). Hardwood exports include hardwood logs, lumber, veneer, chips, hardwood plywood, and hardwood flooring.



Lumber, logs, and veneer are the major US hardwood products imported by China, with hardwood lumber sales growing the most rapidly since 2008 and totaling US\$506 million or 65.3 percent of US hardwood imports in 2011 (Fig. 4). From 2010 to 2011, US hardwood lumber and log

exports to China increased by 41 and 11 percent, respectively (USDA/FAS 2012). This dramatic demand growth for US hardwoods was due largely to a robust Chinese economy and appreciation of the Chinese Yuan vis-à-vis the US dollar.

Figure 4. US hardwood exports to China by product (2006–2011) (USDA/FAS 2012).

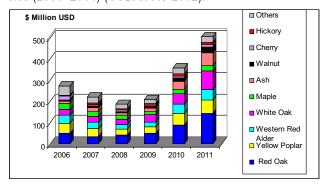


In terms of US hardwood lumber exports to China by species, a wide variety of species are in demand, led by red and white oak, yellow poplar, western red alder, and ash (Fig. 5). US log exports to China are primarily red and white oak and walnut (Fig. 6; USDA/FAS 2012).

### **US HARDWOOD MARKET DEMAND DRIVERS**

The United States has been the dominant source of Chinese temperate sawn hardwood imports due to the perception of higher quality and better consistency versus hardwoods from other regions (Hardwood Review Weekly 2010, Petry et al. 2010, United Nations Economic Commission for Europe [UNECE] 2010). China's imports of temperate sawn hardwood were projected to exceed 2 million m<sup>3</sup> during 2011, with over half coming from the United States (UNECE 2011). The majority of China's hardwood imports are used in the subsequent value-added manufacturing of furniture, flooring, and other secondary wood product industries such as wooden doors (Li 2010). Factors affecting increased US hardwood sales to China include the growth of commercial construction, housing privatization initiatives, the

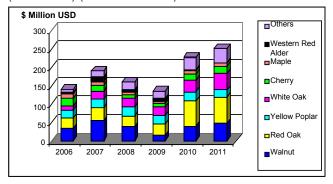
Figure 5. US hardwood lumber exports to China by species (2006–2011) (USDA/FAS 2012).



rise of consumer disposable income, and growing demand by Chinese value-added industries, in particular, the high-end interior furnishing and decoration category (Lesprom 2005, Snow 2010).

The most important hardwood demand sector in China is the furniture industry that has increased production at an annual rate of 20 percent during the period of 2000 to 2009 (Fig. 7). China is now the largest furniture producer and exporter in the world. Despite the reduction in Chinese furniture exports in 2009 resulting from the global recession, total Chinese furniture production continued to increase in response to growing Chinese domestic consumption (Fig. 7; Chinese National Furniture Association [CNFA] 2001–2010).

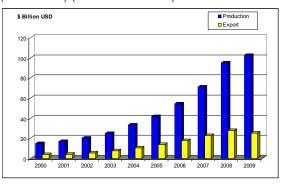
Figure 6. US hardwood log exports to China by species (2006–2011) (USDA/FAS 2012).



### **IFS-TSS AS PROMOTIONAL TOOLS**

Decreased domestic demand has driven a growing emphasis on international markets by US

Figure 7. Chinese furniture production and exports (2000–2009) (CNFA 2001–2010).



hardwood manufacturers. This, in turn requires increased scrutiny of a firm's promotional mix expenditures and a need to more efficiently target a wide array of domestic and international markets. International trade shows provide a wide array of benefits for exhibitors and attendees, including but not limited to international business network development, competitive intelligence gathering, sales, corporate image/reputation building, and customer needs identification. In order for US hardwood suppliers to successfully access the huge and complex Chinese market, quality information and assistance are needed. Chinese IFS-TSs provide cost-effective venues to US hardwood producers to efficiently gain access to this important demand sector. The following section profiles Chinese IFS-TSs to help US hardwood manufacturers determine the cost-effectiveness and suitability of these venues within their promotional mix.

### **MAJOR CHINESE IFS-TSS**

The Chinese furniture industry's rise to international prominence over the last two decades has been accompanied by an attendant boom in China's IFS-TSs. Most of these Chinese IFS-TSs are concurrently held with furniture trade shows, thus serving as one-stop events for both attendees and exhibitors.

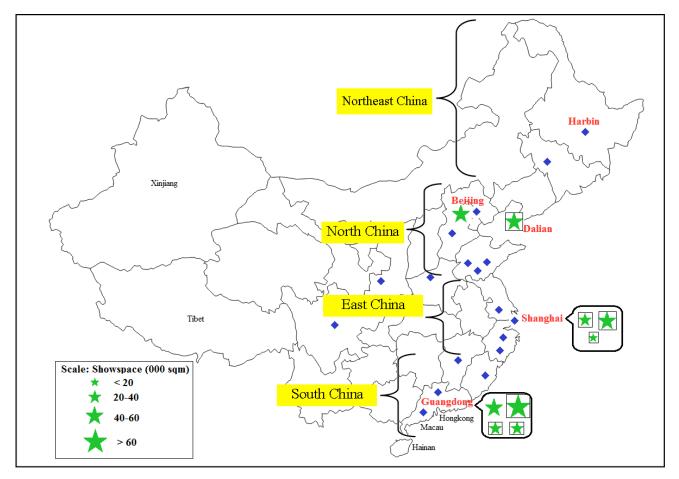
#### IFS-TS BACKGROUND

A dearth of published information regarding Chinese IFS-TAs is available. Therefore, in order

Figure 8. Distribution of Chinese international furniture supply trade shows (IFS-TSs).

Note: The nine largest shows are denoted with a star, sized according to number of square meters of show space; the

remaining 18 shows are denoted with a diamond. Of the nine largest IFS-TSs, seven are held concurrently with international furniture trade shows as indicated with a framed star.



to better understand these shows, a two-step research process was deployed. First, we obtained all relevant secondary data from both Chinese and US official sources, including journals and magazines in the wood products industry (i.e., China Wood Industry Journal, Furniture and Interior Design, Wood Processing Machinery, China Wood-Based Panel and Furniture Today). To supplement data acquired from these secondary sources, we developed qualitative questions for subsequent personal communications (phone interviews) with Chinese trade show experts between April 2011 and March 2012. Interviewees included personnel from trade show organizations, staff from China Wood Industry Journal, and Beijing Forestry University faculty. The two-step process resulted in the identification of 27 Chinese IFS-TSs. All Chinese IFS-TSs are horizontal and typically include various combinations of woodworking machinery, wood raw materials (e.g., lumber, components and parts, veneer, wood-based panels), hardware, and/or furniture. As shown in Figure 8, the largest nine shows are denoted with a star, sized according to show size (in square meters), and the remaining 18 shows with a diamond. Of the nine largest IFS-TSs, seven are held concurrently with international furniture trade shows as indicated in Figure 8 with a framed star. Table 1 provides further profile data regarding these nine Chinese

IFS-TSs, ordered according to the number of exhibitors.

One important characteristic of Chinese IFS-TSs is that they are located along the east coast within China's four furniture producing regions: south, east, north, and northeast (Fig. 8). These four regions contain over 80 percent of China's furniture manufacturing firms and over

90 percent of the total furniture output in 2008 (Cao and Hansen 2006, Han et al. 2009, Zhou and Xiao 2009).

Figure 8 and Table 1 illustrate the huge importance of Guangdong and Shanghai to Chinese IFS-TSs as seven of the nine largest shows are located in these two regions. The South China region of Guangdong contains four

Table 1. Profile of the nine largest Chinese international furniture supply trade shows in 2011.

Name	Location	Recent show(s)	Frequency	Space (m <sup>2</sup> )	No. of exhibitors	No. of attendees
1. CIFM/interzum Guangzhou	Guangzhou, Guangdong	Mar 27–30, 2012	Annual	110,000	1,023	50,514 <sup>a</sup>
2. Furniture Manufacturing & Supply China (FMC)	Shanghai	Sep 11–14, 2012	Annual	59,000	745	30,327 <sup>b</sup>
3. International Exhibition on Woodworking Machinery and Furniture Manufacturing Equipment (WMF) and Furniture Accessories, Materials and Wood Products (FAM) <sup>c</sup>	Beijing	Mar 12–15, 2012	Biannual	60,000	600 <sup>d</sup>	28,000
4. Trade Fair for Materials, Accessories and Supplies for Furniture Manufacturing (FurniSup) <sup>c</sup>	Guangzhou, Guangdong	June 15–17, 2012	Annual	40,000	500	30,000 <sup>e</sup>
5. WoodMac, FurniTek, and WoodBuild China 2011	Shanghai	Mar 1–4, 2011; Mar 5–8, 2013	Biannual	35,000	360	16,730
6. International Famous Furniture Woodworking Machinery & Material Fair (IFM)	Dongguan, Guangdong	Mar 16–20; Sep 5–9, 2012	Semiannual	20,000	354	29.668
7. Asia International Furniture Material Expo (AIFME)	Shunde, Guangdong	Mar 17–20; Sep 6–9, 2012	Semiannual	30,000	300	NA
8. International Furniture Components & Raw Material Exhibition (IFME)	Dalian, Liaoning	June 8–11, 2012	Annual	45,000	264	37,347 <sup>f</sup>
9. Furniture Manufacturing & Supply China Premium (FMC Premium)	Shanghai	Sep 11–14, 2012	Annual	10,000	151	11,483

<sup>&</sup>lt;sup>a</sup> Data obtained from Mr. Liang, Koelnmesse Co, Ltd., Guangzhou Branch, November 2011.

of the largest IFS-TSs and is the largest furniture producing and exporting region, accounting for 30 percent of China's total furniture production and half of its exports in 2008 (Zhou and Xiao 2009). The East China region of Shanghai, China's economic trading and shipping center, is adjacent to the second largest furniture production region of Zhejiang. These two regions rely on the advantageous geographic proximity to two of

the world's busiest ports in Shanghai and Hong Kong (World Port Source 2012). IFS-TSs in the Guangdong and Shanghai areas create synergy for more efficient and cost-effective exhibitor and attendee participation.

#### SUMMARY

China has become a juggernaut in furniture manufacturing and exporting. As a result,

<sup>&</sup>lt;sup>b</sup> Data obtained from Miss Li, Shanghai UBM Sinoexpo International Exhibition Co., Ltd., November 2011.

<sup>&</sup>lt;sup>c</sup> Shows are not concurrently held with furniture trade shows.

<sup>&</sup>lt;sup>d</sup> Data estimated by Miss Lin, Adsale Exhibition Services Limited, Beijing Office, March 2012.

<sup>&</sup>lt;sup>e</sup> Number of attendees estimated by Miss Chen, Guangdong Furniture Chamber of Commerce, October 2011.

<sup>&</sup>lt;sup>1</sup>Number of attendees includes furniture supply plus furniture halls total; IFME organizers were unable to separate these attendees.

demand for US hardwood products has grown dramatically. The accelerating competition among global supply chains in raw material sourcing, manufacturing, distribution, and sales has prompted US hardwood producers to more fully examine the effectiveness of their marketing and sales activities on a worldwide scale. The relative ease with which hardwood suppliers can utilize Chinese IFS-TSs to reach potential customers makes this an important topic for research.

This article provides an overview of US-China hardwood trade and key information regarding Chinese IFS-TSs to potential exhibitors and attendees who may consider using these shows

to better understand the booming Chinese furniture market. In particular, US hardwood suppliers may benefit through a better understanding of these cost-effective venues in China for selling and nonselling activities. Detail of Chinese IFS-TSs regarding show timing, location, and size may help US hardwood marketers to better understand and utilize these shows as part of their marketing efforts and help guide their show selection decision. This information also has implications for suppliers and buyers from furniture and other related furniture supply sectors, such as woodworking machinery, wood-based panel products, hardware, etc., who may consider participation in Chinese IFS-TSs.

## LITERATURE CITED

American Hardwood Export Council (AHEC). 2011. Products introduction. http://www.ahec.org/hardwoods/products.html. Accessed April 20, 2011.

Bowe, S., R. Smith, and P. Araman. 2001. A national profile of the U.S. hardwood sawmill industry. *Forest Prod. J.* 51(10):25–31.

Buehlmann, U., M. Bumgardner, A. Schuler, and M. Barford. 2007. Hardwood lumber supply chain: Current status and market opportunities. *In:* Proceedings of the International Scientific Conference on Hardwood Processing, September 24–27, 2007, Quebec City. 5 pp.

Cao, X. and E. Hansen. 2006. Innovation in China's furniture industry. *Forest Prod. J.* 56(11/12):33–42.

Cao, X., E. Hansen, M. Xu, and B. Xu. 2004. China's furniture industry today. *Forest Prod. J.* 54(11):14–23.

Chinese National Furniture Association [CNFA]. 2001–2010. Chinese furniture industry annual reports: 2001–2010. CNFA, Beijing. (In Chinese.)

Espinoza, O., U. Buehlmann, M. Bumgardner, and B. Smith. 2011. Manufacturers and distributors in the U.S. hardwood lumber supply chain: Perceptions of industry trends. *In:* Proceedings of the 3rd International Scientific Conference on Hardwood Processing, October 16–18, 2011, Blacksburg, Virginia. 11 pp.

French, J. 2007. U.S. hardwood exports and international procurement policies. Northland Forest Products, Kingston, New Hampshire. 15 pp.

Friedman, L. T. 2007. The World Is Flat 3.0: A Brief History of the Twenty-First Century. 2nd ed. Picador/Farrar, Straus and Giroux, New York. 660 pp.

Han, X., Y. Wen, and S. Kant. 2009. The global competitiveness of the Chinese wooden furniture industry. *Forest Policy Econ.* 11(2009):561–569.

Hardwood Market Report (HMR). 2011. Hardwood industry launches effort to establish marketing

programs. Hardwood Market Report. February 7, 2011.

Hardwood Review Weekly. 2010. Positive perceptions of American hardwoods could fuel substantial market growth in China. Hardwood Review Weekly. September 13, 2010. http://hardwoodreview.blogspot.com. Accessed April 18, 2011.

Hunter, S. and G. Li. 2007. Market competition forces: A study of the Chinese case goods furniture industry. *Forest Prod. J.* 57(11): 21–26.

Jiang, Z. 2007. The forest products industry in China. Forest Prod. J. 57(7/8):7–15.

Koelnmesse Co. 2011. CIFM/interzum Guangzhou photo gallery. http://www.interzum-guangzhou.com. Accessed April 2, 2012.

Lesprom. 2005. China becomes largest destination of US Hardwoods. Moscow. June 9, 2005. http://wood.lesprom.com/news/. Accessed April 18, 2011.

Li, H. 2010. Hardwood demand analysis in China. December 2010. http://www.wdscapps.caf.wvu.edu/trade/conferencepresentation/HongfanLi.pdf. Accessed March 20, 2011.

Manchester, B., A. West, J. McGaugh, and J. Tai. 2009. The hardwood sawmill market—A time for consolidation. Basic Industries Group, Costa Mesa, California. 14 pp.

Motwani, J., G. Rice, and E. Mahmoud. 1992. Promoting exports through international trade shows: A dual perspectives. *Rev. Business* 13(4):38–42

Petry, M., L. Zhang, and S. Zhang. 2010. China forest products annual report 2010. USDA Foreign Agricultural Service, Global Agricultural Information Network, Washington, D.C. July 28, 2010. 15 pp.

Panels and Furniture Asia. 2009. Hardwoods markets update part 1. Panels and Furniture Asia, Singapore. November/December 2009:44–46.

Rice, G. 1992. Using the interaction approach to understand international trade shows. *Int. Mark. Rev.* 9(4):32–45.

Robb, D. and B. Xie. 2003. A survey of manufacturing strategy and technology in the Chinese furniture industry. *Eur. Manag. J.* 21(41):484–496.

Robb, D., B. Xie, and T. Arthanari. 2008. Supply chain and operations practice and performance in Chinese furniture manufacturing. *Int. J. Prod. Econ.* 112(2008):683–699.

Roddis Lumber and Veneer Co. 2010. Going green is easy, the wood industry moving forward. Roddis Lumber and Veneer Co., San Antonio, Texas. September 1, 2010. 3 pp.

Shoham, A. 1999. Performance in trade show and exhibitions: A synthesis and directions for future research. *J. Global Mark*. 12(3):41–56.

Snow, M. 2010. American hardwood exports—China and beyond. American Hardwood Export Council, Reston, Virginia. August 2010. 37 pp.

Sun, X. and A. Hammett. 1999. Chinese furniture industry: Its development and wood use. *Forest Prod. J.* 49(10):31–35.

Sun, X., E. Katsigris, and A. White. 2004. Meeting China's demand for forest products: An overview of import trends, ports of entry, and supplying countries, with emphasis on the Asia-Pacific Region. *Int. Forestry Rev.* 6(3–4):227–236.

United Nations Economic Commission for Europe (UNECE). 2010. Forest Products Annual Market Review 2009–2010. UNECE/Food and Agriculture Organization of the United Nations, Geneva. 188 pp.

United Nations Economic Commission for Europe (UNECE). 2011. Forest Products Annual Market Review 2010–2011. UNECE/Food and Agriculture Organization of the United Nations, Geneva. 174 pp.

Urban, H. 2002. US furniture makers heed the great call of China. Wood Wood Prod. 4:64–72.

US Department of Agriculture Foreign Agricultural Service (USDA/FAS). 2012. International forest products trade statistics data in Global Agricultural Trade System. http://www.fas.usda.gov/gats/default.aspx. Accessed April 2, 2012.

US Department of Agriculture Forest Inventory and Analysis (USDA/FIA). 2007. Net volume of hardwood sawtimber trees on timberland. http://fia.fs.fed.us/tools-data/maps/2007/descr/bdfthw.asp. Accessed March 10, 2012.

Wang, J., J. Wu, and J. Armstrong. 2010. An analysis of Appalachian hardwood products in the Chinese market. *Wood Fiber Sci.* 42(1):71–80.

World Port Source (WPS). 2012. China port. http://www.worldportsource.com/ports/index/CHN.php. Accessed April 15, 2012.

Yang, H., Y. Nie, and C. Ji. 2010. Study on China's timber resource shortage and import structure: Natural forest protection program outlook, 1998 to 2008. *Forest Prod. J.* 60(5):408–414.

Yu, N., L. Shen, and S. Lewark. 2011. Drivers and barriers for implementing advanced manufacturing technology in China's furniture industry: An exploratory study. *Forest Prod. J.* 61(1):83–91.

Zhang, D., J. Liu, J. Granskog, and J. Gan. 1998. China: Changing wood products markets. *Forest Prod. J.* 48(6):14–20.

Zhang, Y., J. Buongiorno, and D. Zhang. 1997. China's economic and demographic growth, forest products consumption, and wood requirements: 1949 to 2010. *Forest Prod. J.* 47(4):27–35.

Zhou, X. and P. Xiao. 2009. The situation analysis and development outlook on China's furniture manufacturing cluster. *Issues Forestry Econ*. 29(3):274–277. (In Chinese.)