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REPORT ON THE REVIEW OF THE US MARKET FOR TROPICAL TIMBER PRODUCTS

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The International Tropical Timber Organization

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Executive Summary

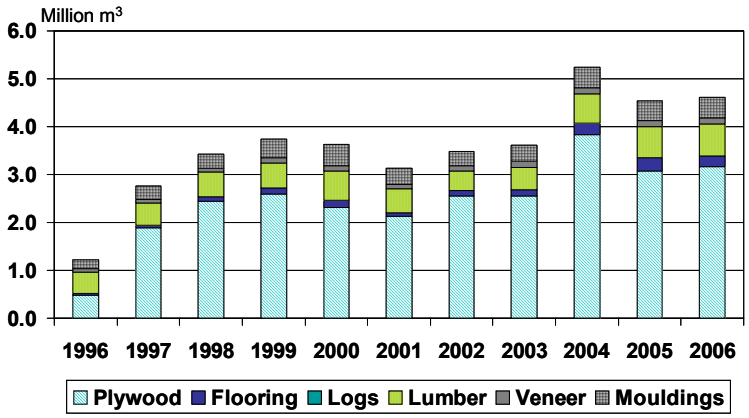
US Market Trends

The consensus forecast for the US economy is steady but slower growth in 2007 and 2008, continuing the current expansion that is in its 5th year following a brief and mild slowdown in 2001–2002. Some elements of the economy are showing recessionary risk, but most economists believe that risk to be low. Energy prices have been rising, although inflation overall has been kept in check by a series of increases in the federal funds rate that now stands at 5.25%. The softening in the current economy is being influenced in large part by a downturn in housing construction that began during 2006. From a record 2.1 million housing starts in 2005, the sector slowed to 1.6 million starts on an adjusted annual basis in the 4th quarter 2006. Housing starts are forecast to decline by 15% in 2007. Consequently, overall US wood demand has begun to soften from record and near record levels. The US dollar has also weakened against many currencies that are linked to exporters of wood products to the US.

Tropical Wood Products in the US Market

The US is the world's largest producer and consumer of wood products, but represents just 1% of global consumption of tropical wood products. Almost all of what the US imports in tropical wood products is in the form of processed products. The US imports almost an insignificant volume of tropical hardwood roundwood; just 1,500 m^3 in 2006. Tropical hardwood sawnwood imports are also relatively small at 364,000 m^3 in 2006, but they are a significant component of all hardwood sawnwood imports, accounting for 22% of the total in 2006. Tropical imports figure more prominently in the hardwood plywood and flooring segments than in sawnwood. US imports of tropical plywood totaled 1.4 million m^3 in 2006 and accounted for 30% of hardwood plywood imports; tropical flooring products accounted for an estimated 45% of wood flooring imports. By making some assumptions about the share of tropical wood in further processed imports, we estimate that 2006 US imports of tropical wood species represented a volume of approximately 4.6 million m^3 in roundwood equivalent, not including wood furniture (*Figure 1.1*)

Figure 1.1: US Imports of Tropical Wood Products (Roundwood Equivalent)

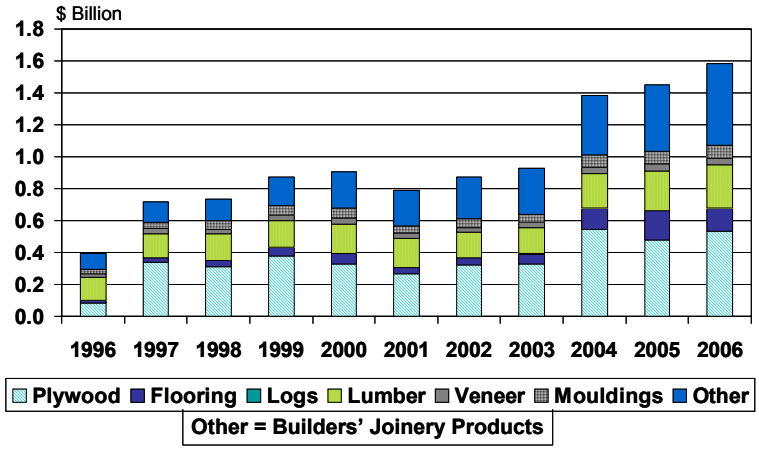


Source: WRI estimates

Within the US wood market, tropical sawnwood tends to occupy very particular but important niches. It is primarily used in high-end furniture, cabinets, flooring, architectural woodwork, decking, and mouldings, and in specialized industrial applications, such as in marine uses and truck beds. Tropical hardwood plywood and veneer is sold both as a commodity for general use as well as for high-value finished applications. In some applications, tropical wood species compete directly with temperate domestic species, most commonly in architectural, decking and flooring applications. Where tropical wood species compete with domestic varieties, species preference is often a function of taste and fashion. For some uses, such as in boat-building and decking, tropical wood has distinct performance advantages. The use of tropical species in flooring, millwork (i.e. moulding) and builders joinery has been expanding in recent years. However, in the context of a huge US wood market, tropical wood products (excluding wood furniture) comprise only about 1 - 2% of US consumption.

We estimate that the US imported US$1.6 billion of tropical wood, flooring and other wood products, not including furniture (Figure 1.2). In 2006, the US imported a total of US$15.6 billion of wood furniture and parts, some portion of which was represented by tropical wood products. Of the US$15.6 billion of imports of wood furniture and wood furniture parts, US$3.0 billion (20%) was imported from ITTO producer countries, and US$7.6 billion (48%) was imported from Greater China and Singapore.[1] Thus, wooden furniture imports from ITTO producer countries and China represent nearly 70% of all US wooden furniture imports. Not all of these imports are necessarily fabricated using tropical timber species, but many use tropical species in whole or in part. While the data do not allow a highly reliable estimate, we believe that on the order of 75% of imports from ITTO-producer countries and 50% of imports from Greater China and Singapore are likely of tropical species. Thus, tropical timber species are the used in about half of US wooden furniture imports.

Figure 1.2: Estimated Value of Tropical Wood Imports (Exc. Wood Furniture)



Source: GTIS and Seneca Creek estimates

Opportunities and Challenges

Tropical wood producers face both opportunities and challenges in the US market. Consistent with a prolonged boom in residential construction, demand for wood products has been quite strong since the US recovered from a mild recession following the terrorist attacks of 2001. Imports of tropical wood products have, for the most part, steadily increased. New technologies in flooring products, coupled with their availability from low-cost overseas suppliers, and greater demand for wood amenities (paneling, decks, and cabinets) in larger, more expensive homes, have created expanded opportunities for tropical wood producers. Even commodity grades of imported plywood have fared very well in the booming construction cycle. However, the US economy has begun to slow. Housings starts were lower in 2006 and will be lower again this year. The US dollar has weakened against many currencies that are linked to exporters of wood products to the US. And overall US wood demand has already begun to soften. Except for hardwood plywood imports which increased by 21%, and tropical sawnwood imports which were up by 3%, US imports of all other hardwood products declined in 2006.

Beyond the economy itself, tropical wood producers and importers face some difficult issues related to US market access and the ramifications of globalization on the US wood industry. The US hardwood plywood, hardwood flooring and wood furniture industries have been impacted by import competition and have sought government redress. New regulations on permissible levels of formaldehyde emissions from panel products are soon to be implemented in California – a major US market. Proposals to address the issue of illegal logging seem to be gaining momentum. Forest certification, although not significant yet at the ground level of the US market, is also gaining adherents from some large distributors and retailers. These, and other issues, present some difficult challenges to the tropical timber producing countries.

[1] Greater China is defined as including mainland China, Hong Kong and Taiwan. These data are derived from official US import statistics and represent an aggregate of HTS import codes that are defined mainly by wood furniture product types.

Observations

- In the US market, tropical sawnwood occupies very particular market niches for high-end uses. It competes well in high-end furniture, architectural woodwork and flooring. Except for some industrial applications where the rot resistance and hardness characteristics of imported varieties of tropical woods are superior, low-value tropical species cannot compete well with domestically available hardwoods.

- The US hardwood sawnwood market has been most impacted by a decline in demand for red oak, the most common American temperate species, a significant increase in US wood product exports to China, and a corresponding surge in wood (and wood furniture) imports from China. Driven by a shift to overseas manufacturing, hardwood use by the US furniture industry is less than half of what it was in 1999, a drop of over 3 million m3.

- At 364,000 m3 in 2006, the volume of imported tropical sawnwood has remained relatively steady to moderately increasing for the past several years. It has increased (and will likely ebb) along with construction activity, but the growth in the tropical wood market has largely been in finished imported products such as flooring, stock mouldings and furniture. Tropical sawnwood used for decking has also gained in popularity in up-scale housing and commercial buildings.

- The market situation for plywood is different. The US has historically utilized tropical plywood in uses ranging from cabinet backs in low-priced furniture to highly valued architectural woodwork. The biggest constraints to expanding the US market for imported plywood are environmental performance related to formaldehyde emissions and the perceptions (real or otherwise) about imported plywood originating from poorly managed resources and subsidized factories.

- US hardwood plywood and wood flooring manufacturers are reacting to a large influx of imported products by asking for a government investigation and intervention. The US has formally filed a request with the WTO regarding Chinese manufacturing subsidies. An imposition of a 10% export tax on Chinese flooring exports appears to have stabilized imports from China, but the impact of imports on US flooring manufacturers has led to similar US industry requests for action. Further hearings and investigations on hardwood plywood and flooring are pending.

- Newly adopted regulations in the State of California will strictly limit permissible formaldehyde emissions in all wood panel products will require tropical plywood producers to adopt new technologies or abandon the California market altogether. California represents somewhere between 8 – 10% of all US demand for panel products and products that are fabricated using hardwood plywood and other wood panels. The US market could become two-tiered with upward price pressure in California and downward price pressure on panels and furniture made with wood panels sold in the rest of the country.

- As new technologies are introduced, the market is shifting away from solid sawn products to more engineered wood products, particularly in flooring. Engineered plywood flooring and laminates using MDF or veneer cores are capturing a larger share of an expanding market. However, with a less robust economy, and more stable (rather than expanding) demand, competitive pressures will intensify.

- Demand for certified wood products remains very low, but certified wood products are attracting increasing attention. Premiums for certified wood products are the exception rather than the rule. The lack of sufficient supply of certified wood products is frequently cited by importers and distributors as a given in the marketplace. Not surprisingly, there is an assortment of opinions about the role of certification in the US wood market. Amongst importers, the prevailing view is that certification is not likely to result in price premiums, but it may help to secure and legitimize trade in certain tropical species.

- Based on discussions with importers, manufacturers and retailers for this study, it is fair to say that as long as the US general public reads and hears about illegal logging and the destruction of the tropical forests, the sales of wood-based products from tropical countries will be under suspicion. The vast majority of end-users (i.e. consumers that purchase homes, furniture, flooring, etc.) are more concerned about price and fashion than about forest issues, but major retailers and distributors are instituting purchasing policies in order to present an environmentally friendly image.

- Devising methods of more effectively demonstrating sustainability and emphasizing sustenance for local timber-dependent economies can help maintain market access. Building trade association capacity in tropical timber-producing countries where associations are not currently very active would provide one avenue for achieving this objective.

- Sufficient availability of specific species tends to be a perennial issue, particularly for end-uses that require stable supply. Architects specifying species for particular projects seek sufficient “one-time” volume, but furniture-makers and boat-builders require secure, stable continuous availability.

- In conversations with members of the trade, quality issues often rank as high as stability of supply. Several importers noted that a standardized grading system, similar to one used for domestic US species or by European distributors, would improve the opportunities in the US, although most importers have instituted their own unique grading systems to serve their regular customers. Consistency in dimensions and moisture content are also commonly cited concerns.

- Information about lesser-known tropical species would clearly enable greater market penetration. One consequence of certification in tropical areas is that a greater assortment of species will likely be in the mix of timber harvested.

- With globalization, trade flows have become much more complex. US imports of tropical wood flooring, furniture and other products more often than not contain components that have originated in countries other than the exporting country of record. Thus imports from China commonly contain or are fabricated from wood products and components from other countries that are further processed in China. Only rough estimating is possible in determining the volume of tropical wood products that might be included in finished wood products and furniture exports from Asia. Moreover, these complicated trade flows do not easily lend themselves to chain of custody tracking schemes.

- The US is negotiating Free Trade Agreements (FTAs) with several countries that are important tropical timber producers, including Malaysia, Indonesia, Thailand and Peru. These agreements, if completed, could greatly increase market access for wood products produced in those countries. At the same time, they will likely attract attention by NGOs seeking to stop the timber trade. Given the change in political control of the US Congress, new FTAs are not likely to be approved without strong environmental and labor provisions.

- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is increasingly impacting tropical wood trade. As more commercial species are governed by CITES, commercial availability of those species becomes increasingly problematic. US mahogany imports have plummeted since the CITES Appendix II listing and permitted shipments are being challenged by third parties as not conforming to CITES requirements. US importers indicate that intractable disputes are encumbering even legitimate trade in CITES-listed species.

- Less supply and higher prices for mahogany have provided opportunities for other, previously less utilized, tropical species that are comparable in characteristics and more competitively available. .

- A combination of market-related pricing pressures and unpredictable cost increases due to port delays or, in some cases, legal challenges, has narrowed profit margins for importers. Many are responding by diversifying supply sources and species, or by handling more finished products. Currency fluctuations also pose a perennial risk in the import/export business.

- The near-term consensus outlook for the US economy is for continuing but slower growth than during the past five years. US demand for wood products is largely driven by new home construction and renovations, both of which will weaken from a cyclical peak reached in 2005.

- Overall, the outlook for tropical wood in the US market is a positive one, but producers, manufacturers, importers and governments cannot be complacent. The challenges noted above need to be addressed for tropical wood to retain or expand its role in the US market.

Recommendations to ITTO Members

Aside from macroeconomic factors (GDP growth, housing construction, exchange rates, etc.), the three most important developments for tropical wood exporters to the US over the next five years will be: (1) more restrictive standards on formaldehyde emissions for products sold in the State of California, (2) policies to address illegal logging and (3) timber species listings on Appendix II of CITES.

- In order to sell hardwood plywood and products manufactured from them in the State of California, ITTO-producer members must take the necessary steps to comply with the pending California formaldehyde regulation scheduled to be phased-in beginning in 2009. California represents about 10% of the US market for most manufactured products.

- To retain and/or expand markets in the rest of the US (states other than California), tropical hardwood plywood producers should consider conforming to at least the minimum US formaldehyde standard required for products used in manufactured housing -- currently as defined by American National Standard ANSI 208.1 and in HPVA-1-2000. Meeting the European E-1 standard would ensure somewhat greater access, particularly as the big retailers implement purchasing policies.

- ITTO-producer members should take steps as they deem necessary to improve governance and enforcement of forest tenure and forest-related laws to ensure the global trade that wood products are produced from legal sources of supply.

- ITTO-producer countries should work together and with their consumer country partners to facilitate legal trade under CITES and seek to promote lesser-known species that are sustainably available.

- Although the demand for certified wood is still low in the US, certification provides a legitimacy that can help secure continuing trade.

Recommendations to ITTO Secretariat

As a forum for tropical timber producers and consumers, the ITTO can (and does) play a very important role in providing technical and other assistance for the sustainable management, production and trade of tropical wood products. In that context, the ITTO should consider:

- From an analytical perspective, data on trade of CITES-listed species and products are not consistently maintained or reported. The ITTO could potentially play a greater role in CITES programs by evaluating and recommending a more consistent and timely data reporting system ITTO should also consider providing technical assistance to the CITES Secretariat on data collection and analysis and/or assisting with species evaluations or permit-issuing procedures.

- Undertaking an assessment of the strengths and opportunities to enhance the roles of associations in promoting both sustainability and commercial trade of tropical wood products. ITTO might consider assisting trade associations in tropical producing countries to in becoming more active in promotion and representing their industries on matters such as CITES, illegal logging and forest sustainability issues.

- Informing ITTO producers about the new California formaldehyde regulation and facilitating technologies to assist producers in meeting the new standards.

- Undertaking a project to provide estimates of tropical hardwood use in exported furniture products.

- Developing a web-based resource to provide information about lesser-known species, including physical and machining properties, appearance, possible end-uses, supply sources etc.

- Continuing and strengthening its efforts to combat deforestation and forest degradation.

Recommendations to the Timber Trade

- Trade associations are an effective forum for communicating amongst the trade and between the trade and governments. In countries where trade associations lack resources, consider providing greater financial and other support.

- Develop mechanisms to help ensure consumers that products are from legally sourced raw materials.

- Work with US importers to identify species that can economically and technically substitute for species that are becoming in short supply.

- Issues of quality, moisture content, timely delivery and stable supply are amongst the most frequently cited concerns by US importers about imported tropical wood products. To maintain and expand market share in the US, manufacturers should address these issues, conform to voluntary as well as regulatory product standards, and improve their market intelligence to meet customer needs.

1.0 Introduction

Terms of Reference

The ITTO retained Seneca Cree Associates, LLC and Wood Resources International, LLC as co-consultants to provide a review and assessment of the US market for tropical wood products. The Terms of Reference are included in Appendix IV.

Scope

This report chronicles recent trends in the use of tropical wood products in the US wood market. It is organized mainly around the major groups of imported wood products – sawnwood, plywood, veneer, wood flooring, mouldings, and joinery products. The US wood furniture segment is also reviewed as a significant share of wood furniture imported into the US (and some furniture produced in the US) is manufactured using tropical wood products.

The demand for and use of tropical wood products is described in the context of the US wood market generally and by product segment specifically. The major wood product segments examined are:

- Hardwood Roundwood
- Hardwood Sawnwood
- Hardwood Plywood
- Hardwood Veneer
- Hardwood Mouldings and Builders Joinery
- Wood Flooring
- Wood Furniture

In most cases, estimates of both volume and value are provided for imports and consumption of tropical wood products. However, for builders joinery and wood furniture, only import values could be provided. Volume data specific to wood use or, more specifically tropical wood use, in these imported products are not available. We identify separately imports from ITTO producer member countries and also show data from Greater China (China, Hong Kong and Taiwan Province of China) combined with Singapore since these are large suppliers of tropical wood products and wood furniture to the US. For builders joinery and wood flooring, we make an assumption that 75% of US imports from ITTO producer countries and 50% of US imports from Greater China and Singapore are likely to be of tropical wood species.

Regional Context

The regional context for the US is North America which has approximately 17% of the world's forest cover but represents about 35% of the world's total consumption of sawnwood and wood panel products.[2] The lion's share of sawnwood consumption is softwood and practically all hardwood sawnwood consumed is of temperate species. North America consumes only about 580,000 m^3 of tropical sawnwood, equivalent to less than one percent of the world's total consumption. The US accounts for 60% of that amount, Mexico for 33% and Canada for the balance. North America consumes a much larger share of tropical hardwood plywood, an estimated 1.3 million m^3 or 6% of global consumption. The US accounts for an estimated 98% of the region's tropical hardwood plywood consumption. As imports have almost doubled in five years, the continent has become a major market for tropical plywood producers and accounted for 9% of global tropical plywood trade in 2005.

The US is by far the largest and most significant market of three North American countries. Although a significant producer and exporter (primarily to the US), Canadian wood products demand is less than 15% of that of the US. Mexican wood products demand is less than 5% of that of the US. Trade among the three countries is largely unencumbered because of the North American Free Trade Agreement (NAFTA). The US is a net importer from Canada, but a net exporter to Mexico. Because the US market dwarfs that of the other two countries, and because the intra-regional trade is so extensive, what happens in the US greatly affects the other two countries.

[2] Derived from FAO statistics.

Table 1.1: Estimated Consumption of Tropical Sawnwood and Plywood

	World [1]	North America [2]	*% of World Consumption*	US [3]	*% of World Consumption*
Consumption					
Tropical Sawnwood (000 m^3)	43,000	579	*1.3%*	353	*0.8%*
Tropical Plywood (000 m^3)	21,000	1,334	*6.3%*	1,322	*6.2%*

[1] Sourced from ITTO, 2005
[2] Derived from official trade using GTIS and adjusted for intra-regional North American trade, 2005
[3] Derived from official trade data using GTIS and adjusted for re-exports, 2005

Statistical Sources and Analysis

Data used for this project were from several sources. US production and shipments data were obtained from industry trade associations, trade journals and government economic surveys. The Global Trade Information Services database (GTIS) and the International Trade Commission DataWeb (ITC) were the main sources of US trade data.[3] These services provide user-friendly access to US trade data in a way that enables creating customized groupings of HTS codes. Trade data for over 70 countries can also be queried using GTIS. In addition, ITTO and FAO statistics were also utilized as were our own databases for various and relevant data. Approximately 75 interviews were conducted by phone or field visits to talk with importers, retailers and end-users of tropical wood products. We elected to canvass the trade in this manner as opposed to conducting a formal survey since we sought detailed information and response rates for a survey of the type and coverage we contemplated would likely have been very low. Throughout this assessment, references are made to the most common perceptions and views as expressed by those we interviewed.

US trade data originates with the US Census Bureau that compiles data collected and recorded by the US Bureau of Customs and Border Protection. The data are generally viewed as reliable although, as with all complex data collection systems, discrepancies and errors are known to occur. The emphasis placed on port security since the events of 2001 has brought closer scrutiny of imported shipments and the documents associated with them. The data collection systems have reportedly improved with new procedures and error-checking systems in place since 2001.

Data on US consumption and trade contained in the ITTO Annual Review are generally consistent with the data from other sources cited in this assessment. The one exception is tropical plywood imports. ITTO data for US imports of tropical hardwood plywood are consistently higher – for example, 2 million m^3 in 2005 as compared with 1.4 million m^3 based on our groupings of tropical plywood in the HTS import codes. US Government reporters for the ITTO data may include some portion of hardwood plywood products "not elsewhere specified" in the tropical wood data, something we did not do for this assessment.

Macroeconomic and industry sector indicators are from US Census Bureau (Census), Bureau of Labor Statistics (BLS) and the Federal Reserve Board (FRB). In some cases, data from US trade associations tend to be more timely if not more reliable than government statistics. Market demand (i.e. consumption) statistics cited in this report are generally from the various trade associations that represent the respective product sectors. Statistics from the following associations were used: American Forest & Paper Association (AF&PA), Western Wood Products Association (WWPA), APA-The Engineered Wood Association (APA), Hardwood Plywood and Veneer Association (HPVA), Window and Door Manufacturers Association (WDMA) and National Wood Flooring Association (NWFA).

Trade journals reporting on trends in the various sectors were also consulted. Among these were *Weekly Hardwood Review*, *Timber Processing*, *Floor Covering Weekly* and *Furniture Today*. Each of these periodicals publishes at least one issue annually that is devoted to industry trends and forecasts.

Terminology used in this report:

- The term 'wood products' is used in the report to refer to processed wood products in aggregate - sawnwood, plywood, moulding, veneer and builders joinery. 'Timber products' would include

[3] GTIS is a trade data reporting service available by subscription at: http://www.gtis.com/; the ITC Datweb is a free program accessible at: http://dataweb.usitc.gov/

industrial roundwood as well as processed wood products. Unless otherwise noted, wood furniture and furniture parts are considered separately.

- The terms 'softwood' and 'hardwood' are used instead of 'coniferous' and non-coniferous.' It should be noted as well that, in the US market, the term 'lumber' is more commonly used than 'sawnwood,' as is the term 'logs' instead of roundwood. US statistics utilize these terms in product descriptions.

- To better capture the trade flow from China to the US and recognizing that a significant volume of tropical wood products is processed or transshipped through Taiwan and Hong Kong, selected statistics for China, Hong Kong and the Province of Taiwan are grouped as 'Greater China.'

- In the context of this report, wood furniture refers to household and office furniture products that are primarily fabricated using wood products. Included are such items as kitchen cabinets, dining and bedroom furniture, wood chairs, wood upholstered furniture, bookcases and other wood case goods. As used in this report, import statistics for wood furniture and parts represent an aggregate of HTS import codes that are defined mainly by wood furniture and wood furniture parts.

Because measurement units and standards can be inconsistent, trade data have limitations. For example, the US records only selected species at the 10-digit HTS level; many are grouped together, and then not for all products. There are also no species data collected for wood flooring or builders joinery imports, let alone furniture. Trade data on plywood and veneer, particularly with respect to volume, suffer from the lack of standardized measures for reporting. Some inaccuracies in import data are likely because of inconsistent conversion factors. Veneer is produced in a multitude of thicknesses that make volume estimation difficult and, to some extent, speculative. In some cases, misclassification is known to be a problem, and in other situations, products may be classified appropriately for tariff purposes but nuances in code descriptions conceal their intended use. With this in mind, every effort was made to present the statistics within an appropriate context and as consistently as possible. The accompanying table displays the groupings of HTS 6-digit and 10-digit import codes used in this report (*Table 1.1*). A table with detailed 10-digit import codes for groupings of hardwood and related products and 2006 import values is included in Appendix II.

Table 1.2: HTS Codes for Hardwood and Related Products

Product Group	HTS Codes
Hardwood Roundwood	440331 440332 440333 440334 440335 440341 440349 440391 440392 440399
-- Tropical Roundwood	440331 440332 440333 440334 440335 440341 440349
Hardwood Sawnwood	440724 440725 440726 440729 440791 440792 440799
-- Tropical Sawnwood	440724 440725 440726 440729
-- Mahogany Sawnwood	4407240025 4407240030
Hardwood Plywood	441213 441214 441222 441229
-- Tropical Hardwood Plywood	441213 4412142510 4412143040 4412143140 441222 4412293540 4412293610 4412293640
Hardwood Veneer	440831 440839 440890
-- Tropical Veneer	440831 440839
Wood Flooring	4409202530 4409202540 4409202550 4409202560 4409292530 4409292550 4409292560 4418300000 4418711000 4418712000
-- Laminate Flooring	4411194000
Hardwood Moulding	4409204000 4409205000
Builders Joinery	4418
Wood Furniture and Parts	940161 940169 94019015 94019040 940330 940340 940350 940360 94039070
-- Wood Furniture	940169 940330 940340 940350 940360
-- Wood Furniture Parts	94019015 94019040 94039070

Studies and Reports on the US Tropical Timber Market

Very few studies have been undertaken to examine the role of imported tropical timber products in the US market. The most recent studies were conducted by the organization Metafore and culminated in a series of fact sheets available on line at: http://www.metafore.org/index.php?p=Global_Wood_Initiativeands=278.

Metafore surveyed 23 companies engaged in importing tropical sawnwood and plywood, asking among other things about which species (or trade names) they were importing in 2003. The results revealed that a majority of the companies were importing sawnwood and plywood with more than 10 different trade names at a time. The survey also indicated that only five of the 20 most common species were used for plywood.

In the early 1990s, researchers at the US Forest Service published a paper related to the end-uses of imported tropical plywood and veneer.[4] However, both the imported volume and uses for tropical plywood and veneer have changed considerably since that time. More recently, US Forest Service researchers have published several papers on the US hardwood sawnwood and wood furniture industries that were consulted for this assessment. These and other reports consulted for this assessment are noted in the section entitled, **Cited Reports and References**.

Table 1.3: Most Popular Tropical Wood Traded by US Importers, 2003

Trade Name	Scientific Name	Traded (%)	Origin
Jatobá (Brazilian cherry)	*Hymenea* sp	65%	Latin America
Big-Leaf Mahogany	*Swietenia macrophylla*	65%	Latin America
Ipê (Brazilian walnut)	*Tabebuia* sp	57%	Latin America
Purple heart	*Peltogyne* sp	57%	Latin America
Meranti	*Shorea* sp	48%	Asia
Massaranduba	*Manilkara bidentata*	48%	Latin America
Virola	*Virola* sp	43%	Latin America
Cumaru (Brazilian teak)	*Dipteryx odorata*	43%	Latin America
Cambara	*Erisma uncinatum*	39%	Latin America
Spanish Cedar	*Cedrela odorata*	39%	Latin America
Keruing	*Dipterocarpus* sp	39%	Asia
Teak	*Tecktona glandis*	35%	Asia
Faveira	*Parkia pendula*	35%	Latin America
Santos-Mahogany	*Myroxylon balsamum*	35%	Latin America
Sapelle	*Entandrophragma cylindricum*	30%	Africa
Goncalo-alvez	*Astronium lecointe*	30%	Latin America
Tauari	*Couratari guianensis*	30%	Latin America
Marupa	*Simarouba amara*	30%	Latin America
Aniegre	*Aningeria altissima*	26%	Africa
Peruvian Walnut	*Juglans neotropica*	26%	Latin America
Aniegre	*Aningeria* sp	26%	Africa

Source Metafore

[4] Smith, P, Haas, M. and Luppold, W. “An Analysis of Tropical Hardwood Product Importation and Consumption in the US.” Forest Products Journal. 45(4): 31-37.

2.0 US Economy and Wood Market: Trends and Prospects

Over the span of the past fifty years, consumption of wood products in the US has increased at a compound annual rate of 1.5%. The mix of products has changed to include more structural panels, composite panels, and engineered wood products. In 2005, the most recent cyclical demand peak, US wood products consumption was estimated at approximately 220 million m^3 (*Figure 2.1*). Hardwood products account for approximately 15% of total wood products consumption in the US.

The US wood market is driven mainly by construction activity and, more specifically, by the strength or weakness in new housing construction and renovations. Unlike in many other countries of the world, American housing is typically of wood-frame construction. More than 90% of new homes are constructed using wood framing materials. New housing construction is expected to be less robust than during the past five years but still relatively strong by historical comparison to other economic cycles. Demand for imported wood products – and particularly, finished products – can be expected to continue to increase as US manufacturing (in furniture and flooring) is displaced by less-expensive imported products. The US dollar, which has weakened by as much as 25% against major currencies since 2001, has bolstered US wood exports and has tempered imports from Latin America, Europe and Africa. However, a big surge in US imports has been from China whose currency is tightly controlled -- a major point of contention in economic relations between the US and China.

Since 2000, the US hardwood industry has been transformed by globalization which has resulted in a dramatic increase in imports and a shift to overseas manufacturing of furniture that has reduced domestic demand. US exports of hardwood products have fared well in this transition, but imports have increased at a more rapid pace. This has particularly been the case for hardwood plywood and hardwood flooring. The largest beneficiary of the surge in US imports is China. All wood products (Chapter 44) imports from China have tripled in the past five years; hardwood and related product imports have more than doubled. Imports of tropical wood products have also steadily increased since 2001 as have all wood and furniture products from ITTO-producer countries.

Imports of wood and related products totaled US$22.9 billion in 2006, while exports totaled US$6.3 billion. Thus, net imports of wood and wood products represent approximately 17% of the total combined value of domestic and imported shipments. In addition, the US is a huge importer of furniture fabricated all or mostly of wood. Since 2000, about half of domestic wood furniture manufacturing has relocated overseas, mostly to China and Southeast Asia. Wood furniture and parts imports were valued at US$15.6 billion in 2006.

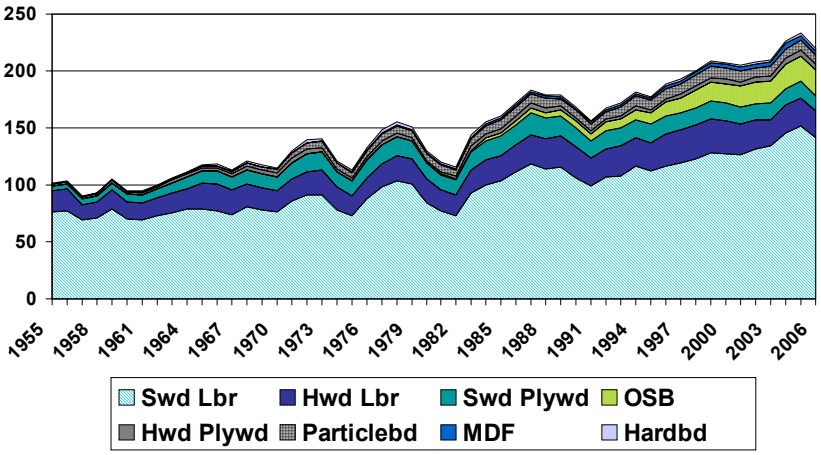
The near-term outlook for the US economy is for steady but slower growth. The current expansion is in its 5^{th} year following a brief and mild slowdown in 2001 – 2002. The consensus forecast is for GDP growth to be in the 2% to 3% range. Certain elements of the economy are showing some risk of a major slowdown, but most economists are not forecasting a recession. Energy prices have been rising, although inflation overall has been kept in check by a series of increases in the federal funds rate that now stands at 5.25%. The softening in the current economy is being influenced in large part by a downturn in housing construction that began during 2006. From record 2.1 million housing starts in 2005, the sector slowed to 1.6 million starts on an adjusted annual basis in the 4Q/06. Housing starts are forecast to decline by 15% in 2007. And overall US wood demand has begun to soften from record and near record levels. Moreover, the US dollar has weakened against many currencies that are linked to exporters of wood products to the US. Against the Brazilian Real, for example, the US dollar exchange rate has declined by almost 30% since 2003. Except for hardwood plywood imports which increased by 21%, US imports of all other hardwood products declined in 2006. *Table 2.1* displays the major trends and outlook for macroeconomic indicators of the US economy.

Table 2.1: Economic Indicators and Consensus Forecast

	2004	2005	2006	2007 Forecast	2008 Forecast
GDP -- % Change	3.9	3.2	3.4	2.7	3.0
Inflation Rate -- % Change	2.5	3.2	4.0	2.4	2.3
Non-Residential Fixed Investment -- % Change	5.9	6.8	7.4	5.3	5.3
Housing Starts – Million Units	1.96	2.07	1.8	1.53	1.6
Merchandise Trade Balance – US$ Billion	-547.3	-665.4	-782.7	-742	-731
Industrial Production Index. -- % Change	2.5	3.2	4.0	2.4	3.1

Source: Blue-Chip Economic Indicators

Figure 2.1: US Wood Products Consumption, 1955 – 2006



3.0 PROFILE OF US WOOD PRODUCTS MARKET

The US wood product business has a long and storied history. The first manufacturing enterprise in Colonial America was a sawmill established soon after the first settlers arrived in Jamestown, Virginia in 1607. Wood products manufacturing continued to be one of the main manufacturing enterprises in the United States until the Industrial Revolution in the late 1800s. Importing tropical woods also dates back to colonial America when making furniture from mahogany and other imported species became well-established as an American craft. Some importers today are four and fifth generation family businesses that date back to Colonial America or the early years of the American nation.

Today, wood products manufacturing is a small but significant component of the overall economy, representing 2.8% of manufacturing GDP. With about one-third of the US forested, timber production is a highly significant economic contributor in at least 20 states. Employment in the US wood products industry is about 560,000 and production workers in the industry earn an average of US$13.39 per hour. US manufacturing wages are generally comparable to those in Europe, Canada, Japan and Australia, but significantly higher than all other Asian and Latin American countries. By comparison, hourly wages in manufacturing in Brazil are US$4.09 per hour and less than US$1.00 per hour in China.[5]

In a global perspective, the US is a dominant player. It is the world's largest producer, consumer and importer of both primary and secondary wood products. According to US Census Bureau statistics, the value of domestic industry shipments for the wood products industry totaled US$112 billion in 2005. Given a modest downturn in 2006, we estimate total shipments last year at US$100 billion. Imports of wood and related products totaled US$22.9 billion in 2006, while exports totaled US$6.3 billion. Thus, net imports of wood and wood products represent approximately 17% of the combine value of industry shipments and imports. In addition, the US is a huge importer of furniture fabricated all or mostly of wood. Wood furniture and parts imports were valued at US$15.6 billion in 2006. *Table 3.1* highlights the major economic data characterizing the US wood products industry.

Table 3.1: US Wood Products Industry Data

(US$ millions except as noted)	2000	2001	2002	2003	2004	2005	2006	% Change* 00 - 06
Value of Industry Shipments	93,668	87,250	89,019	92,068	104,135	112,017	100,000	1.1%
Sawmills and Wood Preservation	28,071	25,924	25,928	26,821	30,529	32,786	28,000	0.0%
Veneer, Plywood and Engineered Wood Products	21,264	19,636	20,195	21,725	24,844	26,608	22,000	0.6%
Other	44,333	41,690	42,894	43,521	48,761	52,622	50,000	2.0%
Total employment (thousands)	613	574	555	538	550	559	560	-1.5%
Production Workers (thousands)	506	468	449	433	444	453	451	-1.9%
Average Hourly Earnings (US$)	11.63	11.99	12.33	12.71	13.03	13.16	13.39	2.4%
Trade Data								
Chap. 44 Imports	15,449	14,960	15,720	16,560	22,910	23,773	22,911	6.8%
Chap. 44 Exports	6,176	5,100	4,928	4,965	5,652	5,850	6,260	0.2%
Wooden Furniture Imports	8,803	8,809	10,452	11,704	13,363	14,782	15,646	10.1%
Wooden Furniture Exports	1,484	1,280	1,175	1,410	1,537	1,557	1,717	2.5%

Sources: US Census Bureau, BLS, Global Trade Information Service (GTIS) and Seneca Creek (SCA) estimates

*Compounded annual growth rate

Drivers of Wood Products Demand

The US wood market is driven mainly by construction activity and, more specifically, by the strength or weakness in new housing construction and renovations. Unlike in many other countries of the world, American housing is typically of wood-frame construction. More than 90% of new homes are constructed using wood framing materials. This applies to both single-family houses as well as multifamily units of four

[5] US Bureau of Labor Statistics

stories or less. US housing starts have been especially robust over the past five years, averaging 1.9 million units annually. About 75% of new housing is single-family units. The size of single-family houses has steadily increased since the 1970s and last year averaged 226 square meters. The total floor area of new residential construction in 2006 was 365 million square meters. Not only are new houses increasing in size, but they are also being constructed with more amenities, including higher grades of flooring, more millwork and outside decks. Expenditures on repair and renovations of existing homes have also been very high during the past five years. Wood products demand closely correlates with all of these trends. Obviously, beyond construction, wood products find use in a plethora of other applications ranging from furniture to containers to mining and railroads. The strength of the general economy, employment, household formations, disposable income, etc. is also important drivers of overall demand for wood products.

Structural Wood Market

Because wood construction is so paramount, the vast majority of wood products consumed in the United States are used in structural applications. We estimate that approximately 80% of the total US market for solid wood products is based on structural applications. The single largest commodity wood product produced and sold in the US is softwood sawnwood used for structural framing. US softwood sawnwood consumption in 2006 totaled an estimated 143 million m^3. Approximately 43% of softwood sawnwood consumption goes into residential construction and another 31% is consumed in residential repair and remodeling. The balance is used in commercial building, packaging and industrial applications such as mining and furniture. The US is a major importer of softwood sawnwood, principally from Canada but also a small but increasing share from Latin America and Europe. About 39% of total softwood sawnwood consumption is supplied by imports.

Structural panels, i.e. oriented strand board (OSB) and softwood plywood, are the second most prevalent type of wood product produced and sold, are also used mainly in construction applications. OSB has surpassed softwood plywood as the preferred product for residential housing construction. Structural panel demand in 2006 totaled an estimated 40.3 million m^3. Again, the US is a major importer of structural panels, most notably OSB from Canada. Approximately 31% of structural panel demand is supplied by imports. In addition, engineered wood products such as I-Joists, laminated veneer lumber (LVL) and glue laminated beams – all usually made from softwood – account for a significant and growing share of the structural wood market. These products can be produced to meet specific structural strength and span requirements.

Non-Structural Wood Market

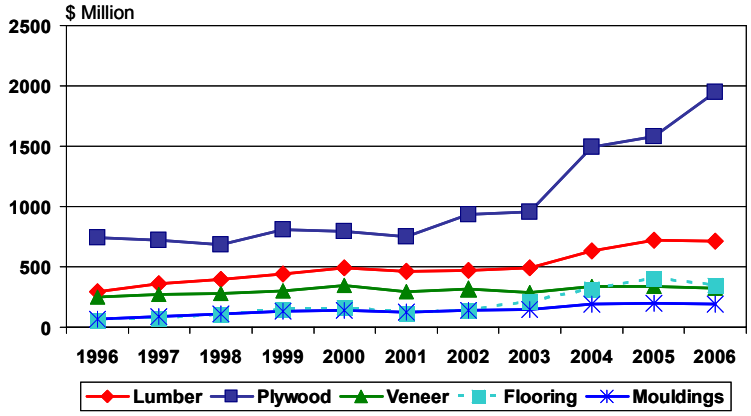
About 20% of the US solid wood market is characterized by non-structural wood uses such as flooring, paneling, furniture, packaging and industrial uses. The major non-structural wood products are well-known: hardwood sawnwood and composite panels such as particleboard, medium density fiberboard (MDF) and hardboard, and softwood sawnwood used in industrial applications. The US hardwood sawnwood segment of the wood market is much smaller when compared with softwood, but very large by global standards. Hardwood represents about 15% of the total US sawnwood market, but that amounts to 25 million m^3 of consumption. All but a small volume of hardwood sawnwood is produced in the US and Canada, and while the US is a net importer of softwood sawnwood, it is a net exporter of hardwood sawnwood. In 2006, the US produced an estimated 26 million m^3 of hardwood sawnwood, exported approximately 3.1 million m^3 and imported 1.6 million m^3.

US Hardwood Products Imports

Imports of forest products made from hardwood have increased substantially during the past ten years. Only a small percentage is imported in roundwood form, mostly from Canada that includes a large amount of pulpwood. Hardwood roundwood imports from non-Canadian countries have rarely exceeded 50,000 m^3 annually, and over the past decade there have been only occasional imports of tropical roundwood. The total volume of tropical roundwood imports averaged just 1,454 m^3 annually from 2001 to 2006.

The total value of imported hardwood products in 2006, not including furniture and builders joinery, was US$3.5 billion. During the past five years, the value of imports has more than doubled, with the biggest import gain occurring in hardwood plywood (*Figure 3.1*).

Figure 3.1: US Imports of Hardwood Forest Products

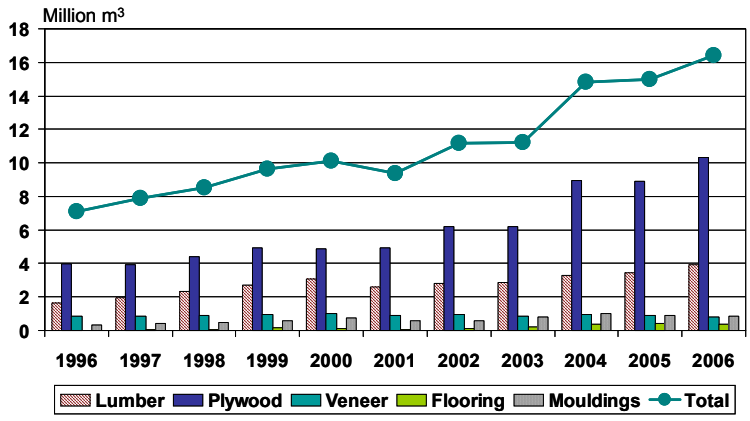


Source: GTIS and ITC

Imports of processed forest products have increased in both volume and value. Calculating the roundwood equivalent (RWE m^3) needed to produce imported forest products illustrates the aggregate trend in hardwood product imports. A roundwood equivalent is computed by using yield factors to calculate the roundwood input necessary to convert the major product categories (sawnwood, plywood, veneer, flooring and mouldings) to cubic meters of finished product (*Figure 3.2*).

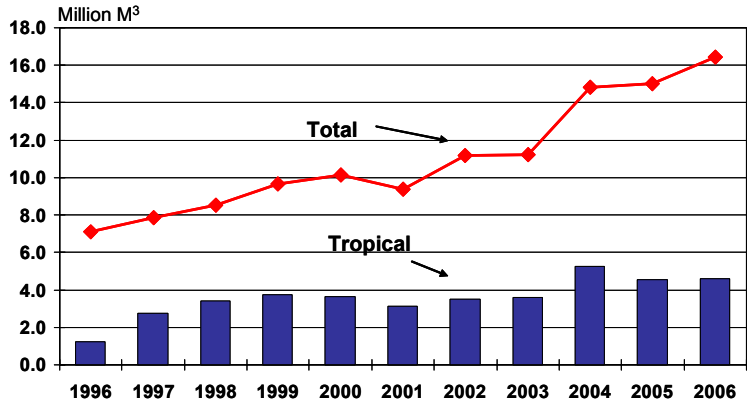
In 1996, the US imported hardwood forest products (not including wood furniture and joinery) equivalent to 7.1 million m^3 of roundwood. By 2006 this volume had increased to 16.4 million m^3 (RWE). This can be contrasted with the total US harvests of almost 200 million m^3 of hardwood sawlogs and veneer logs in 2001 (based on most recent US Forest Service data). Both plywood and veneer experienced large changes in volume, which have gone up by 5.7 million m^3 (RWE) and 2.3 million m^3 (RWE), respectively. Flooring imports also increased more then ten-fold since 1996 and moulding imports were up more than 260% over the same time period. Calculating a roundwood equivalent for imports of tropical wood products reveals that they have not increased very much in aggregate (*Figure 3.3*). The largest increases in US hardwood product imports have clearly been in products of temperate species.

Figure 3.2: US Hardwood Imports in Roundwood Equivalents (RWE)



Source: GTIS and WRI Estimates

Figure 3.3: US Imports of Hardwood and Tropical Wood Products (RWE)

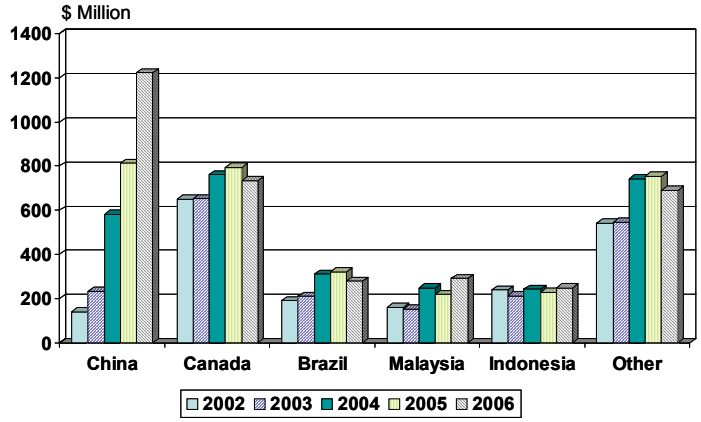


Source: WRI estimates

Expanded imports have largely been the result of a production surge in low-cost producing countries such as China and Brazil, thereby shifting the US supply sources from domestic manufacturers to overseas suppliers. The biggest increases in imports have been that of plywood, flooring and mouldings as a consequence of major expansion of the Chinese production capacity the past few years.

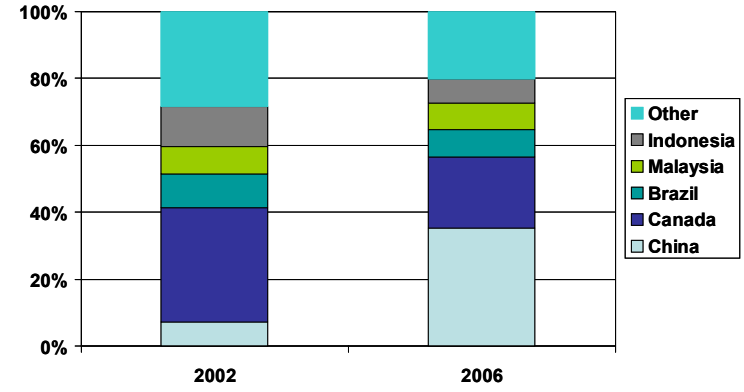
US imports of Chinese hardwood forest products in 2006 were valued at US$1.2 billion dollars and represented 34% of the total. ITTO-producer countries supplied hardwood products to the US valued at US$1.1 billion, or approximately 31% of total hardwood imports. The largest suppliers from ITTO-producer countries were Brazil, Malaysia and Indonesia (*Figure 3.4*). Canada was for a long time the major supplier of hardwood forest products to the US, but in 2005, China surpassed Canada to become the dominant supplier with an import market share of 32% in value terms (*Figure 3.5*). These recent developments have reduced the Canadian market share to 21%, which is down from 34% just five years ago. Canadian exports to the US were down to 734 million dollars in 2006, or 60 million lower than in the previous year. Other major suppliers to the US in the past several years included Malaysia, Brazil and Indonesia.

Figure 3.4: US Hardwood Imports, Selected Countries



Source: GTIS and ITC

Figure 3.5: Sources of US Hardwood Imports, 2002 and 2006



Source: GTIS and ITC

US Tropical Wood Market

Although a huge wood consumer, the US represents just 1% of global consumption of tropical wood products, and they, in turn, comprise only about 1% of US consumption of all wood products. Thus, tropical timber species tend to occupy very particular and important niches in the US market. They are used in high-valued market segments such as furniture, cabinets, flooring, architectural woodwork, decking, mouldings and specialized industrial applications, such as in marine uses and truck beds. In some applications, they compete directly with temperate domestic species. For some uses, such as in boat-building and decking, tropical wood has distinct performance advantages. Where tropical wood species compete with domestic varieties, species preference is often a function of taste and fashion. For example, in recent years, consumers have gravitated toward darker woods when choosing cabinets or flooring.

Almost all of what the US imports is in the form of primary or secondary processed products. The US imports almost an insignificant volume of tropical roundwood. In 2006, tropical hardwood log imports totaled just 1,500 m^3, about the equivalent of the volume of wood on less than ten average hectares of tropical forest land. And at 364.5 thousand m^3, tropical sawnwood imports account for only a tiny fraction of the total US sawnwood market, and less than 2% of the hardwood sawnwood market. However, tropical sawnwood imports comprise 22% of US hardwood sawnwood imports by volume and 39% by value. Because of an abundant supply of domestic hardwoods, imported tropical sawnwood is sold mainly for high-end, high-value uses where its properties, color or machining characteristics allow a price premium. The average value of imported tropical sawnwood in 2006 was US$752/ m^3. This compares with the average import price for softwood sawnwood at US$142/ m^3 and temperate hardwood sawnwood at US$345/ m^3.

Tropical imports figure more prominently in the hardwood plywood and flooring segments than in sawnwood. US consumption of hardwood plywood totaled 5.6 million m^3 in 2006, of which imports accounted for 4.4 million m^3 or 79%. The majority of US plywood imports are of temperate species, but plywood with at least one face or layer of tropical wood accounted for 1.3 million m^3 -- 32% of imports and 25% of total US consumption. Unlike imported tropical sawnwood, the preponderance of which is used in high-valued applications, imported plywood has much more varied quality and price points. For example, lower cost plywood is used as underlayment or backs of cabinet cases; high-grade plywood might be used in exposed architectural applications or for cabinet fronts and sides. In 2006, the US also imported approximately 28 million m^2 of tropical veneers.

Some of the fastest growth rates in tropical hardwood imports have been in flooring. Consumption of hardwood and laminate flooring in 2005 reportedly totaled 222 million square meters with an import market share of 25%. Approximately 70% of imports originated from ITTO producer countries, Greater China, and Singapore. While trade statistics fail to reveal the species mix of hardwood flooring, the majority of these imports was likely in whole or in part manufactured using tropical species. We estimate that approximately 45% of hardwood flooring imports utilized tropical wood species in 2006.

In addition to the above-mentioned wood products, imports of mouldings, joinery products and wooden furniture represent significant use of tropical wood products in the US market. Trade data are not sufficiently specific to distinguish between tropical and other species in these products. A reasonable assumption would be that 75% of imports from ITTO producer countries and 50% of imports from Greater China would contain

tropical species. If that assumption is valid, then about 700,000 m^3 equivalent of flooring, moulding and joinery products of tropical woods were imported into the US in 2006. We estimate that about half of the US$192 million of imported hardwood mouldings (US$81 million), and between 15 and 20% of US$2.8 billion in total US builders joinery imports, or approximately US$509 million in value, are fabricated using tropical wood species. Again, if these assumptions are valid, then the total value of the tropical wood products market in the US comes to an estimated US$1.6 billion, not including imported furniture made of tropical woods. Some portion of US$15.6 billion of US wood furniture and parts imports is also of tropical origin, although a reliable estimate is not possible at this time.

Wood use in furniture is difficult to estimate. Some US manufacturers feature furniture of tropical species. Many more utilize tropical sawnwood or plywood as components, such as drawer bottoms or interior frames, but most tropical wood use in furniture is likely found in furniture imports. Wooden furniture imports from ITTO producer members provide a rough indication of the extent of tropical wood use in furniture. ITTO producer countries represent approximately 20% of wooden furniture imports. As significant a market share as this represents, Chinese imports of wooden furniture account for an additional 49%. Thus, wooden furniture imports from ITTO producer countries and China represent nearly 70% of all US wooden furniture imports. Not all of these imports are necessarily fabricated using tropical timber species, but many use tropical species in whole or in part. While we are unable to provide a formal estimate, it's likely that tropical timber species are the predominant species used in about half of US wooden furniture imports. *Tables 3.2* and *3.3* detail estimates of the value and volume of US tropical wood imports since 2001. The share of tropical wood species in further processed products is calculated by assuming that 75% of imports from ITTO-producer countries and 50% of imports from Greater China and Singapore are of tropical species. Since the same assumption is used for both volume and value, the reliability of these estimates is somewhat reduced.

Table 3.2: Value of US Imports of Tropical and Further Processed Wood Products

	2001	2002	2003	2004	2005	2006	% Annual Growth*
Tropical Species Imports -- US$ million							
Roundwood	0.7	0.8	0.8	1.0	0.7	0.9	5.2%
Sawnwood	185.1	160.3	162.8	217.9	251.8	274.1	8.2%
Plywood	266.1	322.1	325.9	547.1	475.8	531.2	14.8%
Veneer	31.6	31.0	31.9	35.8	40.9	39.6	4.6%
Subtotal	483.6	514.3	521.3	801.8	769.2	845.8	11.8%
Further Processed Wood Products – US$ million							
Hardwood Flooring	114.1	140.3	212.2	318.5	406.8	347.4	24.9%
Hardwood Moulding	123.0	139.1	147.1	193.9	200.2	191.9	9.3%
Builders Joinery	1,639.1	1,765.2	1,880.4	2,479.1	2,681.8	2,840.6	11.6%
Wooden Furniture	8,802.5	10,444.5	11,694.9	13,352.6	14,773.0	15,634.9	12.2%
Subtotal	**10,678.7**	**12,489.2**	**13,934.7**	**16,344.1**	**18,061.8**	**19,014.9**	**12.2%**
Estimated Tropical Share of Further Processed Products -- US$ Millions							
Hardwood Flooring	37.3	43.0	65.6	130.4	184.7	145.1	31.2%
Hardwood Moulding	43.7	51.5	54.5	76.5	77.7	81.1	13.2%
Builders Joinery	225.4	265.6	284.9	372.2	419.4	509.3	17.7%
Wooden Furniture	---	---	---	---	---	---	---
Subtotal	**306.5**	**360.2**	**405.0**	**579.1**	**681.8**	**735.6**	**19.1%**
Estimated Value of US Imports Of Tropical Wood Products -- US$ Millions							
	790.1	**874.4**	**926.3**	**1,380.9**	**1,451.0**	**1,581.4**	**14.9%**

*Compound Annual Growth
Source: GTIS and Seneca Creek Associates

Table 3.3: Volume of US Imports of Tropical and Further Processed Wood Products

	2001	2002	2003	2004	2005	2006	% Annual Growth*
Tropical Species Imports							
Roundwood (000 m3)	1.5	1.3	1.5	1.7	1.3	1.5	-0.1%
Sawnwood (000 m3)	276.1	231.6	259.0	340.7	354.0	364.5	5.7%
Plywood (000 m3)	955.3	1,152.7	1,146.3	1,727.1	1,380.1	1,422.3	8.3%
Veneer (million m2)	22,512	22,690	25,775	27,020	30,490	27,908	4.4%
Further Processed Wood Products							
Hardwood Flooring (000 m2)	7,952	10,628	14,535	21,089	25,041	20,218	20.5%
Hardwood Moulding (000 lineal m)	146,094	144,698	186,674	235,553	211,309	200,387	6.5%
Estimated Tropical Share of Further Processed Products							
Hardwood Flooring (000 m2)	3,069	3,912	5,448	9,266	11,574	9,139	24.4%
Hardwood Moulding (000 lineal m)	77,125	74,049	82,282	104,081	97,530	102,482	5.9%

*Compound Annual Growth

Source: GTIS and Seneca Creek Associates

4.0 Tariffs and Related Issues

Tariffs

By comparison to many other countries, US tariffs on most imported goods, including wood products, are generally low. In the Harmonized Tariff Schedule (HTS), the "general" rates of duty refer to tariffs imposed on goods from countries with which the US has “normal trade relations” (NTR). From NTR countries, most Chapter 44 articles such as wood fuel, roundwood, sawnwood and veneer can enter the United States duty-free. In fact, more than 80% of wood products enter the United States free of duty. According to the ITC, the trade-weighted average duty rate on the remainder was a fraction of 1 percent ad valorem in 2006. *Table 4.1* summarizes applied tariff rates for wood products by 4-digit HTS code.

The most significant duties are applied on selected hardwood plywood imports. Approximately 60% of hardwood plywood imports enter free of duty, but the remaining 40% are assessed duties ranging from 3.4% to 8% resulting in a trade-weighted average duty rate for all hardwood plywood imports of 3.2%. Tariffs on imported hardwood plywood are generally 8% with lower or zero rates applied to some types of plywood. For example, plywood with a birch veneer face or a particleboard core enters duty-free. Certain types of plywood with Spanish cedar, Douglas fir or red pine faces have tariffs ranging from 3.4% to 5.1%.

Misclassification

With 30-40 million import transactions annually, errors and misclassification are bound to occur. Most are inadvertent, some result from the varying interpretations of specific HTS codes or product descriptions, and some – by and large, very few -- are a conscious attempt to circumvent tariffs. For example, hardwood plywood and wood flooring are product groups where there have been allegations of misclassification.

Because of confusion (and misclassification) regarding engineered flooring products, several changes in the HTS classification system were made that took effect on January 1, 2007. Among the changes was the reclassification of multi-layer flooring and parquet panels from sub-headings in 4412 (i.e. plywood) to a new grouping in 4418 (4418.72.90). The same general duty rate of 8 percent that applies to tropical plywood is assessed under the new category. Several new 8-digit classifications under HTS 4409 supersede previous headings to more clearly distinguish between wood siding, flooring, and mouldings. Drilled or notched sawnwood that had previously been included in 4407 by US Customs is now classified in 4418. In addition, the list of tropical species to be separately identified at both the eight and ten-digit levels of sawnwood products has been expanded.

US Customs officials have investigated complaints that hardwood plywood with a tropical veneer face on one side and a birch veneer face on the other were being imported duty-free. They found, for example, that plywood made from okoumé and birch was entering duty-free even though the okoumé surface was the veneer on the surface to be exposed in use. US rules require that applicable duties be assessed on plywood based on its “useable face,” most often that of the tropical species when plywood has a tropical face layer. As a consequence of adverse findings, US officials have increased inspections and tightened enforcement of the tariff regulations.

Table 4.1: Summary of US Tariffs on Wood Products by 4-Digit HS Code

HS#	Description	Gen	Comment
4401	Fuel wood, in logs, in billets, in twigs, in faggots or in similar forms; wood in chips or particles; sawdust and wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms:	Free	
4402	Wood charcoal (including shell or nut charcoal), whether or not agglomerated:	Free	
4403	Wood in the rough, whether or not stripped of bark or sapwood, or roughly squared:	Free	
4404	Hoopwood; split poles; piles, pickets and stakes of wood, pointed but not sawn lengthwise; wooden sticks, roughly trimmed but not turned, bent or other worked, suitable for the manufacture of walking-sticks, umbrellas, tool handles or the like; chipwood and the like:	Free	
4405	Wood wool; wood flour:	3.2%	
4406	Railway or tramway sleepers (cross-ties) of wood:	Free	
4407	Wood sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, of a thickness exceeding 6 mm:	Free	
4408	Sheets for veneering (including those obtained by slicing laminated wood), for plywood or for other similar laminated wood and other wood, sawn lengthwise, sliced or peeled, whether or not planed, sanded, spliced or end-jointed, of a thickness not exceeding 6 mm:	Free	
4409	Wood (including strips and friezes for parquet flooring, not assembled) continuously shaped (tongues, grooved, rebated, chamfered, V- jointed, beaded, molded, rounded or the like) along any of its edges, ends, or faces, whether or not planed, sanded or end-jointed:	Free – 4.9%	Wood continuously shaped along any of its ends – 3.2% Wood dowel rods if sanded, grooved or otherwise advanced in condition – 4.9%
4410	Particle board and similar board (for example, oriented strand board and waferboard) of wood or other ligneous materials, whether or not agglomerated with resins or other organic binding substances:	Free	
4411	Fibreboard of wood or other ligneous materials, whether or not bonded with resins or other organic substances:	Free – 6.0%	Some specialty fibre board is assessed 3.9% - 6% duties.
4412	Plywood, veneered panels and similar laminated wood:	8%	With face ply of birch: Free With face ply of Spanish cedar: 5.1% With face ply of European red pine: 3.4% With face ply of Doug fir or pine: Free - 5.1% With layer of particleboard: Free
4413	Densified wood, in blocks, plates, strips or profile shapes:	3.7%	
4414	Wooden frames for paintings, photographs, mirrors or similar objects:	3.9%	

(continued on next page)

Table 4.1 (con't): Summary of US Tariffs on Wood Products by 4-Digit HS Code

4415	Packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets, box pallets and other load boards of wood; pallet collars of wood:	Free – 10.7%	Other than packing boxes, cases and pallets with solid sides, lids or bottoms and those used for harvesting fruits and vegetables: 10.7%
4416	Casks, barrels, vats, tubs and other coopers' products and parts thereof, of wood, including staves:	Free – 3.2%	Staves and hoops; tight barrelheads made of hardwood: 3.2%
4417	Tools, tool bodies, tool handles, broom or brush bodies and handles, of wood; boot or shoe lasts and trees, of wood:	Free – 5.1%	Certain tools and tool handles of wood: 5.1%
4418	Builders joinery and carpentry of wood, including cellular wood panels, assembled parquet panels, shingles and shakes:	Free – 4.8%	Windows: 3.2% Doors: 4.8% Formwork: 3.2% Beams, trusses, etc.: 3.2%
4419	Tableware and kitchenware, of wood:	3.2% - 5.3%	
4420	Wood marquetry and inlaid wood; caskets and cases for jewelry or cutlery, and similar articles, of wood; statuettes and other ornaments, of wood; wooden articles of furniture not falling in Chapter 94:	Free – 4.3%	Cases, statuettes: 3.2% Unlined boxes: 4.3%
4421	Other articles of wood:	Free – 10.7%	Hangers: 3.2% Sanded dowel pins: 4.9% Wood blinds, shutters and screens: 10.7%
9401	Seats (other than those of heading 9402), whether or not convertible into beds, and parts thereof:	Free	Seats with wooden frames
9403	Wooden furniture and parts:	Free	

Tariff Preference Programs and Free Trade Agreements (FTAs)

Some commodities are eligible for preferential tariff programs that affect dutiable items. The largest and most important of these is the General System of Preferences (GSP) that grants tariff-free access for products imported from developing countries. Eligibility for GSP treatment, however, is a function of certain rules. GSP eligibility for a commodity can be denied or revoked if US imports of a specific product from that country exceed US$125 million, or if those imports are more than 50 percent of total imports of that product from all countries. GSP treatment can also be denied based on other criteria related to worker rights, protecting intellectual property rights, or if it results in certain adverse effects on US commerce. The GSP program is periodically reviewed, updated and renewed by the US Congress. The GSP program was most recently renewed in December, 2006 and extended through 2008. Each year, the Office of the United States Trade Representative (USTR) reviews GSP eligibility for countries and products.

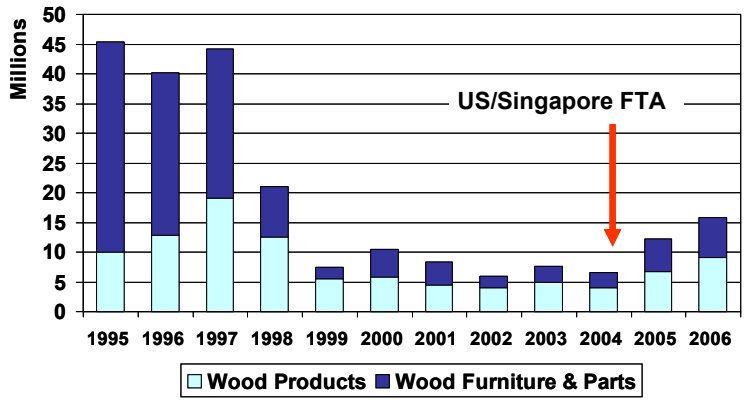
GSP eligibility extends to plywood imports from some, but not all, developing countries. The four largest sources of US imports of tropical hardwood plywood are: Indonesia, Malaysia, China and Brazil. Of these, all but China are beneficiary countries under the GSP program. However, plywood imports from Malaysia are not currently eligible for GSP treatment, nor are most plywood imports from Brazil. Indonesia was granted GSP eligibility for plywood (i.e. duty-free treatment) as an economic assistance measure following the tsunami natural disaster in 2005. Thus, tropical hardwood plywood imports from China, Malaysia and Brazil are assessed duties, while hardwood plywood from Indonesia enters duty-free. Imports from Indonesia jumped during 2006 following the granting of GSP treatment to plywood at the end of 2005, but Indonesian plywood production is significantly lower than it was five years ago.

In addition to the GSP program, the US has entered into free-trade agreements (FTA) and/or has undertaken certain economic and trade initiatives with other countries or regions that enable goods to be imported from those areas without duties (or with duties to be phased out over a period of time). The US Congress grants the President "fast-track" authority to negotiate cohesive free trade agreements that the Congress can then ratify or reject in their entirety. The current Congressional mandate expires at the end of June, 2007 unless reauthorized. With the change in party control in the last election, the US Congress is insisting that more

rigorous labor and environmental standards are to be included in FTAs. To date, the US has negotiated 10 FTAs involving 13 trade partners. The most significant of these with respect to wood products generally was the 1993 North American Free Trade Agreement (NAFTA). Except for duties related to a separate softwood sawnwood agreement between Canada and the US, NAFTA phased-out tariffs on wood products (mainly those that existed on certain panel products) in trade between the US, Canada and Mexico.

More specific to tropical wood trade, the US and Singapore reached agreement on an FTA in 2003 that some have argued has facilitated transshipments of tropical wood products through Singapore to the US from other countries in Southeast Asia.[6] They point to dramatic increases in US wood imports from Singapore since the implementation of the FTA in 2004. While this is partially correct, a closer examination reveals that, while US wood product imports from Singapore increased in 2005 and 2006, they remain significantly below levels of the late 1990s. Imports in 2006 totaled approximately US$15 million as compared with an average of nearly US$26 million in the 1990s (*Figure 4.1)*. Moreover, US wood products trade with Singapore is relatively small with most of the trade involving manufactured products. About 24% of US wood imports from Singapore are represented by sawnwood, a little over one-third (37%) is represented by wooden furniture, and the balance is almost all in mouldings, dimension and other kinds of joinery products. The US imports an almost insignificant volume of roundwood from Singapore. Allegations that the US-Singapore FTA has exacerbated illegal logging and illegal trade are not well-founded, at least not based on official trade statistics, but interdictions of illegal log shipments between other Southeast Asian countries and Singapore have been reported by NGOs.

Figure 4.1: US Wood and Wood Furniture Imports from Singapore



Negotiations have been completed on three new FTAs with Colombia, Panama and Peru and are awaiting congressional approval. The US is currently in bi-lateral discussions or negotiations with several other countries to establish free trade or similar agreements and is attempting to negotiate a 34-member Free Trade Area of the Americas (FTAA). An FTA was just completed with South Korea is pending Congressional review. Negotiations for an FTA with Malaysia have a May 2007 target for completion. *Table 4.2* lists bi-lateral and regional trade agreements that have been implemented or are in process.

As noted above, FTAs are increasingly including labor and environmental provisions or side agreements. The Singapore FTA provided for an environmental side agreement. The side agreements generally pledge cooperation and information exchanges in addressing environmental and labor concerns arising from increased trade. The US Congress is now asking that more rigorous environmental and labor standards be incorporated directly into the text of the agreements themselves.

[6] Environmental Investigation Agency (EIA). “America’s Free Trade for Illegal Timber: How US Trade Pacts Speed the Destruction of the World’s Forests.” Available at: http://www.eia-international.org/files/news312-1.pdf

Table 4.2: Bi-Lateral and Regional Trade Agreements

Bilateral Free Trade Agreements[1] (Year Implemented or Status)	**Regional Agreements**
Israel (1985)	North American Free Trade Agreement[3] (1993)
Jordan (2001)	Southern Africa Customs Union (SACU)[2] (Initiated)
Chile (2004)	Free Trade Area of the Americas[4] (stalled)
Singapore (2004)	US-Middle East Free Trade Area (MEFTA) (Initiated)
Australia (2005)	Asia Pacific Economic Cooperation (APEC)[5] (1989)
Bahrain (2006)	
Morocco (2006)	[1]Includes Trade Promotion Agreements (TPA) [2]SACU consists of Botswana, Lesotho, Namibia, South Africa, and Swaziland [3]US, Canada and Mexico [4]34 countries in western hemisphere [5]Not technically a trade agreement; cooperative agreement to lower trade barriers
Oman (2006)	
Panama (Pending)	
Colombia (Pending)	
Peru (Pending)	
South Korea (Pending)	

Source: USTR

Countervailing and Anti-Dumping Trade Measures

Under certain circumstances and in conformance with WTO rules, the Executive Branch can impose embargoes, quotas, anti-dumping duties, and/or countervailing duties in response to severe import competition or for national security purposes. In the case of import competition, domestic industries can file a petition to seek remedy from foreign competition. Several cases involving trade remedies have been applied to imported wood products.

Most directly impacting tropical wood was a decision in December 2004 to impose anti-dumping duties on imports of Chinese wooden bedroom furniture. Duties ranging from 4.9% to 24.34% were imposed on seven Chinese furniture producers, and a flat 10.92% on imports from eighty-two other Chinese manufacturers. Together, the identified companies accounted for close to 80% of US wood bedroom furniture imports at that time. Imports from all other Chinese bedroom furniture manufacturers, representing the remaining 20% of imports, have been facing a duty of 198.08%. According to Department of Commerce published data, a total of $171,023 of anti-dumping duties were collected and cleared in 2006 on Chinese imported wooden bedroom.[7] This figure is only the amount that has completed review and for which there is no litigation. Some additional (unpublished) amounts are on deposit and will likely be added as reviews are finalized. The imposition of the duties has shifted some imports away from China to other parts of Southeast Asia, but furniture imports from China have not suffered and they continue to rise (*Table 4.3*).

Table 4.3: US Imports of Wooden Bedroom Furniture

	2003	2004	2005	2006	% Change 05 -06
	US$ 000				
China	1,166,360	1,240,021	1,393,402	1,510,046	8.4%
Vietnam	36,292	151,205	367,445	470,542	28.1%
Canada	387,593	377,378	323,081	248,929	-23.0%
Malaysia	89,591	126,169	208,273	216,651	4.0%
Indonesia	125,393	162,057	199,797	213,193	6.7%
Brazil	94,849	131,393	138,997	100,592	-27.6%
Mexico	96,824	91,200	97,787	96,155	-1.7%
Italy	170,703	147,515	108,650	72,121	-33.6%
All Others	257,573	294,711	323,929	285,469	-11.9%
Total	2,425,178	2,721,649	3,161,361	3,213,698	1.7%

Source: ITC Dataweb

[7] US International Trade Administration

The other significant trade case involves a long-standing dispute over softwood sawnwood between the United States and Canada. The two countries reached an agreement in October 2006 that established Canadian export taxes linked to specific price and volume thresholds. Prior to the agreement, the US had been imposing countervailing and ant-dumping duties on imports of softwood sawnwood from Canada.

As this report is being written, a formal request is being made by the US Senate to the US International Trade Commission (ITC) to conduct an investigation on competitive conditions in the US wood flooring and hardwood plywood industries during the period from 2002-2006. Called a “332 investigation” in reference to the procedures set forth in section 332(g) of the Tariff Act of 1930, a 332 investigation is intended to gather information to help determine if import competition warrants a trade action. The report will be completed within a 15 month time frame (May, 2008).

5.0 Non-Tariff Issues Affecting US Tropical Wood Market

Formaldehyde and Wood-Based Panels

Regulations on formaldehyde product emissions are emerging as a major issue and may have far-reaching implications for the US wood panel market. Formaldehyde-based resins are the most commonly used adhesives for manufacturing hardwood plywood and other non-structural panels, such as particleboard and MDF. Formaldehyde emissions from these products have been regulated in certain applications for many years, such as in manufactured housing, More recently however, the State of California has issued new and stricter limitations on formaldehyde emissions from wood products.[8] These new emissions standards will impact all panels sold in California as well as all products fabricated with wood-based panels. The panels subject to the regulation will include hardwood plywood, particleboard and MDF whether domestically produced or imported. The regulation will apply to their use as raw panels, in manufactured components and in all end uses including cabinets and furniture.

The rule by the California Air Resources Board (CARB) will require dramatic reductions in emissions levels for urea formaldehyde bonded particleboard, MDF and hardwood plywood.[9] These types of panels are currently regulated under a federal regulation administered by the Department of Housing and Urban Development (HUD) that applies only to certain kinds of manufactured housing. Under the current HUD standard, formaldehyde emissions are limited to 0.2 parts per million (ppm) for underlayment, decking and wall paneling, and to 0.3 ppm for other products used in manufactured homes.[10] Most non-structural panels produced in the United States conform to this standard whether used in HUD-regulated manufactured housing or in other end-uses. The new CARB rule sets emission levels significantly below the existing HUD standard and below the commonly referenced European E-1 standard of 0.1 ppm.

The CARB rule sets slightly different standards depending on the product and will be implemented in two phases. The first phase to be made effective in 2009 would set a standard for veneer core and combination core (particleboard or MDF) hardwood plywood at 0.08 ppm. Particleboard and MDF would need to meet a 0.18 ppm and 0.21 ppm standard, respectively. During Phase 2, to be implemented between 2011 and 2012, the hardwood plywood emissions standard would be reduced to 0.05; the particleboard standard would be reduced to 0.09 and the MDF limit to 0.11 ppm (MDF of 8 mm or less in thickness would need to meet an emissions limit of 0.13 ppm). The accompanying table (*Table 5.1*) displays the proposed emissions limits and phase-in periods. Under the proposed rule, panels used in manufactured housing and vehicles such as recreational vehicles and boats would be exempted as would their use in certain exterior doors. Panels used in manufactured housing must still meet the existing HUD standard referenced above.

Table 5.1: California Air Resources Board (CARB) Proposed Formaldehyde Product Emission Standards

Phase 1 and 2 Emission Standards for Hardwood Plywood (HWPW), Particleboard (PB), and Medium Density Fiberboard (MDF)[1]					
	----Phase 1 (P1) and 2 (P2) Emission Standards (ppm) ----				
Effective Date	HWPW-VC	HWPW-CC	PB	MDF	Thin MDF
1-1-2009	P1: 0.08	----------	P1: 0.18	P1: 0.21	P1: 0.21
7-1-2009	----------	P1: 0.08	----------	----------	
1-1-2010	P2: 0.05	----------	----------	----------	---------
1-1-2011	----------	----------	P2: 0.09	P2: 0.11	---------
1-1-2012	----------	----------	----------	---------	P2: 0.13
7-1-2012	----------	P2: 0.05	----------	----------	
(1) Based on the large chamber test method (ASTM E1333-96) in parts per million (ppm). HWPW-VC = veneer core; HWPW-CC = composite core.					

Source: California Air Resources Board, April 27th, 2007 Adopted Rule

8 In the United States, state governments have the authority to exceed federal minimum environmental standards.

9 The rule was adopted on April 27, 2007. Information about the rule and related links can be found at: http://www.arb.ca.gov/toxics/compwood/compwood.htm

10 The HUD rule for certain wood products used in manufactured housing is codified in 24CFR3280.308 of the Code of Federal Regulations (CFR). HUD Manufactured Home Construction And Safety Standards can be found at: http://www.access.gpo.gov/nara/cfr/waisidx_01/24cfr3280_01.html

The State of California rule-making will have significant implications for imports into California from both domestic manufacturers in other states as well as imports into California from overseas. California represents about 8% of the value of new construction in the United States, 10% of furniture shipments and 13% of retail furniture and home furnishing sales. Manufacturers will have to either alter their production processes for all products so as to retain access to the California market, or segment their production in a way that allows sales of products in California to meet that state's requirements while shipping other products elsewhere into the US market. It is not clear whether the California regulation will be replicated in other states. At this time, no other state has a similar proposal in process, but California tends to lead the nation in terms of new standards development.

Enforcement provisions for the CARB rule have also been drafted. Generally, raw panels will have to be third-party certified according to the ASTM E 1333-96 testing protocols in large test chambers. According to the rule, third-party certification labs will need to be accredited by the International Accreditation Service (IAS) or by an accreditation body that is a signatory to the International Laboratory Accreditation Mutual Recognition Arrangement. CARB will develop a registry of these approved certification labs. Testing facilities in foreign countries, including ITTO-producer countries and China, could apply for certification and be approved.

Panels sold in California must bear a label from an approved certification lab. Finished products distributors, wholesalers and retailers will have to take "reasonable and prudent precautions to insure that the hardwood plywood, particleboard, and MDF they purchase are in compliance." Hardwood plywood and composite panels sold in California will likely need to bear a label certifying that they have been subject to testing protocols at an approved laboratory facility. To comply with the regulation, all finished product distributors and retailers – including all those that sell imported wooden furniture that utilizes these regulated panel products -- will likely have to maintain a Chain of Custody (CoC) tracking initiated by the panel producer at its origin and carried forward throughout its distribution, product fabrication, product distribution, and final sales outlets. The CoC will need to include similar evidence of certification to the CARB regulation by an accredited lab or other facility. CARB will likely conduct "screening tests" to enforce compliance which means that offshore manufacturers of panels, furniture and cabinets will be subject to inspection and additional record-keeping requirements. In addition, California enforcement officials will also likely conduct audits of products entering the state from other US states.

Many US manufacturers, but by no means all, as well as foreign producers, have objected to the issuance of new standards. According to one economic assessment, the rule will have an adverse economic impact of at least US$1.2 billion.[11] The politics of the rule-making are complicated in part because some in the US industry favor the more restrictive standards. They have developed proprietary technology that uses adhesives with near zero formaldehyde emissions and thus positioned to capture a larger share of the lucrative California market should the regulations be enacted. The rule will force other producers in the US and overseas to change their manufacturing processes or abandon the California market altogether.

In the meantime, at least one major US retailer of wood products – The Home Depot – has announced that all hardwood plywood it purchases and sells shall need to meet the European E1 standard for formaldehyde emissions by April 1, 2007. As noted, the E1 standard is equivalent to 0.1 ppm. Home Depot will use an independent third-party certifier to test and assure that products sold by the retail giant meets its policy.

Illegal Logging

Few issues have received as much attention in international trade discussions as has illegal logging. Promoted by the World Bank, governments and NGOs, Forest Law Enforcement and Governance (FLEG) processes have been initiated in different parts of the world. The FLEG process is intended to enhance the ability of governments to eliminate corruption and better enforce laws affecting forest management and harvesting. In Europe, the FLEG process as evolved into FLEGT (Forest Law Enforcement, Governance and Trade) and has been institutionalized in a series of polices and programs designed to influence trade in illegally sourced wood products. Central to the European FLEGT process are voluntary bi-lateral partnership agreements to institute a legality licensing system and national requirements for government procurement. In the United States, until recently, the thrust of government efforts to address illegal logging has been with capacity-building through foreign assistance. For example, the US and Indonesia entered into a Memorandum of Understanding (MOU) in 2006 designed to target specific problems and situations where illegal activity in Indonesia is known to occur.

[11] Based on an economic analysis by the Composite Panel Association (CPA).

More recently, attention in the US has turned to enacting legislation that would prohibit importation or shipment of wood products obtained or produced in violation of foreign law. Currently, the Lacey Act imposes criminal penalties for importing or shipping wildlife obtained in violation of foreign law and for fish and plants taken or possessed in violation of US, state or tribal laws. The Act provides significant civil and criminal penalties for trafficking prohibitions as well as for false labeling offenses. What has been proposed is that the Lacey Act be amended to extend its prohibitions to commerce in "plants and plant products" that are imported in *violation of foreign law*. Environmental groups view changes in the Lacey Act as a way to impose demand-side control measures against illegal logging. On the other hand, members of the trade are concerned that the Lacey Act, if amended to include plant products, and hence wood products and furniture, might be used to obstruct legitimate trade or have other unintended consequences. The proposed legislation would require new documentation requirements on all imports. Concerns have been raised that other countries would impose similar requirements on US exports.

While the proposed legislation is in the preliminary stages of being debated, it has, according to many observers, a good chance of being enacted into law. The final version is likely to incorporate numerous changes to broaden its support, but its basic intent will be to allow prosecution of anyone importing some defined list (to be determined whether the list is narrow or broad) of wood products that have been produced or obtained in violation of foreign or domestic law.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was conceived to foster conservation of endangered species and establish the parameters under which legal trade of endangered species could proceed. Tropical timber species listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) require permits to be legally imported. US Customs and Border Protection (Customs), the Animal and Plant Health Inspection Service (APHIS), and the US Fish and Wildlife Service (USFWS) share responsibility for enforcing CITES trade controls. USFWS is the official US CITES management authority. Customs now requires, and APHIS issues, general permits for importers regularly engaged in commercial trade of CITES listed species.

Under CITES, threatened or endangered plant and animal species are listed in one of three Appendices, each requiring a specified level of protection. Trade in species listed in Appendix I is strictly prohibited except for scientific or conservation purposes. There are six protected timber species on Appendix I, the most notable tropical hardwood being Brazilian Rosewood (*Dalbergia nigra*). For Appendix I species, certificate(s) issued by the CITES agency in both the exporting country and in the United States is required, but trade in Appendix I is usually only for research or specialized purposes.

There are nine protected timber species on Appendix II. Trade in Appendix II listed species is permitted but only if accompanied by an approved export permit from the originating country. The most notable species on Appendix II are Big Leaf Mahogany (*Swietenia macrophylla*) and Ramin (*Gonystylus* spp). These were added in 2003 and 2004, respectively. A CITES export permit for Appendix II species may only be issued if the specimen was legally obtained and if the export will not be detrimental to the survival of the species. All roundwood, sawnwood, veneer and plywood imports of Big Leaf Mahogany must be accompanied by a CITES Appendix II export permit from the CITES authority in the originating country (and from the re-exporting country if transshipped). In the case of mahogany, the CITES listing does include valued added products such as furniture. However, all parts and derivatives of ramin, including furniture, are subject to CITES regulation.

To import an Appendix II CITES-listed species, the following documentation is required:

(a) General import permit issued by APHIS;
(b) Certificate(s) issued by the CITES management agency in the country of origin with an official assurance that exporting the product is non-detrimental to the survival of the species and that the product was obtained in compliance with all laws; and
(c) Endorsements at a US port authorized to process imports of CITES listed species.

APHIS inspectors physically examine shipments of CITES listed species and products to determine compliance. They check for the accompanying CITES certificate, ensure that the certificate is valid and certify the imports by stamping the CITES documentation. The CITES documents are transmitted to the USFWS with copies to the importer and port authorities. The USFWS prepares an annual report of CITES enforcement activities which includes data on imports of listed species. CITES certification forms vary by country of origin, but all include the same basic information.

CITES signatories are supposed to maintain records and prepare periodic reports of certificates issued, but data on trade of CITES listed species are not consistent. For example, it is difficult to determine from publicly available information the volume of various products that have been imported into the US under valid CITES certificates, or the volume that has been interdicted or challenged.

Swietenia macrophylla (Big-Leaf Mahogany)

In response to campaigns by Greenpeace and other groups, big-leaf mahogany (*S. macrophylla*) was placed on Appendix II in November 2003. Even prior to its new listing, however, controversies over legality of mahogany harvesting were affecting its trade. Partly in response to the Greenpeace campaign, Brazil's CITES authority (IBAMA) imposed a freeze on the logging, transport, and export of mahogany in October, 2001. Later, IBAMA issued new regulations allowing limited harvests. Since then, some mahogany shipments that pre-date the moratorium and some that were subsequently issued CITES export certificates have since been in legal limbo. Because of questions related to the validity of the CITES certificates issued in Brazil, approximately 50 shipments of big-leaf mahogany were impounded at US ports in 2003. While some of the shipments have been released, others still remain in contention and are being stored pending final resolution. Subsequent court cases in Brazil and conflicting communications between IBAMA and the USFWS has resulted in many of the shipments remaining on hold. Importers also report instances whereby shipments have been impounded because CITES-issued certificates expired pending the resolution of their validity.

In June, 2006, the Natural Resources Defense Council (NRDC) filed a lawsuit against the US Customs, US Fish and Wildlife Service, APHIS and 4 importing companies claiming that CITES permits were issued illegally in Peru. Peru had become the principal supplier of big-leaf mahogany after Brazil essentially curtailed all mahogany exports in 2002. The lawsuit is pending but has significantly impacted any further imports from Peru. Mahogany imports from Peru were as high as 42,000 m^3 in 2002, but decreased to less than 23,000 m^3 in 2005, and dropped again to 18,000 m^3 last year. Total imports of genuine mahogany from all supplying countries went from 104,000 m^3 in 2001 to less than 50,000 m^3 in 2006. Mahogany imports from Brazil dropped from over 38,000 m^3 in 2001 to just 111 m^3 in 2006. Imports from Bolivia, Ghana and other Central American countries have sustained exports to the US, but availability has become very constrained. Sharp decreases in supply have pushed prices up to over US$2,200/$m^3$ from about US$500/ m^3 in the late 1990s. Users have shifted to Spanish cedar (also facing supply limits), African mahogany (Khaya), Sapelle and other species. Plantation-grown mahogany from Fiji, much of which is FSC-certified, and to a lesser extent, from the Philippines and Costa Rica, has contributed to importable supplies, but the volumes are small and consistent quality is cited as a problem by importers.

Other CITES Issues

Several other tropical timber species are currently on the CITES Appendix III list, although none have a history of significant commercial trade with the possible exception of Spanish cedar (*Cedrela odorata*). Species listed on Appendix III are unilaterally listed by a country that seeks to control its trade as opposed to being listed by agreement of all CITES signatories. For the export of Appendix-III species, the CITES Management Authority in the country of export need only determine that the specimens were legally obtained. A non-detrimental finding is not required as with Appendix II species. The forthcoming CITES meeting of the Conference of Parties (CoP14), to be held on 3-15 June in the Netherlands, will consider adding at least three timber species to Appendix II: Spanish cedar (*Cedrela odorata*), black rosewood (*Dalbergia retusa*) and Honduran rosewood (*Dalbergia stevensonii*). The US currently imports very little of these species as sawnwood. What is imported tends to be used in custom woodwork (e.g. gunstocks and musical instruments) or furniture applications.

The number of challenges on the validity of CITES certificates has increased in the past five years. The focus has been on mahogany and several shipments remain impounded either in the US or abroad. Legal challenges related to CITES shipments take a long time to be resolved and many seem to be deferred indefinitely. Most revolve around the legality of permits issued in the host country (i.e. Brazil and Peru) and challenged in the consuming country (i.e. the US). Unlike other international trade agreements, CITES does not have a well-defined mechanism for resolving trade disputes. Data on the volume and value of sanctioned CITES trade are also not easily obtainable or consistently reported.

Green Building Rating Systems

In the United States, systems for rating the environmental performance of buildings are increasingly being utilized and codified for government procurement. The Leadership in Energy and Environmental Design® (LEED) developed by the US Green Building Council is currently the most recognized of the programs, although Green Globes® and some state-specific guidelines have also been adopted. The LEED standard is problematic for wood products generally because it tends to favor building materials containing recycled content over materials produced from renewable resources. The exception within the LEED framework is that "points" can be awarded for short-rotation bio-based products and for FSC-certified wood products. Thus, imported bamboo products and imported wood products that are FSC-certified are favorably treated in the LEED system. FSC certification is the only certification system recognized in the LEED standard, a fact that has been contested by the US wood products industry. Green Globes and other green building rating systems provide credits for materials produced from other recognized forest certification systems.

LEED also provides credit for use of panel products without added urea-formaldehyde. The LEED standard is more restrictive than existing industry standards (domestic and European) for low-emitting wood panels and more restrictive still than a proposed standard that will affect all panels made with formaldehyde and sold in California. Currently, only one US manufacturer has installed technology to produce hardwood plywood that can meet the LEED formaldehyde product emission standard and, as far as can be determined, no imported wood panels can meet the LEED standard at the present time.

Forest Certification

Forest certification programs have increased dramatically over the past decade in the United States. As of 2006, more than 35 million hectares have been voluntarily certified to leading sustainable forest management certification systems. Several systems are generally recognized in the US. They include the Sustainable Forestry Initiative® (SFI), Forest Stewardship Council® (FSC) and the American Tree Farm System® (ATFS). SFI has over 22 million certified hectares; FSC has over 9 million certified hectares; Tree Farm has over 8 million certified hectares. Tree Farm and SFI are members of the Programme for the Endorsement of Forest Certification (PEFC).

Some have argued that forest certification when mandated as a condition of purchasing or importing violates WTO rules. However, with the exception of procurement polices in selected states or local jurisdictions, forest certification is largely a voluntary factor in the US market and the US. does not impose any rules related to forest certification on imports. As a practical matter, demand for certified products is low but appears to be gaining some momentum because of purchasing policies being implemented by large retailers and corporations. The two largest programs -- FSC and SFI -- are competing for recognition in the US marketplace. Currently, SFI has 26.2 million hectares enrolled in the US, and FSC has 9.3 million hectares. SFI participants tend to be large industrial or investor-owned timberlands; FSC's largest participants are state public agencies, many of which have certified to both the FSC and SFI standard. The SFI Program, which had been closely associated with the industry trade association, became entirely independent as of January 1, 2007 and is focusing on promoting its standard. The competition amongst certifying schemes, and its related advertising, will likely raise consumer awareness about certified products more generally. Thus, certified products are likely to become more prevalent in the future than they are today.

To date, only a very small percentage of tropical wood products entering the US market is from certified sources. By most estimates, it is less than 5% and price premiums for certified products are the exception rather than the rule. The consensus view among importers is that certification can help secure trade in tropical wood products but that certified products are not likely to be in high demand, at least not in the near future.

Phytosanitary Regulations

The United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) regulates imports of plant material to prevent the introduction of invasive pests into the United States. The APHIS Plant Protection and Quarantine (PPQ) unit issues import permits and enforces phytosanitary regulations. The agency also assists exporters of commodity exports by conducting inspections and providing phytosanitary certificates required by other countries. With few exceptions, tropical roundwood and sawnwood must be debarked or fumigated and all wood imports are subject to inspection and other requirements that may be deemed necessary upon import if risks of pest introductions exist.

APHIS regulations require an import permit and the treatment of most roundwood, sawnwood and other unmanufactured wood articles with certain exceptions that apply only to Canada and the adjacent border states in Mexico. Regulated wood articles include unprocessed or somewhat processed roundwood, parts of trees, most sawnwood products, chips, sawdust and shavings, hogfuel, painted raw wood products, bark, cork, laths, excelsior, pickets, stakes, shingles, and wood packaging materials. Depending on the product, treatments may include one or more of the following: debarking, heat treatment, kiln drying, fungicide/insecticide application, methyl bromide fumigation, covered storage during conveyance and rapid processing upon entry. The specific treatment and safeguard requirements are consistent with International Standards for Phytosanitary Measures (ISPM) agreed to through the International Plant Protection Convention (IPPC). Imports of temperate hardwood roundwood and sawnwood (with or without bark) from areas in Asia east of 60^{o} East Longitude and north of the Tropic of Cancer are completely prohibited.

In addition to roundwood, sawnwood and other unmanufactured wood products, phytosanitary rules apply to wood packaging materials used for or with any cargo including, but not limited to, “dunnage, crating, pallets, packing blocks, drums, cases, and skids.” Compliance with the ISPM 15 Standard is required of all wood packaging materials imported into or accompanying goods imported into the US. This rule states that all regulated wood packaging material shall be appropriately treated and marked under an official program developed and overseen by the National Plant Protection Organization (NPPO) in the country of export. The standard calls for wood packaging material to be either heat treated or fumigated with methyl bromide, in accordance with the Guidelines, and marked with an approved international mark certifying treatment. Importers report cases when shipments have been returned because of improperly treated wood packing materials.

Border and Port Issues

Delays at the border are increasingly a factor in the importation of tropical wood products. In part this is due to port security concerns and the tightening of border controls related to homeland security. Importers report that US Customs and Border Protection is understaffed and under trained. Border delays can reportedly add anywhere from US$50 to US$100 per day. Under legislation enacted in 2006, importers can voluntarily enroll in the Customs- Trade Partnership Against Terrorism (C-TPAT) program. Under this program, importers can expedite border processing by conducting comprehensive self-assessments of their supply chain security procedures using Department of Homeland criteria and guidelines. They agree to follow and document specific procedures on all shipments beginning at the foreign port of embarkation. In return, importers are subject to fewer inspections and delays. In practice, very few importers have thus far availed themselves of this program and some are not persuaded that the benefits are worth the additional costs, based on interviews conducted for this assessment.

Other Policies Affecting Tropical Timber Imports

A variety of other policy-related factors affect the importation and/or market for tropical wood products. Some are intended for legitimate environmental, health or social reasons; others are viewed as non-tariff measures designed to protect domestic industry. Indeed, World Trade Organization (WTO) rules allow measures that are necessary to protect human, animal, plant life or health or necessary to protect exhaustible natural resources.[12] Thus, bans or treatment requirements may be imposed to reduce the risk of invasive pests entering the United States. Non-tariff measures would also include, in the case of tropical wood products, policies supported by advocacy groups to reduce consumption viewed as responsible for deforestation or other environmental damage. The following discussion presents an overview of other non-tariff measures directly or indirectly impacting tropical wood imports.

Extending Existing Log Export Ban

The US currently bans exports of unprocessed roundwood harvested from national forests and state lands west of the 100th meridian. The ban has been effectively in place since the 1970s and is intended to support the domestic processing industry in the western United States. It primarily affects softwood roundwood. Lands affected by the ban currently account for less than 5% of the total US softwood harvest and only a tiny fraction of hardwood harvests. The impact on tropical wood imports is relatively low since the softwood products produced are largely used for structural construction purposes and do not generally compete with

[12] Article XX of the General Agreement on Tariffs and Trade (GATT) provides a general exemption to WTO rules for measures necessary to protect human, animal or plant life or health; or relating to the conservation of exhaustible natural resources. WTO Agreements on the Application of Sanitary and Phytosanitary Measures (SPS) and Technical Barriers to Trade (TBT) also set out rules by which member governments can apply health, safety and other measures.

hardwood end uses. Overall, harvests on US national forests have declined dramatically since the 1980s because of environmental restrictions. Reduced federal timber supply has had the effect of stimulating softwood sawnwood imports. Some sawnwood producers in the eastern US have long advocated for a similar log export restriction on public lands east of the 100th meridian. Extending the export ban to the eastern region would reduce log costs and increase the competitiveness of some producers, but would also likely depress timber values for private landowners. For that reason, extending the log export to eastern public forests faces substantial political opposition.

Government Procurement

Federal government procurement policies, as well as policies by jurisdictions at the state and local levels, include various requirements to purchase environmentally preferable products (EPP) and services. The US government centralizes its purchasing policies under the Federal Acquisition Regulations (FAR) which govern agency acquisition of supplies and services. The FAR is codified in Title 48 of the United States Code of Federal Regulations and is periodically updated. An Office of Federal Procurement Policy Act (OFPP) oversees the implementation of federal procurement policies.

The most common government procurement policies are those that mandate recycled content in paper purchasing. In the case of the US Environmental Protection Agency's Comprehensive Procurement Guidelines (CPG), recommended total recovered paper content for federal purchases ranges from 5% to 100% depending on the product or grade of paper (for example, paper used for printing checks should contain 10% recovered fiber; newsprint up to 100%).[13] Post-consumer recovered paper content requirements were mandated by a Presidential Executive Order issued in 1998 that requires federal agency purchases of copier paper to contain 30% post-consumer recovered paper and all purchases to contain a minimum 20% post-consumer recovered paper content. The EPA recycled content guidelines also provide purchasing recommendations for certain construction materials, including structural fiberboard, which should contain 100% recovered fiber content (not necessarily post-consumer).

It is probably safe to say that few tropical wood products are purchased directly by government agencies, but purchasing rules generally extend to government contractors. To date, unlike in Europe, government procurement policies are not dictating that wood products be purchased from verifiably legal and sustainable sources. The presumption is that wood products are legally produced and traded unless deemed otherwise. And rather than require that purchased wood products be traceable to sustainably managed forests, government procurement is moving towards recognizing "green building" standards that typically include preferences for certified wood products.

"Buy America" Requirements

Federal, state and local government agencies are often guided by various requirements to favor American made products. The 1933 Buy American Act, which has been amended multiple times and has had numerous exceptions added, gives preference to products that originate in the United States or "approved" countries. A foreign-made product can be purchased if an exception applies or if the lowest alternative domestic price is unreasonable. The Act specifically requires, with some exceptions, the use of only domestic construction materials in contracts for construction of federally-funded buildings in the United States. In general, under the Buy America Act, the domestically produced content must exceed 50 percent of the cost of all its components. The Buy American Act applies to purchases of supplies exceeding US$25,000 and to government construction purchases valued between US$25,000 and US$7.4 million.

The 1979 Trade Agreements Act also governs large government contracts, requiring agencies to buy products that undergo "substantial transformation" or final assembly in the United States. Exceptions can be made for goods purchased from a list of approved countries that have trade agreements with the US.

Purchasing Restrictions on Tropical Wood Products

As has been the case in parts of Europe, some localities in the United States have imposed restrictions or outright bans on the use of tropical wood products in public procurement. In at least two states and several municipalities, procurement policies restrict the use of tropical wood in public construction. These include the states of Arizona and New York and local jurisdictions in San Francisco, Santa Monica and Santa Cruz in

[13] U.S. government Comprehensive Procurement Guidelines (CPG) can be found at: http://www.epa.gov/epaoswer/non-hw/procure/factshts.htm

California; Baltimore, Maryland; and Bellingham, Washington. Most of these prohibitions were put in place during the 1990s following successful lobbying campaigns by environmental groups. More recently, NGOs have shifted to advocating instead policies requiring that wood purchases be from certified (usually FSC) sources.

Major Hardwood Market Segments

6.1 Industrial Roundwood - Hardwood

US Demand and Production

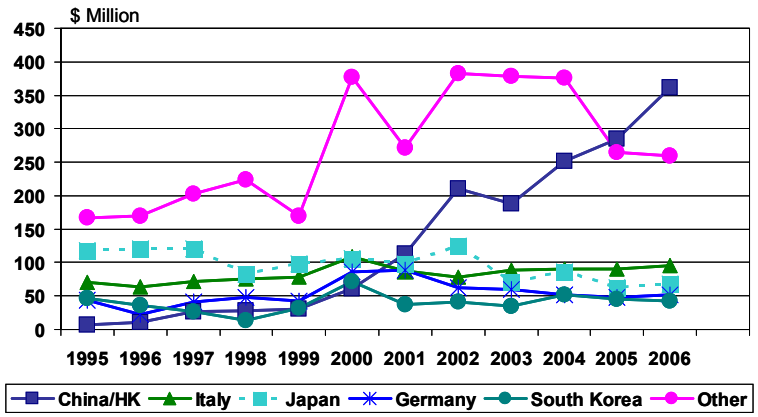
The US consumes approximately 420 million m^3 of industrial roundwood annually, of which nearly 30% or 120 million m^3 is hardwood. Of that amount, roughly 40% is used in the pulp and composite panel industry and the balance is used for sawnwood, plywood and other solid wood products. The US is the largest consumer of industrial hardwood roundwood, accounting for 20% of the world total. US timber production is supplied mainly by private landowners and that is particularly the case for hardwood roundwood. More than 90% of hardwood is supplied from private lands.

Trade

The US imports only small quantities of hardwood roundwood of which practically all originate in Canada. In 2006, imports were an estimated 278,000 m^3 and valued at US$42 million. Most of this volume – over 80% -- is imported pulpwood from the eastern provinces of Canada. Fewer than 1,500 m^3 of tropical roundwood valued at US$900,000 were imported in 2006. This is a very small volume by almost any measure. The largest direct sources for tropical hardwood log imports in 2006 were the Democratic Republic of the Congo, Congo, Cameroon and Brazil (*Table 6.1*). Between 10 and 20 percent of US tropical hardwood log imports are shipped through Canada and probably similarly sourced. Official statistics show a small volume of imported hardwood roundwood from countries that have partial or total restrictions on log exports such as Indonesia, Ghana, and Cameroon. Whether these are legal or illegal cannot be discerned, but the total volume and value is very small in any case.

The US exports approximately 2 million m^3 annually, of which 60% is exported to Canada. Off-shore hardwood log exports of mainly oak and red alder totaled approximately 800,000 m^3 in 2006 and have increased since 2000, most notably to China/HK (*Figure 6.1*). While most Chinese production of wood products is domestically consumed, China has become a major exporter of plywood, flooring and furniture to the US and many other world markets.

Figure 6.1: US Off-Shore Hardwood Log Exports



Source: GTIS and ITC

Table 6.1: US Imports of Tropical Hardwood Roundwood

Major Suppliers of Tropical Hardwood Roundwood				
	US$ 000	As % of Total Value	000 M^3	As % of Total Volume
World	$904	100.0%	1,466	100.0%
ITTO Producers	$785	41.6%	912	62.2%
Greater China and Singapore	$0	15.7%	0	0.0
Congo Dem. Rep.	$366	40.5%	406	27.7%
Cameroon	$151	16.7%	213	14.5%
Brazil	140	15.5%	178	12.1%
Canada	$85	9.4%	258	17.6%
Congo	$84	9.2%	57	3.9%
Ecuador	$28	3.1%	35	2.4%
Denmark	$17	1.8%	191	13.0%
Nicaragua	$13	1.5%	104	7.1%
Papua New Guinea	$8	0.9%	17	1.2%
Indonesia	$5	0.5%	1	0.1%
All Others	$7	0.8%	6	0.4%

Outlook/Trends/Issues

The fact that the US has vast and rising inventories of hardwood resources, and borders a country that also has a significant hardwood forest inventory (i.e. Canada) explains why the US only imports a small volume of hardwood roundwood from overseas. In the US, hardwood growth exceeds harvest by a wide margin, which is indicative of a plentiful supply, but several other factors affect the availability and pricing of hardwood roundwood. As noted, almost all of the US hardwood production is from private lands and almost all is from small family forests. The demographics of these owners are such that they are older, more likely to be absentee and less likely to have timber production as the primary objective of owning forest land. Moreover, much of the high-quality hardwood resource is located in areas that are, for environmental or economic reasons, less likely to become available for commercial use. Thus, hardwood timber prices have remained high despite an abundant supply and a flat and declining demand trend.

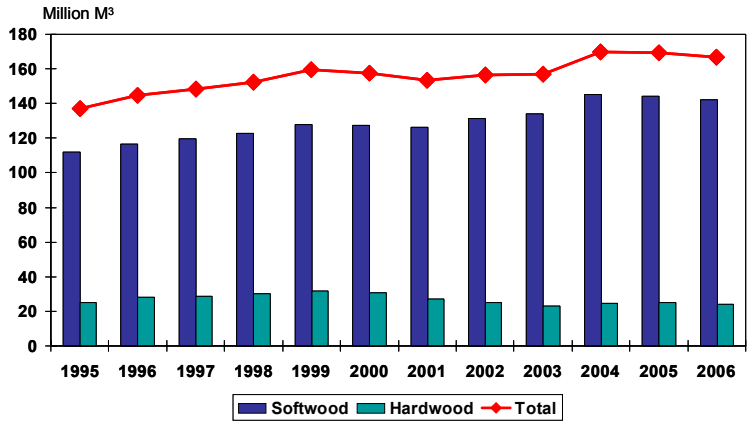
US hardwood sawlog prices are likely to remain mostly flat, or at least not increase, as eventually landowners will accept lower returns. The main issue for tropical wood products, other than trade-related factors, is that relative to imported tropical roundwood, North American temperate species are a bargain. Imported tropical sawlogs are valued at roughly US$620 per m^3 on average as compared with US$150 per m^3 for domestic temperate roundwood of similar upper grade quality. Of course, prices vary widely by species and grade. The US has a huge supply of low-grade hardwood material for pulpwood, industrial and packaging uses.

6.2 Hardwood Sawnwood

US Demand

The US is a huge market for sawnwood, consuming 160 million m^3, or approximately 33% of the world's total sawnwood production. Softwood species account for an estimated 83 % of total US sawnwood demand, while temperate hardwood species comprise 16% and tropical hardwood species amount to less than 1%. In 2006, hardwood sawnwood consumption totaled just over 24 million m^3. Despite robust construction activity, US hardwood sawnwood consumption has remained flat to declining because two major hardwood end-uses – furniture and flooring – have shifted overseas.

Figure 6.2: US Sawnwood Consumption



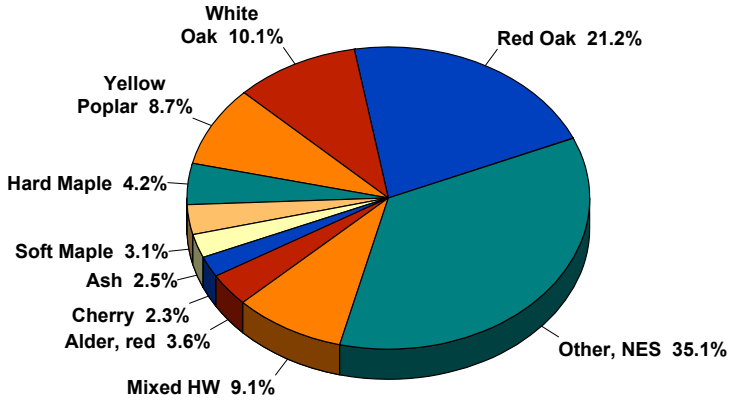
Source: American Forest & Paper Association

Unlike the softwood sawnwood sector, the US relies predominantly on domestic sources of hardwood and very few imports. Less than seven percent of consumption, or 1.6 million m^3, was imported in 2006 (including both temperate and tropical hardwood). The US has actually been a net exporter of hardwood sawnwood for many years. The major end-uses for high-quality hardwood are for furniture and remodeling, while much of the low-grade sawnwood is consumed in the industrial sector.

US Production

US hardwood sawnwood manufacturing is concentrated in the eastern US in proximity to where the hardwood forest resources are mostly located. Sawmills in the US South produce close to half of the country's hardwood sawnwood, with major production centers located in the states of Tennessee, Virginia, Arkansas and North Carolina. Red and white oaks are the most prevalent species (21% and 10% of total hardwood sawnwood production, respectively). In the northeast and the Lake States, hardwood sawmills typically produce lighter colored species such as maple, but other species include oak, yellow poplar, cherry, walnut and birch. This region manufactures approximately 47% of the total US production with Pennsylvania, West Virginia, Wisconsin and Michigan being the most important northern hardwood sawnwood manufacturing states. Only 4% of total hardwood production occurs in the western states. The major commercial hardwood species produced in the west is red alder (*Alnus* rubra). A large share of hardwood production is of "unspecified species" (35.1%), but is probably similarly distributed as the reported production so as to include additional volumes of oak and maple, along with hickory, beech, birch, sweetgum, black gum, cherry and poplar (*Figure 6.3*).

Figure 6.3: US Hardwood Sawnwood Production



Source: US Census Bureau

US hardwood sawnwood production peaked at approximately 33 million m^3 in 1999, but then began to decline. With the contraction in US furniture manufacturing and increased use of engineered wood flooring, overall hardwood sawnwood demand, and hence domestic production has remained fairly flat despite the robust construction of the past several years. Red oak, long a staple of the domestic industry, has actually experienced a reduction in production. Red oak demand has dissipated in favor of both maple and darker woods. In the export market, shipments of red oak have also dropped substantially since 2004.

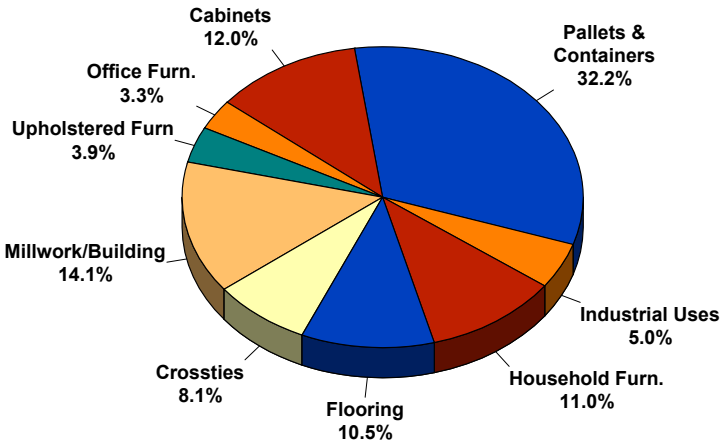
Uses and Distribution

Based on a recent study of 2002 hardwood sawnwood consumption by the US Forest Service, about one-third of all hardwood sawnwood, mostly the lower qualities, was made into pallets and wood containers.[14] The better sawnwood grades were consumed by furniture manufacturers (18.2%), cabinet builders (12%), flooring producers (10.5%) and millwork shops (8.1%). The wide range of end-uses in housing, remodeling, industrial applications and for consumer products has contributed to fairly stable consumption levels (*Figure 6.4*).

A good example of changing consumer trends is in their selections for kitchen and bath cabinets. Cabinets are one of the main stays of hardwood sawnwood and hardwood plywood use. From the 1970s through to the late 1990s, oak, and specifically red oak, was the most prevalent species used for kitchen and bath cabinets. Depending on who is asked about consumer trends, the response is likely to be either: that oak has given way to maple, birch and alder; or that demand has shifted away from oak to darker finishes and woods. In either case, and for whatever reason, red oak seems to have lost its luster in the kitchen cabinet business. There has been some increase in the use of imported tropical woods for cabinets, but the volume by comparison is very small. Imported sawnwood generally, and for the cabinet market specifically, is found strictly in the upper-end custom market segment.

[14] Luppold, William and Matthew Bumgardner. “Forty Years of Hardwood Lumber Consumption: 1963 to 2002. December, 2006.

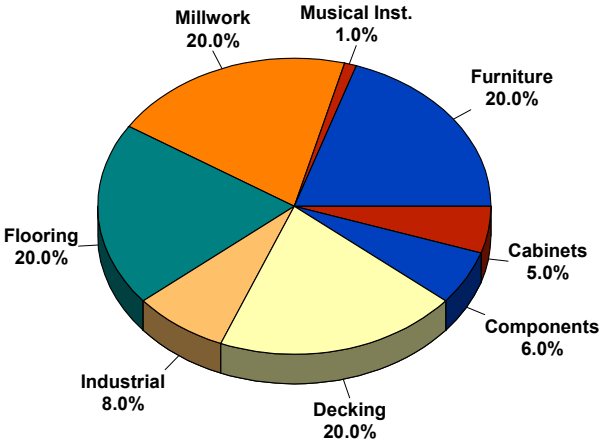
Figure 6.4: US Hardwood Sawnwood Consumption by End-Use



Source: US Forest Service

The major markets for tropical sawnwood are flooring, furniture, architectural woodwork (including mouldings) and furniture (*Figure 6.5*). Another significant and seemingly expanding market opportunity for tropical sawnwood products is for use as decking. An adverse determination by the Environmental Protection Agency regarding the safety of Chromated Copper Arsenate (CCA) as a treating chemical for wood products in residential use resulted in the US wood preservative industry changing chemical formulation for treated sawnwood beginning in 2003. The publicity surrounding the US treated wood industry stemming from safety concerns of the now phased-out chemical stimulated the use of alternative species and materials for outdoor decking and playground equipment. Among the substitutes gaining market share are plastic 'lumber' composites and tropical wood species. Thus, teak, ipê, and to a lesser extent, cumaru, are being used for decking, although the comparatively higher cost of tropical woods (and plastic lumber decking, for that matter) limit their use to the high-end housing and commercial markets. Tropical woods may account for one-half to one percent of materials used for decking.[15]

Figure 6.5: Tropical Sawnwood End Uses



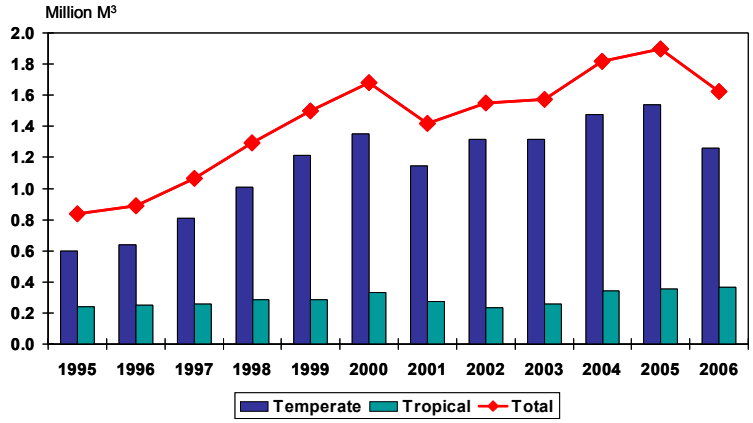
Source: Seneca Creek Associates, LLC

[15] As reported by Metafore (Metafore.org), International Wood Markets Research, Inc. estimated the 2001 share of tropical hardwoods in the US decking market at 1% or 97,000 m3. That estimate was likely overstated given the level of total tropical lumber imports that year.

Trade

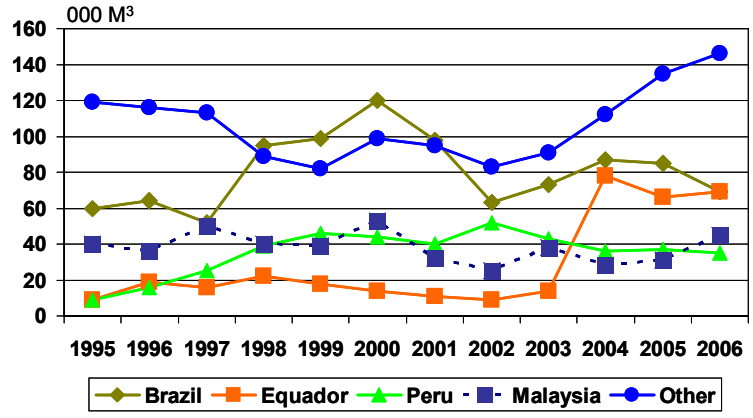
The US share of global hardwood sawnwood imports has steadily increased during the past ten years from less then 3% of volume in 1996 to almost 10% in 2005. The US imported 1.6 million m^3 of hardwood sawnwood in 2006, valued at over US$710 million. Canada is, by far, the dominant supplier of hardwood sawnwood to the US, accounting for over half of the total imports in 2006 (*Table 6.2*). Oak and maple are the major species being imported from Canada, shipped from the provinces of Ontario and Quebec to furniture and flooring manufacturers in the Northeast and the South. Germany is the second largest supplier of temperate hardwood, including oak and beech, accounting for about 4% of total imports. Import volumes to the US fell last year from a record 1.9 million m^3 in 2005, but were still twice as high as imports ten years ago (*Figure 6.6*).

Figure 6.6: US Hardwood Sawnwood Imports



Source: ITC and GTIS

Figure 6.7: US Imports of Tropical Sawnwood



Source: GTIS and ITC

Imports of tropical sawnwood have steadily increased during the past decade, but they occupy a very small share of the US sawnwood market – only 364,000 m^3 in 2006 or less than 1%. However, as a share of all hardwood sawnwood imports, they are quite significant, accounting for 22% of imports by volume and 38% of imports by value. The largest supplying countries to the US in 2006 were Brazil, Peru, Malaysia, Ecuador, and Ghana. Together, the five countries accounted for about 65% of the total import volume of tropical sawnwood. The major end-uses for tropical wood are furniture, flooring, mouldings, decking and a number of specialty products.

Genuine mahogany (*Swietenia* spp) was for long time one of the most popular tropical species in the US market, but it has become scarce and its listing on Appendix II of CITES has dampened the mahogany trade. Brazil was the principal supplier of mahogany to the US market, but a moratorium on Brazilian exports in 2002 shifted purchases to Peru, Bolivia and other Latin American countries. Mahogany imports have dropped from over 100,000 m^3 in 2001 to 50,000 m^3 in 2006 and importers indicate that the supply will decline further in 2007. Currently, the number one species imported from Brazil is Jatobá (*Hymenea* spp), marketed as Brazilian cherry. This is a reddish colored wood which is much darker than red oak and has been popular for the use in flooring, stairs, boats, cabinets, musical instruments and furniture. Other common species imported from Latin America are ipê (*Tabebuia* sp) and purpleheart (*Peltogyne* spp).

While a majority of tropical sawnwood imported to the US originates from Latin America, other significant suppliers are Malaysia and Indonesia in southeastern Asia and Ghana and Cameroon in West Africa. The most common species imported from Asia are Meranti (*Shorea* spp) used for doors, window frames mouldings and miscellaneous builders joinery. Other Asian species exported to the US are Keruing (*Dipterocarpus* spp) and Teak (*Tectona grandis).* The most common species imported from Africa are Sapelle (*Entandrophragma cylindricum*) and African mahogany (*Khaya ivorenis*).

Table 6.2: US Imports of Hardwood Sawnwood and Tropical Sawnwood

Major Suppliers of Hardwood Sawnwood					**Major Suppliers of Tropical Sawnwood**				
	US$ 000	As % of Total Value	000 M^3	As % of Total Volume		US$ 000	As % of Total Value	000 M^3	As % of Total Volume
World	$710,162	100.0%	1,626.0	100.0%	World	$274,101	100.0%	364.5	100.0%
ITTO Producers	$343,560	48.4%	514.0	31.6%	ITTO Producers	$255,763	93.3%	340.0	93.3%
Greater China and Singapore	$31,384	4.4%	51.0	3.1%	Greater China and Singapore	$9,340.0	3.4%	10.7	2.9%
Canada	$257,179	36.2%	825.5	50.8%	Brazil	$53,904	19.7%	69.5	19.1%
Brazil	$105,131	14.8%	173.4	10.7%	Peru	$43,643	15.9%	35.2	9.7%
Peru	$51,729	7.3%	45.9	2.8%	Malaysia	$28,160	10.3%	44.9	12.3%
Malaysia	$31,127	4.4%	49.4	3.0%	Ecuador	$27,799	10.1%	69.3	19.0%
Ecuador	$27,898	3.9%	69.5	4.3%	Ghana	$16,138	5.9%	19.0	5.2%
Germany	$25,795	3.6%	63.1	3.9%	Cameroon	$14,134	5.2%	18.9	5.2%
Ghana	$23,710	3.3%	29.7	1.8%	Indonesia	$13,372	4.9%	18.9	5.2%
China	$23,172	3.3%	42.9	2.6%	Bolivia	$13,361	4.9%	13.5	3.7%
Cameroon	$20,496	2.9%	27.7	1.7%	Cote d'Ivoire	$12,518	4.6%	15.7	4.3%
Bolivia	$15,870	2.2%	17.3	1.1%	Thailand	$6,874	2.5%	3.7	1.0%
All Others	$128,054	18.0%	281.6	17.3%	All Others	$44,198	16.1%	55.8	15.3%

Source: GTIS and ITC

While a significant importer of hardwood sawnwood, the US is nonetheless a net exporter of hardwood sawnwood and, in fact, exports have been increasing to Europe, Japan and China. Hardwood sawnwood exports in 2006 totaled 3.1 million m^3 and were valued at US$1.6 billion. Five large markets accounted for over 70% of the total US export volume in 2006: Canada, China, Mexico, Spain and Italy. Major exported species are red oak and maple to Canada and Mexico, red alder and yellow-poplar to China, white oak to Spain and yellow-poplar and white oak to Italy. China has clearly been the fastest growing export market for US hardwood products. While some portion of US hardwood sawnwood exports to China are manufactured into flooring, joinery, mouldings, and furniture that is then shipped back to the US, Europe and other regions, most of the American hardwood imported by China is actually consumed within China.

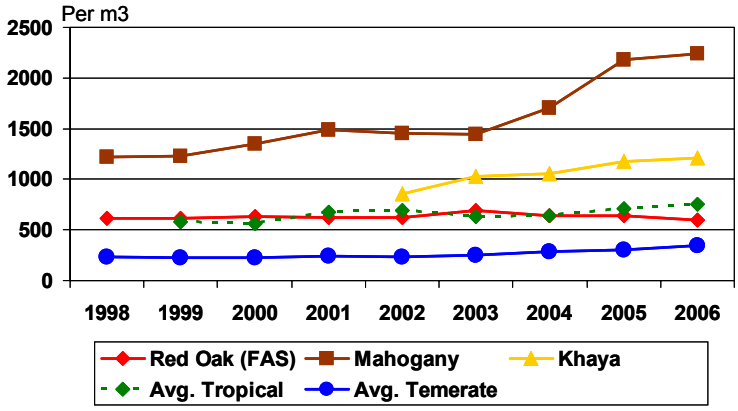
Import and Domestic Prices

During the past two years, domestic hardwood sawnwood prices have trended downward as demand, particularly in the latter half of 2006, weakened. Prices for red oak, the bell weather domestic species, declined from US$520/ m^3 (Grade No. 1 Common in the State of Pennsylvania) in early 2005 to US$390/ m^3 in the 4Q of 2006.[16] The higher quality grades (FAS/F1) have also declined but less severely.

As the US dollar has weakened against most currencies, costs for many imported products to the US have gone up. This is also true for hardwood sawnwood from both temperate and tropical regions. However, exchange rate adjustments are not the only reasons for higher import prices. Increased global demand for sawnwood, tighter availability for certain highly sought after species such as mahogany, and higher shipping expenses have all contributed to the rising costs for sawnwood.

According to US customs data, the average value for imported temperate hardwood sawnwood rose from US$250/ m^3 in the 1st quarter 2004 to a record US$375/ m^3 in the 3rd quarter 2006. Tropical sawnwood prices on average increased from US$550/$m^3$ to US$740/ m^3 over the same two-year period (*Figure 5.8*). Two of the major tropical species imported to the US, jatobá from Brazil and mahogany from Peru, have experienced very different price trends during the past two years. Prices for jatobá declined modestly during 2006 and are currently averaging US$550/ m^3 according to statistics collected by ITTO. Mahogany sawnwood prices on the other hand, have gone up more than 50% since early 2004 and reached over US$1800/ m^3 in the 4th quarter 2006.

Figure 6.8: Representative Hardwood Sawnwood Prices in the US Market



Source: Weekly Hardwood Review

Outlook/Issues/Trends

Overall, importers and distributors are optimistic about the prospects for imported tropical sawnwood. While still accounting for a very small portion of US hardwood sawnwood consumption, the use of tropical sawnwood has been steadily increasing and tropical species have found expanded use in applications such as decking and flooring. However, in all likelihood, the current softening in housing and construction activity will result in reduced demand in the near-term as compared to the recent past. The full impact of reduced availability of Big-leaf mahogany is just now starting to be recognized as fabricators have been working off of fairly large inventories built up before curtailments in shipments. Furniture and flooring manufacturers, as well as millwork shops are beginning to use substitutes including less expensive species such as sapelle and sipo (also marketed as utile). Other tropical species have gained, and will likely continue to gain, acceptance for use in decking and flooring.

Decking has become a growth market for tropical sawnwood. An estimated 85% of all single-family homes include a deck, patio or balcony. In combination with remodeling, some 6.5 million new decks are constructed annually, representing approximately US$3 billion invested in decking each year. The decking market is forecast to continue to grow and may double to over US$6 billion in 2010.[17] According to Metafore,

[16] Weekly Hardwood Review
[17] Shook R., Eastin I., & Fleishman J., 2000

tropical hardwood accounted for only one percent of the decking market in 2001, while treated southern yellow pine had a market share of 66% and other treated species about 8%.[18] There should be opportunities for tropical sawnwood to increase its share of the decking market if more competitively priced species were introduced. Tropical wood decking can be marketed as a “natural choice” with very long durability against pests and the elements.

The two most significant challenges for imported tropical sawnwood are ensuring a stable supply of any given species, and restrictions to trade resulting from CITES Appendix II listings.

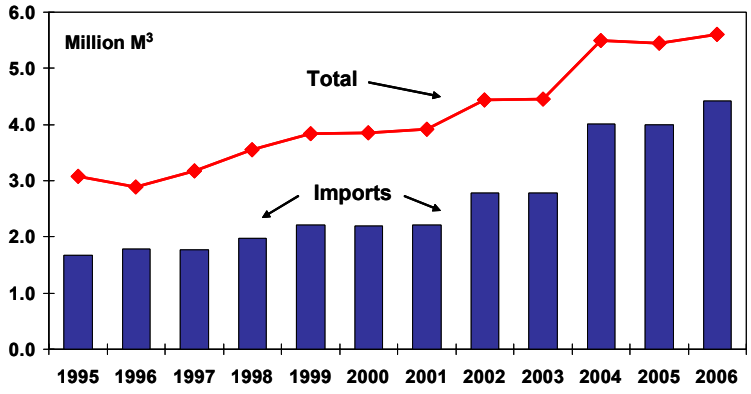
[18] www.metafore.org

6.3 Hardwood Plywood

US Demand

Unlike the softwood plywood market, which has been losing market share to OSB in the structural panel sector, demand for hardwood plywood has been relatively strong and increasing. Estimated US consumption of hardwood plywood has grown from less than 4 million m^3 in 1999 to over 5.6 million m^3 in 2006, an annual compound growth rate of 6% (*Figure 6.9*). The increase in demand has been fueled by robust construction activity that, in turn, has stimulated demand for flooring, cabinets and wall panels. However, virtually all of the increase in US demand for hardwood plywood has been supplied by imports which currently represent well over 75% of total US consumption.

Figure 6.9: US Hardwood Plywood Consumption



Source: HPVA and Seneca Creek estimates

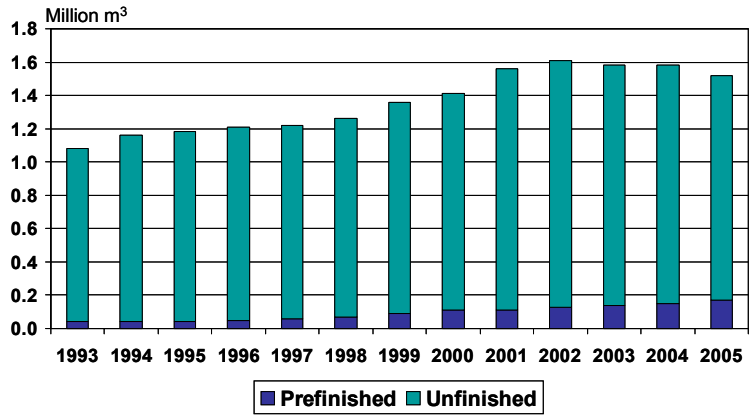
US Production

US hardwood plywood production peaked in 2002 at an estimated 1.6 million m^3 and has since slipped to below 1.5 million m^3 (*Figure 6.10*). The decline in domestic production has been entirely in the production of unfinished panels. Production of pre-finished hardwood plywood panels has, in contrast, increased. Pre-finished panels currently account for about 11% of domestic production as compared with just 4% ten years ago. Unused capacity is quite high, exceeding 41% in unfinished stock panels and 64% for pre-finished panels.[19] Despite operating significantly below capacity, domestically produced pre-finished panels have fared better in the competition with overseas products than have unfinished panels. Given increased overseas competition, especially from China, total production of hardwood plywood in the US can be anticipated to continue to decline for the foreseeable future.

Although the US hardwood resource is concentrated in the eastern part of the country, hardwood plywood production in the conifer dominated western US represents about half of total production for both unfinished and pre-finished panels. In 2005, just over 47% of the total US production was in the western states, most in the state of Oregon. As red alder is the only significant hardwood species utilized in the west, the plywood manufacturers import most of their veneer needs from eastern Canada, eastern US and from overseas. This is not necessarily a disadvantage since it is inexpensive to ship thin veneer and because west coast mills are relatively close to supplying regions in both South America and Asia.

[19] Hardwood Plywood and Veneer Association (HPVA) statistics.

Figure 6.10: US Hardwood Plywood Production, Unfinished and Pre-Finished Panels



Source: HPVA and WRI Estimates

Uses and Distribution

Hardwood plywood has traditionally been used for higher value products such as cabinets and furniture but lately there is also expanded usage of low-grade products for core applications, upholstered furniture and for concrete forming. For some applications, hardwood plywood has become a substitute for softwood plywood. In addition to hardwood face veneer on a core of multiple layers of veneer, cores of particle board, MDF, strips of sawnwood, and combinations of these materials in combination are produced as well. Veneer core is still the most common core with 66% of the total production in 2005, according to the Hardwood Plywood and Veneer Association (HPVA), with MDF accounting for 16% and particle board 13%. The majority of product – 72% -- is sold to distributors. About 13% is sold directly to furniture companies, 8% is sold directly to retailers and 7% to cabinetry and other fabricators.

The most popular face species for hardwood plywood produced in North America were, according to the HPVA latest survey, maple (30%), birch (22%), red oak (22%) and cherry (9%). Over the past five years, there has been a slight shift in demand from red oak to the lighter-colored maple and birch in cabinets and wall paneling. Plywood produced with mahogany or lauan (also meranti), the most significant of the imported tropical species used in US hardwood plywood manufacturing, represent less than 1% of total production. The majority of US production uses temperate species and is produced as 19.05 mm thick panels (¾") (*Table 6.3*).

Table 6.3: US Hardwood Plywood Production

Thickness (mm)	Unfinished Panels		Pre-Finished Panels		Total US	
≤ 6.350	120,731	9.9%	17,216	13.2%	137,948	**10.2%**
9.528	33,684	2.8%	10,264	7.8%	43,949	**3.3%**
12.700	143,191	11.8%	31,073	23.8%	174,264	**12.9%**
15.875	37,562	3.1%	4,497	3.4%	42,058	**3.1%**
19.050	810,687	66.5%	63,708	48.7%	874,394	**64.8%**
≥ 25.400	24,211	2.0%	2,367	1.8%	26,578	**2.0%**
Other	48,484	4.0%	1,681	1.3%	50,165	**3.7%**
Total	**1,218,549**	**100.0%**	**130,806**	**100.0%**	**1,349,355**	**100.0%**

A 1995 study of end-uses for hardwood plywood showed the paneling industry accounting for 75% of consumption and distributors (for unspecified end-uses) accounting for 15%. The balance was more or less evenly distributed among furniture, cabinets and door manufacturing.[20] The US hardwood plywood market has changed since the mid-1990s with much higher imported volumes going into manufactured homes,

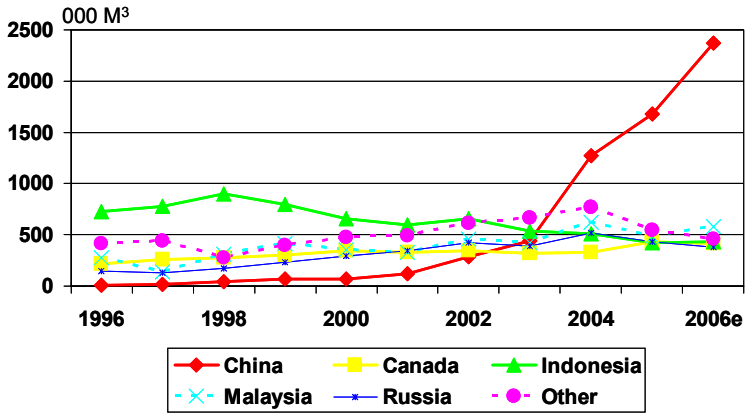
[20] Smith, P, Haas, M. and Luppold, W. "An Analysis of Tropical Hardwood Product Importation and Consumption in the US." *Forest Products Journa*l. 45(4): 31-37.

kitchen cabinets, case goods, and increasingly, engineered flooring. Marine uses are also a staple of the imported tropical plywood market. Most imported hardwood plywood, particularly tropical hardwood plywood, is sold by importers to distributors who have a varied mix of customers. Based on our field work for this assessment, the actual end-uses for imported tropical hardwood plywood seem to change fairly regularly with the vicissitudes of the market.

Trade

US imports of hardwood plywood have gone from 2.3 million m^3 in 2000 to over 4.5 million m^3 in 2006 (*Figure 6.11*). Since 2003, they have increased in volume by 50% and doubled in value from US$1 billion dollars to over US$2 billion dollars. As with other trends in the commodity markets, China is the major driving force behind these changes. From practically no imports at all in 2001, China is now shipping over 2.3 million m^3 of hardwood plywood valued at nearly US$1 billion to the US (*Table 6.4*). Imports from China alone account for over 40% of total US consumption. China accounted for 52% of 2006 US imports, followed by Malaysia at 12%, Canada and Indonesia each at 9.0%, and Russia at 8%. Of the major suppliers, only Canada and Russia have temperate species both for face and core. Practically all hardwood plywood imported from Russia has a birch veneer face. Much of what is being imported from China is also of birch or poplar.

Figure 6.11: Major Suppliers of US Hardwood Plywood Imports



Source: GTIS and ITC

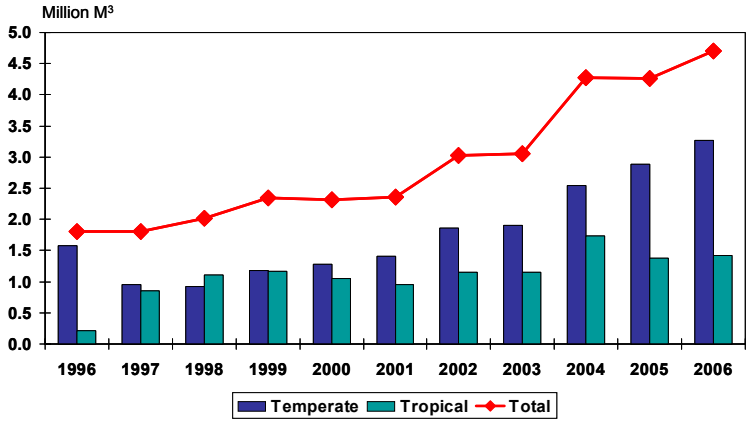
Although Chinese plywood is typically of lower quality and has higher percentage of rejects, it is still attractive for importers and distributors as it is 30-40% cheaper than US birch plywood. The end-uses are about 75% for visible applications and 25% for covered parts of cabinet cases and upholstered furniture. The major applications are in case goods, for shelving, bottom drawers and backs. In addition, Chinese birch plywood is also competing with softwood plywood in the D-I-Y market.

As best as can be determined from the trade statistics, hardwood plywood with one or more layers of tropical species represented 1.4 million m^3 or 30% of hardwood plywood imports (*Figure 6.12*). The US is the second largest consumer of tropical hardwood plywood after Japan, according to ITTO. ITTO producer countries accounted for 62% of US tropical hardwood plywood imports and Greater China and Singapore supplied an additional 30% (*Table 6.4*). The major suppliers of tropical hardwood plywood to the US market in 2006 were: Malaysia (34%), China (29%), and Indonesia (23%).

Imports of tropical plywood peaked in 2004 at 1.7 million m^3, and last year totaled approximately 1.4 million m^3. The decline is attributable to the increase in competitively priced temperate plywood imports, mostly from China, which have displaced both tropical hardwood plywood and domestic hardwood plywood. Until 2003, Indonesia was the largest supplier of tropical plywood to the US, but has since been overtaken by Malaysia with China a close second (*Figure 6.13*). About 6% of 2006 tropical plywood imports entered the US from Canada.

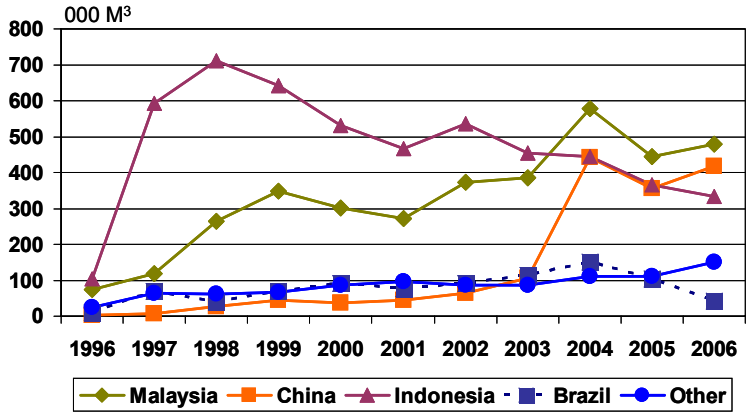
Brazil was for a long time a major supplier of hardwood plywood to the US, but due to the strengthening Real during the past few years, prices have reached levels that are less competitive than those of Asian suppliers. Brazil is a major exporter of softwood plywood to the US. Softwood plywood imported from Brazil often has hardwood core (Eucalyptus and poplar) but would be declared as softwood plywood in the Customs statistics.

Figure 6.12: US Hardwood Plywood Imports



Source: ITC and GTIS

Figure 6.13: US Imports of Tropical Plywood



Source: GTIS and ITC

China has been supplying the US predominantly with core panels (3 or 5 ply) and US manufacturers have been adding the face veneer. However, as the quality control has slowly improved, the share of finished product imports from China has been increasing. Finished hardwood plywood imports from China, often used for flooring, cabinets and furniture, typically have a tropical veneer face and a core of poplar, pine, rubberwood or eucalyptus. Common tropical species are meranti (*Shorea* spp) from Malaysia, okoumé (*Aucoumea klaineana*) from Africa, keruing (*Dipterocarpus* spp) from Malaysia and Myanmar and kapur (*Dryobalanops* spp) also from Malaysia.

Table 6.4: US Imports of Hardwood Plywood, 2006

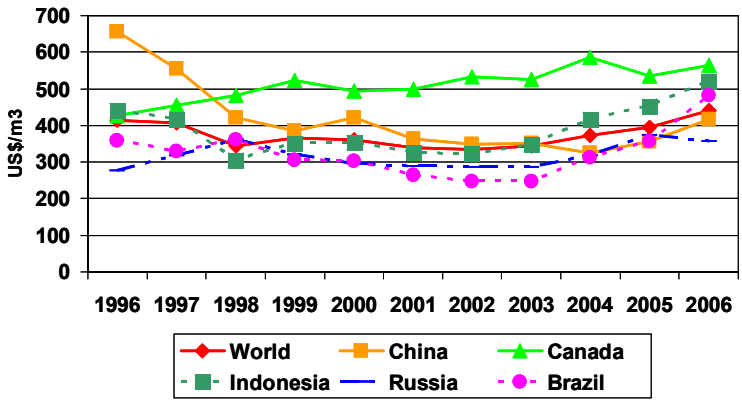
Major Suppliers of Hardwood Plywood					Major Suppliers of Tropical Hardwood Plywood				
	US$ 000	As % of Total Imports	000 M^3	As % of Total Volume		US$ 000	As % of Total Imports	000 M^3	As % of Total Volume
World	$2,073,823	100.0%	4,695.0	100.0%	World	$531,232	100.0%	1422.3	100.0%
ITTO Producers	$551,296	26.6%	1,219.7	26.0%	ITTO Producers	$369,585	69.6%	885.7	62.3%
Greater China and Singapore	$986,222	47.6%	2,365.0	50.4%	Greater China and Singapore	$129,185	24.3%	423.1	29.8%
China	$961,363	46.4%	2,322.2	49.5%	Malaysia	$183,026	34.5%	478.9	33.7%
Canada	$288,284	13.9%	528.3	11.3%	China	$126,168	23.8%	417.8	29.4%
Malaysia	$212,123	10.2%	503.1	10.7%	Indonesia	$155,694	29.3%	333.2	23.4%
Indonesia	$201,084	9.7%	385.6	8.2%	Canada	$22,804	4.3%	84.3	5.9%
Russia	$127,446	6.1%	357.3	7.6%	Brazil	$18,009	3.4%	41.8	2.9%
Brazil	$89,133	4.3%	192.4	4.1%	India	$1,505	0.3%	12.3	0.9%
Finland	$29,448	1.4%	50.2	1.1%	Thailand	$6,596	1.2%	11.5	0.8%
Ecuador	$22,326	1.1%	55.8	1.2%	Korea South	$1,293	0.2%	9.6	0.7%
Taiwan	$21,886	1.1%	37.7	0.8%	Spain	$2,086	0.4%	9.1	0.6%
New Zealand	$16,948	0.8%	42.3	0.9%	Taiwan	$2,969	0.6%	5.3	0.4%
All Others	$103,783	5.0%	220.0	4.7%	All Others	$11,082	2.1%	18.5	1.3%

Source: GTIS and ITC Dataweb

Import Prices

From 1998 to 2004, the average value of imported hardwood plywood was fairly stable at approximately US$350/ m3, according to customs data (Figure 6.14). During the past two years, the average price has increased about 20% to US$441/ m3. Average tropical plywood import prices from Brazil and Indonesia have risen the most. Tropical hardwood plywood imports from China have also been trending upward, while import values for temperate hardwood panels from Canada, Russia and China have remained fairly stable.

Figure 6.14: Hard wood Plywood Import Prices



Source: GTIS and ITC

Outlook/Trends/Issues

US domestic plywood manufacturers are clearly feeling the effects of the surge in Chinese imports. Some have petitioned the US government to consider remedies and as this report is drafted, a Congressional request for a factual assessment (a so-called "332" investigation) has been forwarded to the US International Trade Commission. US companies claim that plywood imported from China emit higher levels of formaldehyde, is being sold at artificially low prices because of Chinese government subsidies, is

being shipped with fraudulent labeling, is being misclassified to avoid tariffs and is being manufactured utilizing illegally produced roundwood from Southeast Asia. According to some producers interviewed for this report, the future for hardwood plywood production in the US is not promising given high manufacturing costs and import competition.

Quality is a perennial issue in terms of the face veneer and quality of gluing. However, a number of importers commented that quality of imported hardwood plywood had, in fact, improved over the past couple of years.

The two most critical issues that could affect hardwood plywood imports are: (1) possible trade actions if US producers are found to be economically harmed and (2) new formaldehyde product emission standards proposed in California.

6.4 Hardwood Veneer

US Demand and Production

The veneer market is divided into rotary and sliced veneers, the former used mostly in the manufacture of plywood and the latter in higher-end furniture, cabinetry and architectural woodwork. In terms of US production, about two-thirds of the estimated 650 million m^2 of hardwood veneer produced domestically is rotary-cut and about one-third is sliced. More than half of domestically produced sliced veneer is exported.

Uses and Distribution

Veneer is manufactured from high-quality sawlogs that are commonly priced 4 to 10 times higher than grade 1 sawlogs used for sawnwood. Customers for rotary veneer, sometimes called peeled veneer, are typically plywood manufacturers and require consistency in quality and thickness more than other attributes. In contrast, for sliced veneer, which is most often used in furniture or architectural woodwork applications, customers often specify attributes related to color, texture, figure, and/or ability to align and match grain.

Imported tropical veneers are used both for core stock as well as for exposed uses. Veneer thickness varies widely both by market and by originating source. Core veneers from Africa tend to be 4.1 – 4.2 mm in thickness, while those from Asia tend to be thinner, ranging between 3.2 - 3.6 mm. Face veneers range anywhere from 0.4 mm to 1.5 mm in thickness, with rotary veneers generally in the upper end of the range.

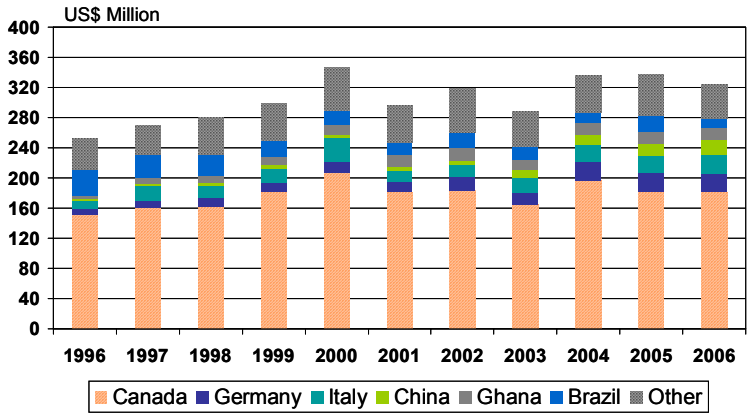
A 1995 study of end-uses for imported hardwood veneer revealed that plywood manufacturers consumed 65-70% of core veneers (predominantly rotary veneers), furniture manufacturers 20% and re-manufacturers 10-15%. About 75% of face veneers were consumed directly in furniture manufacturing and about 25% by paneling manufacturers (presumably in preparation for use as wall paneling, other architectural woodwork or furniture).[21] Unlike end-uses for imports of hardwood plywood that have changed since 1995, end-uses of veneer in the US market has likely remained similar as in the early 1990s. Species of imported veneers have undoubtedly changed, however, with more African species in the mix of imports and much less mahogany.

Trade

Since the mid 1990s, the value of global trade of hardwood veneer has doubled from about US$1.5 billion dollars to almost US$3 billion dollars according to ITTO and WRI estimates. From 1996 to 2005, US imports increased from US$253 million to US$337 million, and then decreased in 2006 to US$323 million (*Figure 6.15*). As US hardwood veneer imports have increased at a slower rate than the worldwide trend, the US share of total trade declined from 16% in 1996 to11.5% in 2005. In 2006, the three major hardwood veneer suppliers to the US were Canada, Germany and Italy (*Table 6.5*). Together, they accounted for 72% of the total imports (by value) and all shipped temperate hardwood species, birch, red oak and maple being the most common species.

[21] Smith, P, Haas, M. and Luppold, W. “An Analysis of Tropical Hardwood Product Importation and Consumption in the US.” *Forest Products Journa*l. 45(4): 31-37.

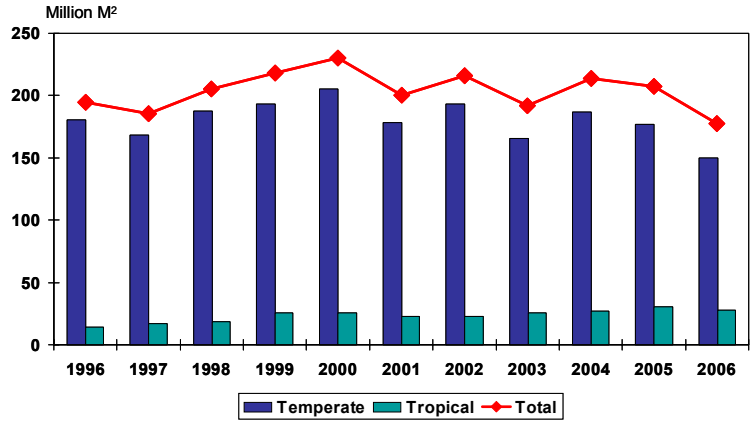
Figure 6.15: US Hardwood Veneer Imports, US$ Value



Source: GTIS and ITC

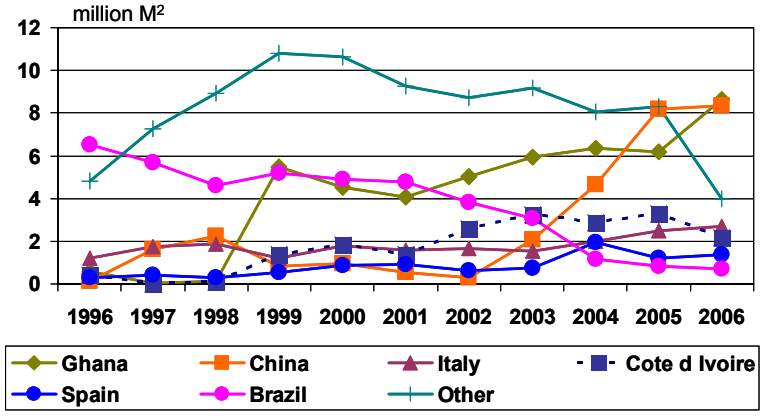
Tropical veneers accounted for 16% of total hardwood veneer imports in 2006 (*Figure 6.16*). The main countries directly supplying the US are Ghana, Cote d'Ivoire and Gabon. China is the second largest supplier of tropical veneers, undoubtedly manufactured from imported tropical roundwood. About 40% of US imports of tropical veneer are supplied by European countries, most notably Italy, France, Spain and Germany. These imports are almost exclusively of African origin and are either processed or reshipped by European manufacturers and importers. US imports of tropical veneer from Brazil have plummeted, mainly because of scarcity and the CITES Appendix II listing of mahogany (*Figure 6.17*).

Figure 6.16: US Hardwood Veneer Imports, by Quantity



Source: ITC and GTIS

Figure 6.17: US Hardwood Veneer Imports by Major Suppliers



Source: GTIS and ITC

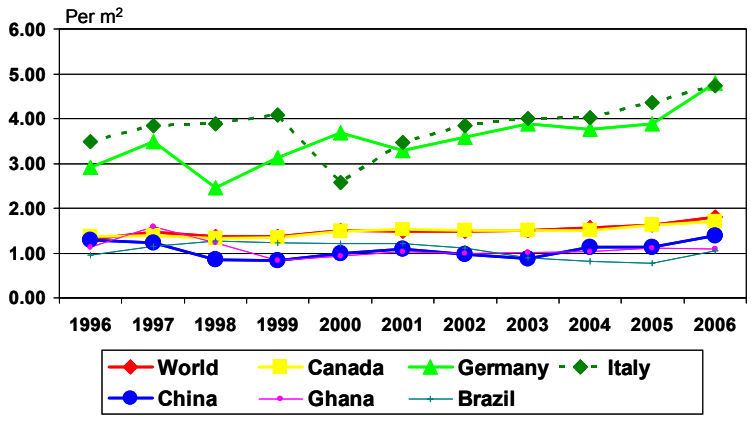
Table 6.5: US Tropical Hardwood Veneer Imports, 2006

Major Suppliers of Tropical Hardwood Veneers				
	US$ 000	As % of Total Value	000 M^2	As % of Total Volume
World	$39,561	100.0%	27,907.8	100.0%
ITTO Producers	$16,466	41.6%	13,749.8	49.3%
Greater China and Singapore	$6,199	15.7%	8,382.4	30.0%
Ghana	$10,087	25.5%	8,653.2	31.0%
Italy	$9,547	24.1%	2,680.0	9.6%
China	$6,056	15.3%	8,362.7	30.0%
Cote d'Ivoire	$2,784	7.0%	2,174.1	7.8%
France	$2,091	5.3%	318.1	1.1%
Spain	$1,830	4.6%	1,361.9	4.9%
Germany	$1,181	3.0%	476.8	1.7%
Gabon	$1,046	2.6%	1,073.5	3.8%
Brazil	$987	2.5%	695.3	2.5%
Canada	$820	2.1%	403.3	1.4%
All Others	$3,133	7.9%	1,708.8	6.1%

Import Prices

The import prices for hardwood veneer have been surprisingly stable, averaging US$1.50/ m^2 for most of the past ten years (*Figure 6.18*), although prices moved up in 2005 and 2006 for oak and beech from Germany and from some tropical producing countries. Historically, Germany and Italy have supplied veneer at the high end of the quality range which is reflected in the average import values – over US$3.50 per m^2 -- from those countries. Customs data show that volumes imported to the US have increased faster than their value over the past few years, indicating that lower-value veneer imports have risen faster than the importation of high-quality veneer. When comparing value by surface area it is important to keep in mind that the thickness of the veneer can range between 0.4mm to 3.5 mm and the quality can vary depending on species and origin.

Figure 6.18: US Hardwood Veneer Imports, Unit Values



Source: ITC and GTIS

Outlook/Trends/Issues

Finding suitable substitutes for quality mahogany (*S.* macrophylla) veneer has been the major challenge for veneer importers who have shifted more to African species. Substitutes have included okoumé and sapelle, among others. After availability, quality is the issue of most concern to importers and end-users.

1.1 With wood costs increasing, particularly of high-quality tropical wood, there are new product developments using ultra-thin veneer (between 0.4-0.9 mm) as overlays on MDF and particleboard. Sometimes the veneer is first glued on paper to increase the stability and to allow extra thin veneer to be used for both paneling and furniture. With very thin veneer, greater importance need be placed on wood high quality and consistency of moisture content. The veneer laminated composite boards are often used for office furniture and cabinets in kitchens, dining and living rooms.

1.2 Another end-use for veneer that is becoming increasingly popular and increasingly competing with solid wood floors is engineered flooring that uses a veneer surface. The veneer is often 3-4 mm thick, but is thinner on some product choices. Tropical veneer is currently being used for engineered flooring, but opportunities for expanding its use remain in this market segment.

6.5 Millwork -- Hardwood Mouldings and Builders Joinery Products

US Demand

The millwork industry covers a wide array of wood products that includes mouldings, windows, doors, and various wood assemblies for construction or other purposes. In the US market, the kinds of wood that are used for millwork have shifted as certain species have become less available and a broader range of suitable domestic and importer species have become increasingly utilized. For example, historically, ponderosa pine (*Pinus ponderosa*) was a species of choice for manufacturing wood windows and doors as well as mouldings. As supplies of ponderosa pine diminished with reduced harvesting on public forest land, radiata pine from New Zealand and Chile was substituted. Yellow poplar -- a domestic hardwood species – is now widely used for construction-related mouldings. It is widely available, economical, and is easy to machine and paint. Imports of both softwood and hardwood mouldings also represent a significant (and expanding) share of the millwork market which, along with most wood products, correlates closely with construction activity.

The major joinery product relevant to the tropical wood business is doors, and specifically exterior entry doors. Again, demand is linked closely to housing starts and to a lesser extent, repair and remodeling. Although estimates vary, a huge number of doors are sold in the US every year. By one estimate, 62.6 million interior doors and 15 million exterior doors were sold in 2005.[22] Interior doors are typically “flush” hollow-core and are made with hardboard, molded hardboard or thin plywood.

In contrast to interior doors, where wood represents on the order of 95% of units sold, wood is the principal material in approximately 10% of entry doors. Steel dominates the entry door market. Approximately 1.4 million wood entry doors were sold in 2005. Imported doors comprise about 30% of the US market.

US Production

According to US Department of Commerce data, US shipments of millwork products totaled US$28.6 billion in 2005. This includes all forms of mouldings as well as wood windows and doors. There are generally two types of moulding producers in the US: those that produce stock mouldings and parts for distribution through retail sawnwood dealers or contractor yards, and those that produce custom mouldings. The latter is generally comprised of small firms that produce on custom orders. Some importers of tropical wood products also produce custom millwork products at the site of their distribution yards.

The US interior door market is comprised of three large producers. While molded hardboard is the main type of panel used for interior doors, followed by flat hardboard, imported plywood is also commonly used as a doorskin. Only a small percentage of the interior door market is comprised of solid-wood doors and they are found almost entirely in up-scale housing. Similarly, most door distributors carry lines of imported wood entry doors for the up-scale housing market, including doors made of mahogany and other tropical wood species.

Trade

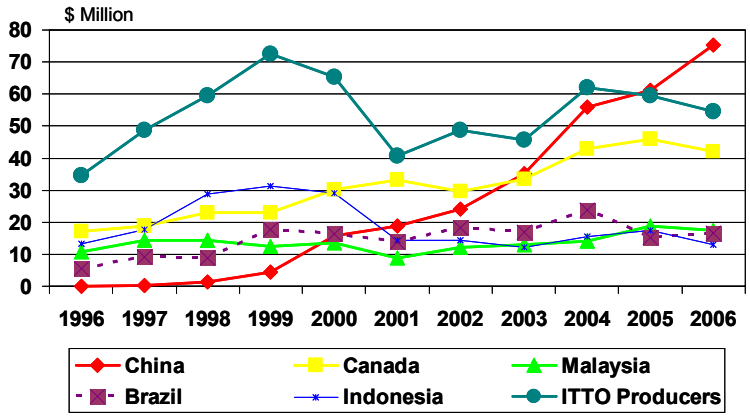
Moulding

US hardwood mouldings have followed much the same pattern as flooring imports with relatively small volumes totaling US$65 million imported in the mid-1990’s increasing to US$200 million in 2005, and then decreasing to US$192 million in 2006. The driving force for this development was the expansion of the Chinese manufacturing sector, making it possible to increasingly supply the US market at competitive prices. Making an assumption that 75% of US imports from ITTO-producer countries and 50% of imports from Greater China are of tropical species, we estimate that about half of the US$191 million of total imported hardwood mouldings (US$81 million) are of tropical species.

China surpassed Canada as the biggest supplier of hardwood mouldings to the US in 2003 and has since continued to increase its market share at the expense of Canada and most other supplying countries. During the past five years, the Chinese market share has gone from 15% to 39% while Canada’s share has declined from 27% to 23% in 2006. Other major suppliers are Malaysia and Brazil, each with about 9% and Indonesia (7%). While imports from China include a mix of hardwood and softwood, those from ITTO-producer countries (28% of the total) are mostly of tropical hardwood (*Figure 6.19*).

[22] Ducker Research Co. as reported by windowanddoor.net: http://www.windowanddoor.net/pastarticles.php?id=411

Figure 6.19: US Hardwood Moulding Imports



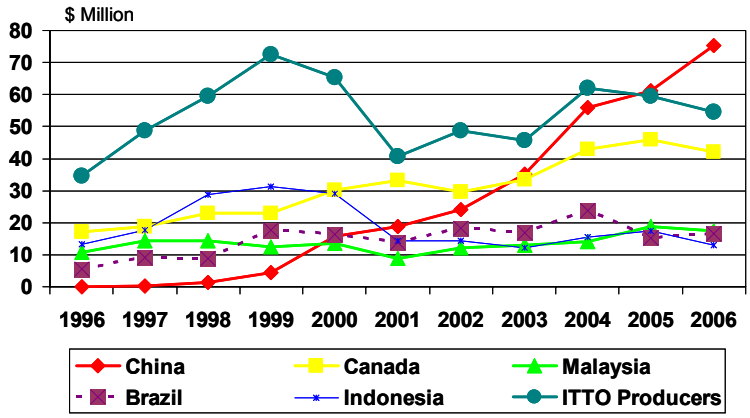
Source: GTIS and ITC

In 2006, the value of Chinese imports reached US$75 million, while Canada's exports to the US fell to US$42 million. As compared to the previous year, Malaysian and Brazilian shipments were practically unchanged in 2006 at US$18 million and $US17 million, respectively (*Table 6.5*).

Imported Moulding Prices

Prices of imported mouldings to the US varied substantially during the 1990's but fluctuations slowed after the year 2000 (*Figure 6.20*). Mouldings from Canada, Italy and Malaysia increased the most in price while Brazilian and Chinese prices were practically unchanged. The average import price has been remarkably stable at just under one dollar per meter for the past ten years. However, moulding products vary widely, and import prices of particular moulding types and species have vacillated widely in some cases.

Figure 6.20: Hardwood Mouldings Import Prices



Source: GTIS and ITC

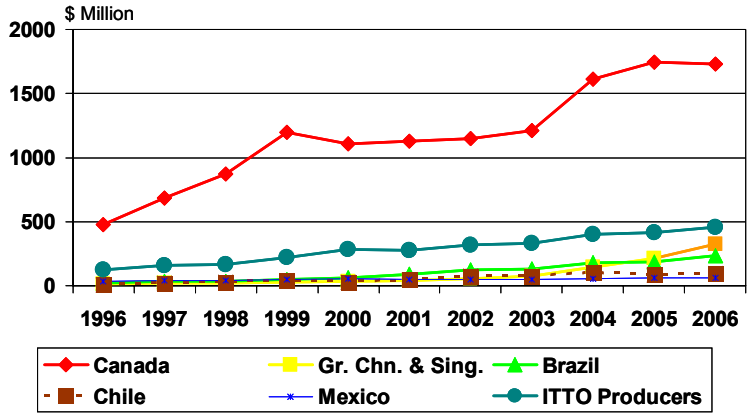
Builders Joinery

"Builders joinery" is an HTS classification (HTS 4418) that includes a mix of wood products used in housing construction and remodeling. This category include windows, doors, parquet panels (but not parquet strips), concrete forming, shakes and shingles. The demand for these products is directly proportional to housing construction and repair and remodeling activity, both of which have been robust up at least up until the middle of 2006. The trade data do not differentiate species used in the fabrication of these imported products, but tropical wood is utilized in a significant portion of these imports. For this analysis, we examine US imports of builders joinery products from ITTO producer countries, and those from Greater China and Singapore. These imports are likely manufactured using a significant, although difficult to determine, amount of tropical wood.

In 2006, the US imported builders joinery products valued at US$2.8 billion. Canada supplied 61% of these imports (*Figure 6.21*). The other major supplying countries were China with an 11% share of the import market, Brazil at 8% and Chile accounting for 3% (*Table 6.6*). In aggregate, ITTO-producers supplied 16% of builders joinery products in 2006. Imports from Greater China and Singapore accounted for 12%. Thus, imports valued at approximately US$789 million, or 28% of the total, likely contained wood of tropical species. Making an assumption that 75% of US imports from ITTO-producer countries and 50% of imports from Greater China are of tropical species, than builders joinery imports valued at approximately US$509 million are fabricated using tropical wood species.

The wood door segment of builders joinery represented 27% of total imports in 2006 and at least 30% of US consumption. This is worth mentioning because entry doors manufactured of tropical species, particularly mahogany or one of its substitutes, are commonly sold in the US. Some eight million doors were imported from ITTO-producers in 2006. Over ten million doors were imported from ITTO-producer countries in combination with Greater China and Singapore, the majority of which likely utilized tropical species for all or part of their construction. While about half of wood doors are sold through millwork shops that customize sizes and framing, a clear trend in the US door market is a larger share of sales being pre-hung doors. Most doors purchased directly from manufacturers by major big-box and other retailers are of the pre-hung variety.

Figure 6.21: US Imports of Builders Joinery Products



Source: GTIS and ITC

Table 6.6: US Imports of Hardwood Moulding, Builders Joinery and Wood Doors

Major Suppliers of:									
Hardwood Moulding			**Builders Joinery**						
			All Builders Joinery Products			Wood Doors, Frames and Thresholds			
	US$ 000	As % of Total Imports		US$ 000	As % of Total Imports	US$ 000	As % of Total Imports	000 Units	As % of Total Imports
World	$191,922	100.0%	World	$2,840,601	100.0%	$773,890	100.0%	22,068	100.0%
ITTO Producers	$54,510	28.4%	ITTO Producers	$460,044	16.2%	$231,050	29.9%	7,798	35.3%
Greater China and Singapore	$80,504	41.9%	Greater China and Singapore	$328,592	11.6%	$104,056	13.4%	2,760	12.5%
China	$75,244	39.2%	Canada	$1,731,642	61.0%	$344,975	44.6%	8,561	38.8%
Canada	$42,029	21.9%	China	$321,824	11.3%	$100,125	12.9%	2,663	12.1%
Malaysia	$17,549	9.1%	Brazil	$238,690	8.4%	$90,275	11.7%	4,901	22.2%
Brazil	$16,705	8.7%	Chile	$93,961	3.3%	$50,979	6.6%	2,335	10.6%
Indonesia	$12,966	6.8%	Mexico	$63,703	2.2%	$38,688	5.0%	456	2.1%
Italy	$9,165	4.8%	Indonesia	$55,983	2.0%	$32,994	4.3%	1,083	4.9%
Taiwan	$4,610	2.4%	Malaysia	$43,996	1.5%	$28,065	3.6%	466	2.1%
Mexico	$4,331	2.3%	Sweden	$39,112	1.4%	$402	0.1%	362	1.6%
Spain	$2,651	1.4%	Germany	$32,128	1.1%	$5,073	0.7%	18	0.1%
Vietnam	$1,110	0.6%	Norway	$18,449	0.6%	$4	0.0%	20	0.1%
Bolivia	$920	0.5%	Bolivia	$18,386	0.6%	$17,283	2.2%	265	1.2%
Germany	$176	0.1%	Italy	$18,317	0.6%	$8,047	1.0%	262	1.2%
Chile	$146	0.1%	Spain	$17,720	0.6%	$3,189	0.4%	54	0.2%
Chile	$146	0.1%	Spain	$17,720	0.6%	$3,189	0.4%	54	0.2%
Chile	$146	0.1%	Spain	$17,720	0.6%	$3,189	0.4%	54	0.2%
All Others	$4,321	2.3%	All Others	$146,690	5.2%	$53,792	7.0%	622	2.8%

Outlook/Trends/Issues

The characteristics of end-users for millwork products range from average D.I.Y. home-owners that purchase a few pieces of moulding or a replacement door or window, to large home-building and construction companies that purchase huge quantities. Moulding imports have been increasing, but so have domestically produced custom mouldings made from imported sawnwood. Exactly how much of imported sawnwood is converted into moulding products is not possible to say, although it is a relatively small quantity particularly with respect to tropical products. Stock mouldings of tropical species are typically used to match similar woods in cabinet and flooring, while custom mouldings are designed for architectural woodwork projects also usually to match the specified species of plywood, veneer or sawnwood being used.

The manufactured of windows and doors have benefited from technologies that improve their insulating or other functional characteristics. Tropical species used in exterior entry doors have benefited from a fashion-driven transition away from oak toward darker woods, and also because of a robust construction activity of up-scale housing units. The US housing is softening and will probably remain tempered over the next few years. The door market will correspondingly be less active, especially for doors at the high-price, high-end of the market.

6.6 Wood Flooring

US Demand and Production

The hardwood flooring market is comprised of both solid and engineered (i.e. plywood) flooring. Solid wood is generally sold as strip, plank or parquet while engineered flooring is typically 3 to 9 laminated layers (depending on thickness and quality) with alternating grain. The US market for wood flooring has been growing fairly steadily since the second half of the 1990s although the market has shifted more towards engineered flooring. Government statistics put the hardwood flooring market at about US$2 billion, but other market research suggests it to be higher. A better estimate of solid wood and engineered flooring sales in 2005 places them at US$2.6 billion in value and 102 million m^2 in area.[23] These figures would include domestic shipments as well as imports. In 2005, hardwood flooring represented about 11% of US floor covering sales. Approximately 100 US companies with an estimated 2006 output of 80 million m^2 are engaged in manufacturing hardwood flooring products.

Competing with hardwood flooring is also laminate flooring, which is typically an MDF substrate with embossed high-density plastic surface. Laminate flooring sales in 2005 were an estimated US$1.5 billion. Because laminate flooring sells for half as much, it has overtaken hardwood flooring in area – an estimated120 million m^2 in 2005. The introduction of new types of engineered flooring products, and particularly laminates, has enabled wood flooring sales to grow at a compound annual rate of 12% since 2001. Imports have captured almost all of the increase in flooring sales and have, in fact, caused significant contraction in the domestic flooring industry. Sales of hardwood and laminate flooring together represent approximately 17% of the US$24 billion US floor covering market.

Uses and Distribution

Oak has traditionally been the species of choice for hardwood flooring in the US, but demand has shifted to a broader mix of species, including many exotic tropical species. Latin American species (and particularly Brazilian species) dominate the US tropical flooring market, although the flooring products themselves are just as likely to be manufactured in China, Canada or in Europe. Among the popular tropical species for flooring are jatobá, cumaru, and cabriuva from Latin America and sapelle and khaya from Africa. Jatobá accounts for the largest single share of the imported flooring market, an estimated 8%.[24] While merbau from Southeast Asia used to be imported into the US, it accounts for a negligible volume of flooring sales today. Sales of bamboo flooring have also been increasing as a less expensive alternative to domestic and imported choices and because it has received some distinction as an environmentally preferred product in “green” building news coverage.

Engineered wood flooring is generally sold as a “floating” floor, meaning that it need not be nailed to a sub-floor. Instead, the flooring strips, sections or planks are tongue and grooved and glued to one another (or in some cases snapped together without glue). The wood pieces expand and contract as a complete flooring system that is appealing because it minimizes cracking and squeaks. Based on field work for this assessment, engineered flooring has clearly become a popular wood flooring type used in home renovation projects and has captured a significant share -- perhaps as much as 25% -- of the new home construction market for hardwood flooring as well.

About 90% of all types of flooring in the US is sold through either floor covering or “big box” home center stores, with the share of the latter rising rapidly from less than 10% in 1997 to over 40% in 2005 (*Table 6.7*).[25] Contractors such as new home builders and other kinds of retail and wholesale outlets account for the balance. The two largest home center chains – Home Depot and Lowes – together operated 3,500 stores in the U.S and have been aggressively promoting flooring sales.

23 Floor Covering Weekly and Catalina Research, Floor Covering Weekly, Vol. 55, No. 18,July 17-31,2006.
24 Based on statistics compiled by National Wood Flooring Association (NFWA) and Catalina Research
25 Based on U.S. Census of Retail Trade for 2002 and trade press assessments.

Table 6.7: Retail Sales of Flooring Products By Type and Outlet, 2005

	Flooring Product			
Type of Outlet	**Total Flooring**	**Carpets and Rugs**	**Wood Flooring**	**Other Hard Surface**
Flooring Stores	54%	69%	63%	33%
Home Centers	41%	22%	34%	66%
Other Retailers	5%	9%	3%	1%

Source: Market Insights/Torcivia as reported by Floor Focus Inc.
(http://www.floordaily.net/features/FeatFlWars0406.htm)

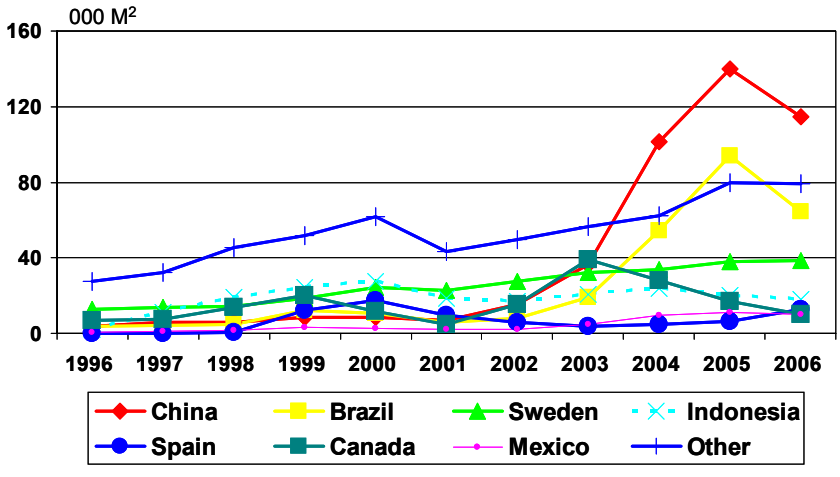
Trade

In the mid-1990's, imports of hardwood flooring to the US were largely insignificant, totaling only around US$20 million annually. By 2005, hardwood flooring imports totaled US$407 million before slipping to US$347 million in 2006. Laminate flooring imports reached US$742 million in 2005 and also declined to US$684 million last year. As in so many other manufactured wood products, large increases in Chinese production and exports have characterized wood flooring trade. Canada, which was the largest supplier of US wood flooring imports in 2003, has seen both volumes and market share plunge since 2003 because of overseas competition. In contrast to imports, US exports of hardwood flooring are much lower although with a weakening US dollar, they have increased over the past five years. US hardwood flooring exports totaled US$104 million in 2006. Canada is the largest export market, with China a distant second. The US exports little by way of laminated flooring products.

US hardwood flooring imports from China have increased more than ten-fold since 2001 and last year represented one-third of wood flooring imports (*Figure 6.22*). The fall off in US imports in 2006 resulted mainly from reduced demand from fewer housing starts. However, Chinese imports were also affected by surcharges on Chinese producers. Chinese imports slipped by 18%, in part because of a change in the "processing trade" tariff preference and value-added tax (VAT) refund that Chinese producers had normally received. For about four months, imported materials used to manufacture products for exports were no longer eligible for those tax preferences. The preferences were reinstated in November, 2006, but a new 10% export tax was applied to solid wood flooring exports which put upward pressure on Chinese flooring prices.

China is exporting flooring products of both tropical and temperate hardwood species predominantly produced from imported roundwood and sawnwood. This includes domestic species from the US shipped to China in the form of sawnwood for further processing into flooring products, as well as both temperate and tropical species from Asia, Latin America and Africa. Based on interviews and field work for this assessment, we believe that approximately 65% of US total hardwood flooring imports, and as much as 80% of US imports of Chinese flooring uses tropical timber species. This estimate recognizes the fact that European and, to a lesser extent, Canadian flooring companies produce tropical wood flooring for export to the US market.

Figure 6.22: US Imports of Hardwood Flooring



Source: ITC and GTIS

Although China has been the dominant player in imports over the past five years, a number of tropical producing countries have also benefited from the increased interest in sourcing flooring products from outside the US. About one-third of flooring imports are supplied by ITTO-producer countries. Among successful competitors in the US flooring market are Malaysia, Indonesia and Brazil (*Table 6.8*).

Table 6.8: US Imports of Hardwood Flooring and Laminate Flooring

Major Suppliers of Hardwood Flooring					Major Suppliers of Laminate Flooring				
	$US 000	As % of Total Value	000 M^2	As % of Total Volume		$US 000	As % of Total Value	000 M^2	As % of Total Volume
World	$347,405	100.0%	20,217.7	100.0%	World	$684,408	100.0%	1010.5	100.0%
ITTO Producers	$110,855	31.9%	7,234.1	35.8%	ITTO Producers	$31,488	4.6%	61.5	6.1%
Greater China and Singapore	$124,001	35.7%	7,427.6	36.7%	Greater China and Singapore	$79,109	11.4%	197.0	18.7%
China	$114,833	33.1%	7,039.8	34.8%	Malaysia	$131,653	19.2%	86.2	8.5%
Canada	$64,228	18.5%	4,204.7	20.8%	China	$120,727	17.6%	201.1	19.9%
Malaysia	$38,744	11.2%	2,323.3	11.5%	Indonesia	$115,828	16.9%	199.6	19.8%
Indonesia	$17,776	5.1%	1,460.0	7.2%	Canada	$108,193	15.8%	139.2	13.8%
Russia	$12,648	3.6%	689.6	3.4%	Brazil	$74,051	10.8%	174.7	17.3%
Brazil	$9,952	2.9%	423.9	2.1%	India	$29,633	4.3%	36.3	3.6%
Finland	$9,894	2.8%	306.7	1.5%	Thailand	$15,643	2.3%	19.7	1.9%
Ecuador	$9,129	2.6%	576.8	2.9%	South Korea	$13,968	2.0%	17.2	1.7%
Taiwan	$9,115	2.6%	346.1	1.7%	Spain	$13,478	2.0%	42.0	4.2%
New Zealand	$8,106	2.3%	342.8	1.7%	Taiwan	$13,383	2.0%	16.0	1.6%
All Others	$52,980	15.3%	2504.0	12.4%	All Others	$47,852	7.0%	78.5	7.8%

Source: ITC and GTIS
Note: Does include flooring products classified in HTS 4412

Import Prices

Hardwood flooring import prices have increased about 20% during the past five years on a per square meter basis, but flooring products vary widely in thickness and quality so changes in per unit import values over time may not be meaningful. The flooring market is highly competitive and most importers and distributors report having experienced downward price pressure and lower margins on the same or similar products during the past three years. Per unit import values for hardwood flooring from China clearly increased in 2006, as did average import values for flooring from Canada and Indonesia.

Outlook/Trends/Issues

While hardwood flooring demand has been strong (and increasing), the popularity of laminate flooring has been growing more rapidly. Laminate flooring tends to compete more directly with vinyl flooring alternatives, rather than solid wood, but competition between laminate flooring and engineered flooring is notable especially at the mid to lower end of the flooring market. Exporters such as China, Malaysia and Indonesia that produce both solid wood flooring and engineered flooring of tropical species are also increasing production and exports of laminate flooring that utilizes MDF or HDF made of rubberwood or poplar. Not only is competition in the US flooring market intense between domestically produced flooring and imports, but also among imported products.

Market research by the organization Metafore show that there are opportunities for suppliers of tropical hardwood flooring products to increase sales in the US market particularly of fixed-width sawnwood and pre-finished flooring products. They suggest that light colored species that can be easily stained to uniform colors have great potential. This trend towards higher usage of pre-finished products should create excellent prospects for suppliers that can deliver lesser-known tropical species of uniform quality.

Some of those surveyed for this assessment indicated that promoting certified wood, wood from plantations, or wood from lesser-known species would expand opportunities for tropical woods. On the other hand, several large importers are skeptical that certification would make any difference many in the general public are suspicious of all wood coming from tropical regions of the world, certified or not. There was more agreement that the biggest competitive threat to imported tropical wood flooring is imported flooring of temperate hardwood species.

The trade data on hardwood flooring mask some classification issues that likely distort many of the reported statistics and, in fact, have been the subject of government review and legal challenges. For example, in litigation involving engineered flooring, the US government successfully argued that a certain engineered flooring products should be classified as a veneer panels subject to an import duty under HTS 4412 instead of as a wood flooring product under HTS code 4409 that carries a lower duty.[26] As flooring products cannot be separately identified in the HTS 4412 statistics, the data discussed in this section do not include flooring products classified within 4412. They are, however, likely of significant volume. Because of misclassifications, flooring import statistics likely understate to some degree the growth trend as some flooring products are known to have been misclassified. A reasonable estimate is that wood flooring imported under a HTS 4412 designation imports equal at least as much if not slightly more than those reported under HTS 4409.

As a consequence of numerous cases of misclassification, US Customs and Border Protection has made hardwood flooring products a “Priority Trade Initiative.” This means that inspections have been increased to ensure that imported flooring products are not being misclassified into categories that carry lower duties. The difference in tariff rate in most cases is the difference between 3.2% (the assessment on end-matched and pre-finished wood flooring) and 8% (the duty on selected plywood products), although unfinished flooring that is not end-matched can enter duty-free.

In addition to plywood flooring products entering as shaped or tongue and grooved wood products, some cases of strip flooring being misclassified as sawnwood have also been investigated. Beginning on January 1, 2007, US Customs created a new grouping for multi-layered flooring and parquet panels in HTS 4418 (4418.72.90). In the future, the trade data should more accurately reflect total imports of flooring products. In general, solid wood flooring products that are not “end matched” or pre-finished can enter free of duty.

[26] Boen Hardwood Flooring, Inc., Plaintiff v. United States, Slip Op. 03-4, United States Court of International Trade. January 7, 2003: http://www.cit.uscourts.gov/slip_op/slip_op03/Slip-Op03-4.pdf.

6.7 Wood Furniture and Furniture Parts

US Demand and Production

The US furniture and furnishings industry is comprised of manufacturers of case goods, kitchen cabinets, upholstery furniture, institutional furniture, office furniture, custom millwork and manufacturers of miscellaneous home furnishings. US government statistics show the value of US furniture industry shipments at US$84 billion in 2005 (*Table 6.8*). According to the trade press, the top 25 US manufacturers and importers of furniture represent an estimated 38% of US furniture shipments.[27]

Many US producers also import components and/or finished furniture products for distribution. In fact, the US furniture industry has experienced a dramatic contraction over the past decade largely as a result of globalization and import competition. For many US manufacturers of wood furniture, lower production costs have favored outsourcing part or all of their production to overseas factories, most notably in China, and Chinese firms themselves have also invested in increased capacity. US "big box" retailers such as Wal-Mart, Costco and Target have boosted sales of less expensive furniture manufactured overseas. As a result, since 1999, US imports of wood furniture have more than doubled from US$6.7 billion to US$14.4 billion in 2006. Precise figures are unavailable, and estimates vary depending on how furniture is grouped, but most analysts believe that imports currently represent upwards of 45% of the total value of wood household and office furniture consumed in the United States. The most successful US furniture-makers during the past five years have tended to be those that produce furniture upscale, higher-end furniture, some of which utilizes tropical sawnwood and high-quality grades of tropical veneer and plywood.

Table 6.9: US Furniture Industry Value of Shipments, 2005

Industry Segments	US$ Billion
Wood Kitchen Cabinet and Counter Tops	$19.018
Upholstered Household Furniture	10.528
Non-upholstered Wood Household Furniture	10.530
Institutional Furniture	4.978
Wood Television, Radio, and Sewing Machine Cabinet	3.495
Wood Office Furniture	12.792
Total Wood-Related	$61.341
Other Furniture and Furnishings	22.950
Total Shipments	$84.291

Source: US Census Bureau, Annual Survey of Manufacturers, 2005

A large segment of the wood furniture industry is kitchen cabinets with estimated shipments of US$19 billion in 2005. That kitchen cabinets are the largest furniture segment is not surprising considering that new homes in the US contain on average over 16 kitchen, bath and miscellaneous other pre-fabricated cabinet units.[28] Not only are kitchen cabinets the largest sub-sector of the US wood furniture industry, it is also a very large consumer of imported hardwood plywood and other wood products. According to one knowledgeable industry participant, as much as 25% of all imported hardwood plywood is consumed by US kitchen cabinet manufacturers. Hardwood plywood is ubiquitous in the construction of cabinet cases, drawer sides and bottoms. The species mix is heavily weighted toward temperate hardwoods, although some plywood with tropical layers is utilized. Although not widely used in the kitchen cabinet market, tropical species in exposed surfaces (such as cabinet doors, for example) has increased over the past five years. Imports of kitchen cabinets themselves represent only a small share of consumption, with the majority (almost two-thirds) imported from Canada. However, as with other wood products segments discussed in this assessment, imports from China, while still relatively small, have been growing very rapidly. In interviews for this assessment, US kitchen cabinet manufacturers noted that, unlike most other kinds of furniture than can be inventoried and held for future sale, kitchen cabinets tend to be ordered for a specific delivery schedule. They indicated that the business requires too much factory-customer interaction to allow imports of finished kitchen cabinets to compete well. Nevertheless, it appears that stock, ready-made kitchen cabinets and associated accessories such as mouldings are a large business at "big-box" retailers such as Home Depot and Lowes and other outlets. Kitchen cabinets may be a growth opportunity for imports.

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27 Furniture Today. Vol. 30, No. 36, May 22, 2006.

28 Canada Department of Foreign Affairs and International Trade. Key U.S. Housing Markets: Opportunities and Contacts -- Seattle. Prepared by Canada Mortgage and Housing Corporation and FW Dodge. Available at: http://cmhc.ca/en/hoficlincl/cmhcin/suexin/inma/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=60957.

In domestic production of wood-based furniture, hardwood sawnwood is the most commonly used raw material in household and office furniture. A study by the University of Louisiana revealed that 61% of the cost of wood materials used in making wood furniture in the US was hardwood sawnwood, 13% was hardwood plywood, 10% was MDF and the remaining 11% was a mix of particle board, softwood sawnwood and plywood.[29] Upholstered furniture had as much as 73% hardwood sawnwood, while 8% was softwood sawnwood and the rest was hardwood plywood and particle board. The value of wood products for office furniture was split between hardwood sawnwood accounting for 36% of the total value, hardwood plywood 19%, MDF 18% and particle board 12%.

Trade

US imports of both wood furniture and wood furniture parts have gone from US$7.3 billion in 1999 to over US$15.6 billion in 2006. The biggest increases have been in bedroom furniture and upholstered couches and chairs (wood frames), which have gone up more than 100% since 2001 (*Figure 6.23*). About 35% of wood furniture and parts imports is classified in non-specific HTS codes.

China has quickly risen to be the top supplier of wooden furniture to the US market. In 2006, China supplied US$7.3 billion (47% of the total) of wood furniture and parts to the United States (*Table 6.10*). Although it is difficult to know exactly what kinds of species and volumes are used to produce furniture for the US market, a significant share of tropical species is undoubtedly included. As working assumptions based on our review, we believe that 75% of furniture and parts imports from ITTO producers and 50% of imports from Greater China and Singapore likely utilize a significant volume of tropical wood. If these assumptions are correct, than US imports of wood furniture and parts that utilize tropical wood species were valued at an estimated $US6.1 billion in 2006.

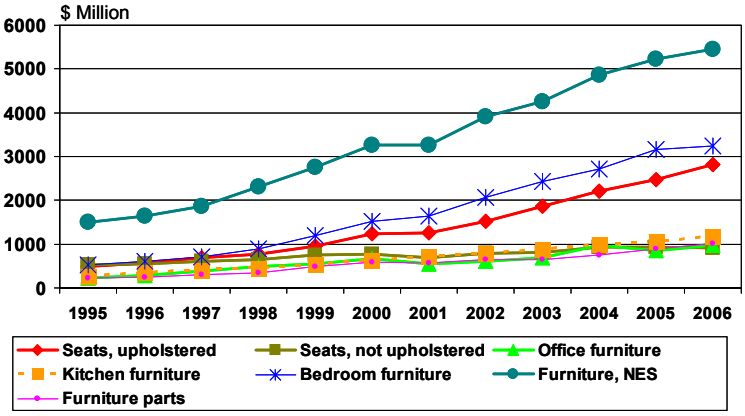
Table 6.10 US Imports of Wood Furniture and Furniture Parts, 2006

Major Suppliers of Wood Furniture and Parts		
	US$ 000	%
World	$15,634,941	100.0%
ITTO Producers	$3,058,673	19.6%
Greater China and Singapore	$7,550,746	48.3%
China	$7,359,965	47.1%
Canada	$2,492,034	15.9%
Vietnam	$843,095	5.4%
Malaysia	$788,506	5.0%
Mexico	$740,817	4.7%
Italy	$661,621	4.2%
Indonesia	$545,983	3.5%
Thailand	$356,190	2.3%
Brazil	$304,435	1.9%

Source: GTIS ITC Dataweb

[29] Wu, Q., and R. P. Vlosky. 2000. "Panel products: a perspective from furniture and cabinets manufacturers in the southern United States." Forest Products J. 50(9):45-50.

Figure 6.23: US Imports of Wood Furniture and Parts



Source: GTIS and ITC

Outlook/Trends/Issues

US imports of wood furniture are a contentious issue to some segments of US manufacturing. Obviously, furniture manufacturers that have not availed themselves of off-shoring opportunities have been economically harmed by the influx of lower priced furniture. Employment in the US furniture industry has declined dramatically since the late 1990s. US hardwood sawnwood producers have also lost a significant domestic market for their temperate hardwood species. On the other hand, US hardwood exports have increased as at least a portion of the lost domestic demand has shifted to the export market. “Big-box” retailers and American consumers have benefited from lower prices for wood household and office furniture.

Sales of furniture parallel the economy in general and home-building activity, both of which are showing signs of softening. The near-term outlook is for less robust furniture sales overall, but because of the price-competitiveness of imports, the weakening will be felt more so by domestic manufacturers than by foreign producers.

In interviews for this assessment, US kitchen cabinet manufacturers noted that, unlike most other kinds of furniture than can be inventoried and held for future sale, kitchen cabinets tend to be ordered for a specific delivery schedule. They indicated that the kitchen cabinet business requires too much interaction between factory (through a dealer) and customer to allow imports of finished kitchen cabinets to compete well. Nevertheless, it appears that stock, ready-made kitchen cabinets and associated accessories such as mouldings are a large business at “big-box” retailers such as Home Depot, Lowes and other outlets. Kitchen cabinets may be a growth opportunity for imports.

Two portentous issues for foreign producers of wood furniture are the possibility that trade remedies could be imposed to offset domestically harmed industry and claims by environmental groups that imported furniture is manufactured using illegally harvested timber products. In the first instance, the US government has already imposed anti-dumping duties on Chinese manufacturers of wood bedroom furniture (see an earlier section of this report for more details) and recently filed a request to the WTO to conduct an investigation into Chinese manufacturing subsidies. On the issue of illegal logging, proposals to address imports of purportedly illegal wood products are being seriously considered. Proposals include legislation that would allow the US government to prosecute importers of products produced in violation of foreign laws and/or require chain-of-custody tracking of wood products contained in furniture.

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APPENDICES

APPENDIX I
Acronyms and Abbreviations

AF&PA	American Forest and Paper Association
APHIS	Animal and Plant Health Inspection Service
ATFS	American Tree Farm System
BLS	Bureau of Labor Statistics
Census	US Census Bureau
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoC	Chain of Custody
COP	Conference of Parties
C-TPAT	Customs- Trade Partnership Against Terrorism
Customs	US Customs and Border Protection
FLEG	Forest Law and Governance
FRB	Federal Reserve Board
FSC	Forest Stewardship Council
FTA	Free Trade Agreement
FTAA	Free Trade Area of the Americas
GATT	General Agreement on Tariffs and Trade
GSP	General System of Preferences
GTIS	Global Trade Information Service
HPVA	Hardwood Plywood and Veneer Association
HTS	Harmonized Tariff Schedule
IPPC	International Plant Protection Convention
ISPM	International Standards for Phytosanitary Measures
ITC	US International Trade Commission
LEED	Leadership in Energy and Environmental Design
LVL	Laminated Veneer Lumber
MOU	Memorandum of understanding
NAFTA	North American Free Trade Agreement
NGO	Non-governmental organization
NTM	Non-tariff measures
NTR	Normal Trade Relations
NWFA	National Wood Flooring Association
PEFC	Programme for the Endorsement of Forest Certification
ppm	Parts per million
PPQ	APHIS Plant Protection and Quarantine
SCA	Seneca Creek Associates, LLC
SFI	Sustainable Forestry Initiative
TBT	Technical Barriers to Trade Agreement
USGBC	US Green Building Council
USFWS	US Fish and Wildlife Service
USTR	Office of the US Trade Representative
WDMA	Window and Door Manufacturers Association
WRI	Wood Resources International, LLC
WTO	World Trade Organization
WWPA	Western Wood Products Association

APPENDIX II
US 10-Digit HTS Import Codes for Hardwood and Related Products – 2006

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD ROUNDWOOD	
√	4403490000	OTHER, OF TROPICAL WOOD SPECIFIED IN SUBHEADING NOTE 1 TO THIS CHAPTER, NESOI, WOOD IN ROUGH, WHETH/NT STRIPPED OF BARK/SAPWOOD OR ROUGHLY SQUARED ETC	903,600
	4403910020	RED OAK WOOD IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQAURED, NOT TREATED	464,087
	4403910040	OAK EXCEPT RED OAK WOOD, IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	1,362,652
	4403920000	BEECH (FAGUS SPP.) WOOD IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	74,545
	4403990022	PULPWOOD OF POPLAR, ASPEN OR COTTONWOOD	1,107,219
	4403990024	PULPWOOD, NONCONIFEROUS NESOI	4,845,437
	4403990026	POLES, PILES AND POSTS OF POPLAR, ASPEN OR COTTONWOOD, IN THE ROUGH, NOT TREATED	570,990
	4403990027	POLES, PILES AND POSTS OF BIRCH, IN THE ROUGH, NOT TREATED	152,796
	4403990029	POLES, PILES AND POSTS, IN THE ROUGH, NOT TREATED, NONCONIFEROUS NESOI	153,796
	4403990030	BIRCH (BETULA SPP.) WOOD IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	2,769,732
	4403990040	ASH WOOD, IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	596,888
	4403990050	WESTERN RED ALDER WOOD, IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	66,236
	4403990055	CHERRY WOOD, IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	556,957
	4403990060	MAPLE (ACER SPP.) WOOD IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	8,102,464
	4403990065	YELLOW POPLAR WOOD, IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	0
	4403990067	WOOD OF POPLAR NESOI; OF ASPEN OR COTTONWOOD, IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	689,550
	4403990070	WALNUT (JUGLANS SPP.) WOOD IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	1,110,820

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD ROUNDWOOD (con't)	
	4403990075	PAULOWNIA WOOD, IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	8,945
	4403990091	NONCONIFEROUS WOOD, NESOI, IN THE ROUGH, WHETHER OR NOT STRIPPED OF BARK OR SAPWOOD, OR ROUGHLY SQUARED, NOT TREATED	18,189,956
		HARDWOOD SAWNWOOD	
√	4407240005	BALSA WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, OF A THICKNESS OVER 6 MM, ROUGH	15,635
√	4407240006	BALSA WOOD, SAWN/CHIPPED LENGTHWISE, GT 6MM THICK	13,985,987
√	4407240010	BALSA WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, OF A THICKNESS EXCEEDING 6 MM, NESOI	13,941,869
√	4407240025	MAHOGANY WOOD, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	23,795,025
√	4407240026	MAHOGANY WOOD SAWN/CHIPPED LENGTHWISE GT 6MM THICK	34,330,293
√	4407240030	MAHOGANY WOOD, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	9,350,498
√	4407240090	BABOEN AND IMBUIA WOOD, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	3,836,156
√	4407240091	VIROLA and IMBUIA WOOD SAWN LENGTHWISE, GT 6MM THICK	7,924,858
√	4407240095	BABOEN AND IMBUIA WOOD, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	2,852,044
√	4407250000	DARK RED MERANTI, LIGHT RED MERANTI AND MERANTI BAKAU WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED SANDED,THICKNESS > 6MM	10,254,104
√	4407260000	WHITE LAUAN, WHITE MERANTI, WHITE SERAYA, YELLOW MERENTI AND ALAN, WOOD SAWN OR CHIPPED LENGTHWISE, SLICED/PEELED,THICKNESS OVER 6MM	53,784
√	4407290005	TEAK (TECTONA GRANDIS) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER PLANED, SANDED, FINGER-JOINTED, THICKNESS OVER 6MM, ROUGH	8,070,849
√	4407290006	ACAJOU D'AFRIQUE/AFR MAHOG SAWN LNGWISE GT 6MM THK	6,723,003
√	4407290010	TEAK WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANDED, SANDED OR FINGER-JOINTED, OF A THICKNESS EXCEEDING 6MM, NESOI	1,363,669
√	4407290011	ANINGRE/ANIEGRE/ANEGRE SAWN LNGTHWISE GT 6MM THICK	214,192
√	4407290016	KERUING WOOD SAWN/CHIPPED LENGTHWISE, GT 6MM THICK	9,812,214

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD SAWNWOOD (con't)	
√	4407290021	IPE WOOD, SAWN OR CHIPPED LENGTHWISE, GT 6MM THICK	7,914,683
√	4407290025	KERUING WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER PLANED, SANDED, FINGER-JOINTED, THICKNESS OVER 6MM, ROUGH	1,237,288
√	4407290026	SAPELLI/SAPELE WOOD, SAWN LENGTHWISE, GT 6MM THICK	5,862,985
√	4407290030	KERUING WOOD, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANDED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM NESOI	7,556,231
√	4407290031	TEAK WOOD SAWN/CHIPPED LENGTHWISE, GT 6MM THICK	12,069,617
√	4407290090	TROPICAL WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6MM, ROUGH, NESOI, NOTE 1	25,776,658
√	4407290091	TROPICAL WOOD, SAWN LENGTHWISE, GT 6MM THICK NESOI	44,118,934
√	4407290095	TROPICAL WOOD SAWN OR CHIPPED LENGTHWISE, ALICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, OVER 6MM, NESOI, SEE NOTE 1 TO THIS CHPTR	23,040,412
	4407910020	RED OAK WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	1,984,600
	4407910021	RED OAK WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	1,510,321
	4407910022	RED OAK WOOD SAWN/CHIPPED LENGTHWISE GT 6 MM THICK	2,769,703
	4407910060	OAK EXCEPT RED OAK WOOD, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	2,569,317
	4407910061	OAK EXCEPT RED OAK WOOD, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	1,096,519
	4407910063	OAK WOOD SAWN/CHIPPED LNGTHWISE GT 6MM THICK NESOI	2,492,620
	4407920000	BEECH WOOD, SAWN/CHIPPED LENGTHWISE, GT 6 MM THICK	12,153,948
	4407920020	BEECH (FAGUS SPP.) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	388,987
	4407920040	BEECH (FAGUS SPP.) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	13,388,770
	4407990005	ASH WOOD, SAWN OR CHIPPED LENGTHWISE, GT 6MM THICK	659,520
	4407990011	N. AMER. BIRCH WOOD, SAWN LENGTHWISE, GT 6MM THICK	5,717,222
	4407990013	EUROPEAN BIRCH WOOD, SAWN LENGTHWISE, GT 6MM THICK	1,718,863
	4407990019	BIRCH WOOD, SAWN LENGTHWISE, GT 6MM THICK, NESOI	9,957,681

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD SAWNWOOD (con't)	
	4407990020	HARD MAPLE WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS EXCEEDING 6 MM, ROUGH	54,536,515
	4407990021	MAPLE (EXCET JAPANESE AND HARD) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6MM, ROUGH	7,607,246
	4407990022	CHERRY WOOD, SAWN/CHIPPED LENGTHWISE, GT 6MM THICK	5,639,769
	4407990025	MAPLE (EXCEPT JAPANESE MAPLE) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	8,360,487
	4407990030	WESTERN RED ALDER (ALNUS RUBRA SPP.) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER PLANED, SANDED, FINGER-JOINTED, THICKNESS OV 6MM ROUGH	6,086,627
	4407990031	WESTERN RED ALDER WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OV 6 MM, NESOI	3,848,422
	4407990040	CHERRY WOOD, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	4,616,947
	4407990041	CHERRY WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OV 6 MM, NESOI	1,862,504
	4407990042	HICKORY and PECAN WOOD SAWN LENGTHWISE GT 6MM THICK	517,508
	4407990045	YELLOW POPLAR WOOD, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	73,178
	4407990046	YELLOW POPLAR WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OV 6 MM, NESOI	217,015
	4407990047	POPLAR NESOI; ASPEN; COTTONWOOD WOOD SAWN/CHIPPED LENGTHWISE, SLICED/PEELED, WHETHER OR NOT PLAND/SANDED/FINGER-JOINTD THICKNESS OV 6 MM ROUGH NT TRTD	13,158,038
	4407990048	POPLAR NESOI/ASPEN/COTTONWOOD SAWN/CHIPPED LENGTHWISE, SLICED/PEELED, WHETHER OR NOT PLANED/SANDED/FINGER-JOINTED, THICKNESS OV 6 MM, NESOI	19,482,608
	4407990050	BIRCH (BETULA SPP.) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6MM, ROUGH	18,506,744
	4407990051	BIRCH (BETULA SPP.) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	11,380,803
	4407990052	HARD MAPLE WD SAWN LNGWISE GT 6MM THK EXC JAPANESE	35,790,374
	4407990059	MAPLE WD SAWN LNGWISE GT 6 MM THK EXC JPNESE NESOI	11,005,908
	4407990061	WALNUT WOOD, SAWN/CHIPPED LENGTHWISE, GT 6MM THICK	1,160,607
	4407990063	WESTERN RED ALDER WOOD SAWN LNGTHWISE GT 6MM THICK	8,546,154

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD SAWNWOOD (con't)	
	4407990065	ASH (FRAXINUS SPP.) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-HJOINTED, THICKNESS OVER 6MM, ROUGH	325,808
	4407990066	ASH (ERAXINUS SPP.) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	407,121
	4407990070	HICKORY and PECAN WOOD SAWED OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	171,932
	4407990071	HICKORY and PECAN WOOD SAWED OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	271,050
	4407990072	YELLOW POPLAR WOOD, SAWN LENGTHWISE, GT 6MM THICK	320,211
	4407990075	WALNUT (JUGLANS SPP.) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	502,208
	4407990076	WALNUT (JUGLANS SPP.) WOOD SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, NESOI	1,078,078
	4407990079	POPLAR/ASPEN/COTTONWOOD SAWN ETC EXC YELLOW POPLAR	24,662,974
	4407990091	NONCONIFEROUS WOOD NESOI, SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OVER 6 MM, ROUGH	27,413,044
	4407990096	NONCONIFEROUS WOOD NESOI SAWN OR CHIPPED LENGTHWISE, SLICED OR PEELED, WHETHER OR NOT PLANED, SANDED OR FINGER-JOINTED, THICKNESS OV 6 MM, NESOI	36,517,777
	4407990097	NONCONIFEROUS WOOD SAWN LNGTHWISE GT 6MM THK NESOI	75,584,789
		HARDWOOD PLYWOOD	
√	4412130520	PLYWD FACE PLY BIRCH AT LEAST ONE OUTER PLY TROPICAL WD, SOLEY SHEETS OF WOOD, NOT/OR SURFACE COVERED CLEAR MAT'L NOT OVER 3.6 THICK/1.2 WIDE/2.2 LONG	16,310,604
√	4412130540	PLYWOOD WITH A FACE PLY OF BIRCH, AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SOLELY OF SHEETS OF WOOD NOT OVER 6MM THICK, NOT SURFACE COVERED, NESOI	10,128,309
√	4412130560	PLYWOOD WITH A FACE PLY OF BIRCH, WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SOLELY OF SHEETS OF WOOD EACH PLY NOT OVER 6MM IN THICKNESS, NESOI	27,720,980
√	4412132510	PLYWD FACE PLY OF SPANISH CEDAR, ONE OUTER PLY OF TROPICAL WOOD, SOLEY SHEETS OF WOOD, NOT/OR SURFACE COVERED WITH A CLEAR MAT'L, NOT OVER 6MM THICK	4,969,731
√	4412132520	PLYWOOD WITH A FACE PLY OF WALNUT, AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SOLEY SHEETS OF WOOD, NOT/OR SURFACE COVERED WITH CLEAR MAT'L, < 6MM THICK	255,124

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD PLYWOOD (con't)	
√	4412133030	PLYWOOD WITH A FACE PLY OF SEN, AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SOLEY SHEETS OF WOOD, NOT/OR SURFACE COVERED CLEAR MAT'L, NOT OVER 6MM THICK	0
√	4412133040	PLYWOOD WITH A FACE PLY OF MAHOGANY, AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SOLEY SHEETS OF WOOD, NOT/OR SURFACE COVERED CLEAR MAT'L, <6MM IN THICK	0
√	4412133050	PLYWOOD PANELS WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, NOT/OR SURFACE COVERED WITH CLEAR MAT'L, NOT OVER 3.6MM THICK, 1.2M WIDE, 2.2M LONG NESOI	0
√	4412133060	PLYWOOD WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, NOT OVER 6MM THICK, NOT SURFACE COVERED, NESOI	0
√	4412133070	PLYWOOD WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, NOT OVER 6MM THICK, SURFACE COVERED WITH CLEAR MAT'L, NESOI	0
√	4412134040	PLYWOOD WITH A FACE PLY OF MAHOGANY, AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SOLEY SHEETS OF WOOD, NOT/OR SURFACE COVERED CLEAR MAT'L, <6MM IN THICK	10,295,612
√	4412134050	PLYWOOD PANELS W/ AT LEAST 1 OUTER PLY OF SPECIAL TROPICAL WOOD, NOT/OR SURFACE COVERED W/ CLEAR MATERIAL, <=3.6MM THICK, 1.2M WIDE, 2.2M LONG NESOI	10,824,906
√	4412134060	PLYWOOD WITH AT LEAST 1 OUTER PLY OF SPECIAL TROPICAL WOOD, LESS THAN 6MM THICK, NOT SURFACE COVERED, NESOI	359,080,849
√	4412134070	PLYWOOD WITH AT LEAST 1 PLY OF SPECIAL TROPICAL WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, NOT OVER 6MM THICK, SURFACE COVERED WITH CLEAR MAT'L, NESOI	95,002,615
√	4412135030	PLYWOOD WITH A FACE PLY OF SEN, AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SOLEY SHEETS OF WOOD, NOT/OR SURFACE COVERED CLEAR MAT'L, NOT OVER 6MM THICK	0
√	4412135050	PLYWOOD PANELS WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, NOT/OR SURFACE COVERED WITH CLEAR MAT'L, NOT OVER 3.6MM THICK, 1.2M WIDE, 2.2M LONG NESOI	0
√	4412135060	PLYWOOD WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, NOT OVER 6MM THICK, NOT SURFACE COVERED, NESOI	0
√	4412135070	PLYWOOD WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, NOT OVER 6MM THICK, SURFACE COVERED WITH CLEAR MAT'L, NESOI	0
√	4412135130	PLYWOOD WITH A FACE PLY OF SEN, AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SOLEY SHEETS OF WOOD, NOT/OR SURFACE COVERED CLEAR MAT'L, NOT OVER 6MM THICK	37,636
√	4412135150	PLYWOOD PANELS WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, NOT/OR SURFACE COVERED WITH CLEAR MAT'L, NOT OVER 3.6MM THICK, 1.2M WIDE, 2.2M LONG NESOI	5,506
√	4412135160	PLYWOOD WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, NOT OVER 6MM THICK, NOT SURFACE COVERED, NESOI	10,699,291

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD PLYWOOD (con't)	
√	4412135170	PLYWOOD WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, NOT OVER 6MM THICK, SURFACE COVERED WITH CLEAR MAT'L, NESOI	16,139,383
√	4412135500	PLYWOOD WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, EACH PLY NOT EXCEEDING 6 MM IN THICKNESS, NESOI	0
√	4412136000	PLYWOOD WITH AT LEAST ONE OUTER PLY OF SPECIAL TROPICAL WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, NOT EXCEEDING 6 MM IN THICKNESS, NESOI	16,573,319
	4412139000	PLYWOOD CONSISTING SOLELY OF SHEETS OF WOOD, EACH PLY NOT EXCEEDING 6 MM IN THICKNESS, NESOI	0
	4412139100	PLYWOOD CONSISTING SOLELY OF SHEETS OF WOOD, EACH PLY NOT EXCEEDING 6 MM IN THICKNESS, NESOI	7,614,535
	4412140520	PLYWD FACE PLY BIRCH AT LEAST ONE OUTER PLY HARDWD, SOLELY SHEETS OF WOOD, NOT/OR SURFACE COVERED CLEAR MAT'L NOT OVER 3.6MM THICK/1.2M WIDE/2.2M LONG	22,633,829
	4412140540	PLYWOOD, FACE PLY OF BIRCH, AT LEAST ONE OUTER PLY OF HARDWOOD, SOLELY OF SHEETS OF WOOD, NOT SURFACE COVERED	356,291,437
	4412140560	PLYWOOD, FACE PLY OF BIRCH, AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, NOT/OR SURFACE COVER CLEAR MAT'L NESOI	44,496,374
√	4412142510	PLYWOOD, FACE PLY OF SPANISH CEDAR, AT LEAST ONE OUTER PLY OF HARDWOOD, SOLELY OF SHEETS OF WOOD, NOT/OR SURFACE COVERED WITH A CLEAR MATERIAL	2,432,174
	4412142520	PLYWOOD, FACE PLY OF WALNUT, AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, SOLELY OF SHEETS OF WOOD, NOT/OR SURFACE COVERED WITH A CLEAR MATERIAL	15,003,508
	4412143030	PLYWOOD, FACE PLY OF SEN, AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, SOLELY OF SHEETS OF WOOD, NOT/OR SURFACE COVERED WITH A CLEAR MATERIAL	0
√	4412143040	PLYWOOD, FACE PLY OF MAHOGANY, AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, SOLELY OF SHEETS OF WOOD, NOT/OR SURFACE COVERED WITH A CLEAR MATERIAL	0
	4412143050	PLYWOOD PANELS AT LEAST ONE OUTER PLY OF HARDWOOD, SHEETS OF WOOD ONLY, NOT/OR SURFACE COVERED CLEAR MAT'L, NOT OVER 3.6MM THICK, 1.2M WIDE, 2.2M LONG	0
	4412143060	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, CONSISTING SOLELY OF SHEETS OF WOOD NOT OVER 6 MM THICK, NOT SURFACE COVERED, NESOI	0
	4412143070	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, CONSISTING SOLELY OF SHEETS OF WOOD NOT OVER 6MM THICK, SURFACE COVERED CLEAR MAT'L NESOI	0
	4412143130	PLYWOOD, FACE PLY OF SEN, AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, SOLELY OF SHEETS OF WOOD, NOT/OR SURFACE COVERED WITH A CLEAR MATERIAL	996,687

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD PLYWOOD (con't)	
√	4412143140	PLYWOOD, FACE PLY OF MAHOGANY, AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, SOLELY OF SHEETS OF WOOD, NOT/OR SURFACE COVERED WITH A CLEAR MATERIAL	2,579,252
	4412143150	PLYWOOD PANELS AT LEAST ONE OUTER PLY OF HARDWOOD, SHEETS OF WOOD ONLY, NOT/OR SURFACE COVERED CLEAR MAT'L, NOT OVER 3.6MM THICK, 1.2M WIDE, 2.2M LONG	5,368,421
	4412143160	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, CONSISTING SOLELY OF SHEETS OF WOOD NOT OVER 6 MM THICK, NOT SURFACE COVERED, NESOI	221,199,773
	4412143170	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, CONSISTING SOLELY OF SHEETS OF WOOD NOT OVER 6MM THICK, SURFACE COVERED CLEAR MAT'L NESOI	214,823,359
	4412145500	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, EACH PLY NOT EXCEEDING 6 MM IN THICKNESS, NESOI	0
	4412145600	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, CONSISTING SOLELY OF SHEETS OF WOOD, EACH PLY NOT EXCEEDING 6 MM IN THICKNESS, NESOI	46,446,383
√	4412220500	VENEERED PANELS AND SIMILAR LAMINATED WOOD CONTAINING AT LEAST ONE PLY OF TROPICAL WOOD AND AT LEAST ONE LAYTER OF PARTICLE BOARD	0
√	4412220600	VENEERED PANELS AND SIMILAR LAMINATED WOOD CONTAINING AT LEAST ONE PLY OF NONCONIFEROUS WOOD, AT LEAST LAYER OF PARTICLE BOARD, ONE PLY TROPICAL WOOD	794,258
√	4412221020	PLYWOOD WITH A FACE PLY OF BIRCH, WITH AT LEAST ONE PLY OF TROPICAL WOOD, NOT OVER 3.6MM THICK, 1.2 M WIDE, 2.2M LONG NOT/OR SURFACE COVERD CLEAR MATL	1,174,473
√	4412221030	PLYWOOD WITH A FACE PLY OF BIRCH, WITH AT LEAST ONE PLY OF TROPICAL WOOD, OVER 3.6MM THINK 1.2MM WIDE AND 2.2MM LONG, NOT SERFACE COVERED	2,583,806
√	4412221040	PLYWOOD WITH A FACE PLY OF BIRCH, WITH AT LEAST ONE PLY OF TROPICAL WOOD, OVER 3.6MM THINK 1.2MM WIDE AND 2.2MM LONG, NESOI	3,329,043
√	4412223010	PLYWOOD WITH A FACE PLY OF SPANISH CEDAR, WITH AT LEAST ONE PLY OF TROPICAL WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	0
√	4412223020	PLYWOOD WITH A FACE PLY OF WALNUT, WITH AT LEAST ONE PLY OF TROPICAL WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR OR TRANSPARENT MATERIAL	0
√	4412223030	PLYWOOD WITH A FACE PLY OF SEN, WITH AT LEAST ONE PLY OF TROPICAL WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR OR TRANSPARENT MATERIAL	0
√	4412223040	PLYWOOD WITH A FACE PLY OF MAHOGANY, WITH AT LEAST ONE PLY OF TROPICAL WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	0
√	4412223050	PLYWOOD WITH AT LEAST ONE PLY OF TROPICL WOOD, PANELS NOT EXCEEDING 3.6MM THICK, 1.2M WIDE, 2.2MM LONG, NOT/OR SURFACE COVERED WITH A CLEAR MATERIAL	0

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD PLYWOOD (con't)	
√	4412223060	PLYWOOD WITH AT LEAST ONER PLY OF TROPICAL WOOD, OVER 3.6MM THICK 1.2MM WIDE AND 2.2MM LONG, NOT SURFACE COVERED, NESOI	0
√	4412223070	PLYWOOD WITH AT LEAST ONE PLY OF TROPICAL WOOD SPECIFIED IN SUBHEADING NOTE 1 TO THIS CHAPTER, NESOI	0
√	4412223110	PLYWOOD WITH A FACE PLY OF SPANISH CEDAR, WITH AT LEAST ONE PLY OF TROPICAL WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	0
√	4412223120	PLYWOOD WITH A FACE PLY OF WALNUT, WITH AT LEAST ONE PLY OF TROPICAL WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR OR TRANSPARENT MATERIAL	131,782
√	4412223130	PLYWOOD WITH A FACE PLY OF SEN, WITH AT LEAST ONE PLY OF TROPICAL WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR OR TRANSPARENT MATERIAL	86,460
√	4412223140	PLYWOOD WITH A FACE PLY OF MAHOGANY, WITH AT LEAST ONE PLY OF TROPICAL WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	548,292
√	4412223150	PLYWOOD WITH AT LEAST ONE PLY OF TROPICL WOOD, PANELS NOT EXCEEDING 3.6MM THICK, 1.2M WIDE, 2.2MM LONG, NOT/OR SURFACE COVERED WITH A CLEAR MATERIAL	2,178,710
√	4412223160	PLYWOOD WITH AT LEAST ONER PLY OF TROPICAL WOOD, OVER 3.6MM THICK 1.2MM WIDE AND 2.2MM LONG, NOT SURFACE COVERED, NESOI	4,690,151
√	4412223170	PLYWOOD WITH AT LEAST ONE PLY OF TROPICAL WOOD SPECIFIED IN SUBHEADING NOTE 1 TO THIS CHAPTER, NESOI	4,023,846
√	4412224000	PLYWOOD WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SURFACE IF COVERED, NESOI	0
√	4412224100	PLYWOOD WITH AT LEAST ONE OUTER PLY OF TROPICAL WOOD, SURFACE IF COVERED, NESOI	4,159,550
√	4412225000	VENEERED PANELS AND SIMILAR LAMINATED WOOD WITH AT LEAST ONE PLY OF TROPICAL WOOD, NESOI	0
√	4412225100	VENEERED PANELS AND SIMILAR LAMINATED WOOD WITH AT LEAST ONE PLY OF TROPICAL WOOD, NESOI	32,327,823
	4412291520	PLYWOOD WITH A FACE PLY OF BIRCH, WITH AT LEAST ONE OUTER PLY OF HARDWOOD, NOT OVER 3.6MM THICK, 1.2M WIDE, 2.2M LONG NOT/OR SURFACE COVERD CLEAR MATL	2,017,744
	4412291530	PLYWOOD WITH A FACE PLY OF BIRCH, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, OVER 3.6MM THICK 1.2MM WIDE AND 2.2MM LONG, NOT SURFACE COVERED	10,585,456
	4412291540	PLYWOOD WITH A FACE PLY OF BIRCH, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, OVER 3.6MM THINK 1.2MM WIDE and 2.2MM LONG, SURFACED COVERED, NESOI	13,518,799
	4412293510	PLYWOOD WITH A FACE PLY OF SPANISH CEDAR, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MAT'L	0

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD PLYWOOD (con't)	
	4412293520	PLYWOOD WITH A FACE PLY OF WALNUT, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	0
	4412293530	PLYWOOD WITH A FACE PLY OF SEN, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	0
√	4412293540	PLYWOOD WITH A FACE PLY OF MAHOGANY, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	0
	4412293550	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, PANELS NOT OVER 3.6MM THICK, 1.2M WIDE, 2.2M LONG, NOT/OR SURFACE COVERED CLEAR MATERIAL	0
	4412293560	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, OVER 3.6MM THICK 1.2MM WIDE AND 2.2MM LONG, NOT SURFACE COVERED, NESOI	0
	4412293570	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NESOI	0
√	4412293610	PLYWOOD WITH A FACE PLY OF SPANISH CEDAR, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MAT'L	103,283
	4412293620	PLYWOOD WITH A FACE PLY OF WALNUT, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	6,210,566
	4412293630	PLYWOOD WITH A FACE PLY OF SEN, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	0
√	4412293640	PLYWOOD WITH A FACE PLY OF MAHOGANY, WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NOT SURFACE COVERED OR SURFACE COVERED WITH A CLEAR MATERIAL	422,315
	4412293650	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, PANELS NOT OVER 3.6MM THICK, 1.2M WIDE, 2.2M LONG, NOT/OR SURFACE COVERED CLEAR MATERIAL	29,059,921
	4412293660	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, OVER 3.6MM THICK 1.2MM WIDE AND 2.2MM LONG, NOT SURFACE COVERED, NESOI	15,265,717
	4412293670	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NESOI	86,736,051
	4412294500	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, SURFACE IS COVERED, NESOI	0
	4412294600	PLYWOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, SURFACE IS COVERED, NESOI	9,213,847
	4412295500	VENEERED PANELS AND SIMILAR LAMINATED WOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NESOI	0
	4412295600	VENEERED PANELS AND SIMILAR LAMINATED WOOD WITH AT LEAST ONE OUTER PLY OF NONCONIFEROUS WOOD, NESOI	202,251,797

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD VENEER	
√	4408310000	VENEER SHEETS and SHEETS FOR PLYWOOD OF DARK RED MERANTI, LIGHT RED MERANTI and MERANTI BAKAU WOOD SAWN LENGWIE, SLICED OR PEELED, THICKNESS NOT OVER 6MM	0
√	4408310100	VENEER SHEETS and SHEETS FOR PLYWOOD OF DARK RED MERANTI, LIGHT RED MERANTI and MERANTI BAKAU WOOD SAWN LENGWIE, SLICED OR PEELED, THICKNESS NOT OVER 6MM	456,634
√	4408390000	VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT EXCEEDING 6 MM, OF TROPICAL WOODS, SEE NOTE 1	0
√	4408390100	VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT EXCEEDING 6 MM, OF TROPICAL WOODS, SEE NOTE 1	17,714,420
√	4408390110	TROP WD SHEETS SPLICE/END-JOINTD VENEER ETC NESOI	3,572,800
√	4408390190	TROP. WD SHEETS FOR VENEER ETC. LT=6MM THICK NESOI	17,817,427
	4408900020	BIRCH VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT EXCEEDING 6 MM, NOT REINFORCED OR BACKED	0
	4408900030	CHERRY VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED OR BACKED	0
	4408900040	MAPLE VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT EXCEEDING 6 MM, NOT REINFORCED OR BACKED	0
	4408900050	RED OAK VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT EXCEEDING 6 MM, NOT REINFORCED OR BACKED	0
	4408900060	OAK, EXCEPT RED, VENEER SHEETS, SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED OR BACKED	0
	4408900065	ASH VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED OR BACKED D	0
	4408900070	WALNUT VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED OR BACKED	0
	4408900080	VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED, NONCONIFEROUS, NESOI	0
	4408900082	BIRCH (BETULA SPP.) VENEER SHEETS and SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	0
	4408900084	CHERRY (PRUNUS SPP.) VENEER SHEETS and SHEETS FOR PLYWOOD and OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	0
	4408900086	MAPLE (ACER SPP.) VENEER SHEETS and SHEETS FOR PLYWOOD and OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	0

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD VENEER (con't)	
	4408900088	RED OAK VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	0
	4408900092	OTHER OAK NESOI VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	0
	4408900094	ASH (FRAXINUS SPP.) VENEER SHEETS and SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	0
	4408900096	WALNUT (JUGLANS SPP.) VENEER SHEETS and SHEETS FOR PLYWOOD and OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	0
	4408900098	VENEER SHEETS and SHEETS FOR PLYWOOD and OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED, NONCONIFEROUS NESOI	0
	4408900105	ASH SHEETS SPLICE/END-JOINTD VENEER ETC LT=6MM THK	679,828
	4408900110	BIRCH SHEET SPLICE/END-JOINT VENEER ETC LT=6MM THK	11,199,149
	4408900115	CHERRY SHEET SPLICE/ENDJOINT VENEER ETC LT=6MM THK	10,817,574
	4408900120	BIRCH VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT EXCEEDING 6 MM, NOT REINFORCED OR BACKED	20,292,151
	4408900121	MAPLE SHEET SPLICE/END-JOINT VENEER ETC LT=6MM THK	19,351,107
	4408900130	CHERRY VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED OR BACKED	19,829,908
	4408900131	RD OAK SHEET SPLICE/ENDJOINT VENEER ETC LT=6MM THK	11,902,515
	4408900137	OAK SHEET SPLCE/ENDJNT VENEER ETC LT=6MM THK NESOI	2,264,586
	4408900140	MAPLE VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT EXCEEDING 6 MM, NOT REINFORCED OR BACKED	22,971,144
	4408900145	WALNUT SHEET SPLICE/ENDJOINT VENEER ETC LT=6MM THK	1,328,356
	4408900150	RED OAK VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT EXCEEDING 6 MM, NOT REINFORCED OR BACKED	24,559,060
	4408900151	WD SHEET SPLICE/ENDJNT VENEER ETC LT=6MM THK NESOI	24,746,284
	4408900156	ASH WOOD IN SHEETS FOR VENEER ETC LT=6MM THK NESOI	586,933
	4408900160	OAK, EXCEPT RED, VENEER SHEETS, SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED OR BACKED	1,884,433
	4408900161	BIRCH WOOD SHEETS FOR VENEER ETC LT=6MM THK NESOI	1,141,317

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD VENEER (con't)	
	4408900165	ASH VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED OR BACKED D	1,052,481
	4408900166	CHERRY WOOD SHEETS FOR VENEER ETC LT=6MM THK NESOI	5,073,990
	4408900170	WALNUT VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED OR BACKED	2,841,369
	4408900171	MAPLE WOOD SHEETS FOR VENEER ETC LT=6MM THK NESOI	2,523,295
	4408900176	RD OAK WOOD SHEETS FOR VENEER ETC LT=6MM THK NESOI	3,331,935
	4408900180	VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, NOT REINFORCED, NONCONIFEROUS, NESOI	43,269,381
	4408900181	OAK WOOD SHEETS FOR VENEER ETC LT=6MM THK NESOI	5,669,736
	4408900182	BIRCH (BETULA SPP.) VENEER SHEETS and SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	507,096
	4408900184	CHERRY (PRUNUS SPP.) VENEER SHEETS and SHEETS FOR PLYWOOD and OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	3,034,108
	4408900187	WALNUT WOOD SHEETS FOR VENEER ETC LT=6MM THK NESOI	2,821,815
	4408900192	OTHER OAK NESOI VENEER SHEETS AND SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	894,994
	4408900194	ASH (FRAXINUS SPP.) VENEER SHEETS and SHEETS FOR PLYWOOD AND OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	307,025
	4408900195	N-CONF WOOD SHEETS FOR VENEER ETC LT=6MM THK NESOI	23,065,890
	4408900196	WALNUT (JUGLANS SPP.) VENEER SHEETS and SHEETS FOR PLYWOOD and OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED	439,245
	4408900198	VENEER SHEETS and SHEETS FOR PLYWOOD and OTHER WOOD SAWN LENGTHWISE, SLICED OR PEELED, THICKNESS NOT OVER 6 MM, REINFORCED OR BACKED, NONCONIFEROUS NESOI	11,359,673
		HARDWOOD MOULDING	
	4409204000	STANDARD WOOD MOLDINGS, NONCONIFEROUS	119,557,754
	4409205000	WOOD MOLDINGS, NESOI, NONCONIFEROUS	72,364,118

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		HARDWOOD FLOORING	
	4409202530	MAPLE (ACER SPP.) WOOD FLOORING (INCLUDES STRIPS AND FRIEZES FOR PARQUET FLOORING, NOT ASSEMBLED)	6,462,508
	4409202550	BIRCH (BETULA SPP.) AND BEECH (FAGUS SPP.) WOOD FLOORING (INCLUDES STRIPS AND FRIEZES FOR PARQUET FLOORING, NOT ASSEMBLED)	8,139,636
	4409202560	WOOD FLOORING NESOI (INCLUDING STRIPS AND FRIEZES FOR PARQUET FLOORING NOT ASSEMBLED), NONCONIFEROUS	206,689,681
	4418300000	PARQUET PANELS, OF WOOD	126,113,511
		LAMINATE WOOD FLOORING	
	4411194000	FIBERBOARD OF WOOD OR OTHER LIGNEOUS MATERIALS, OF A DENSITY EXCEEDING 0.8G/CM3, MECHANICALLY WORKED OR SURFACED COVERED, NESOI	684,407,839
		BUILDERS JOINERY	
	4418100000	WINDOWS, FRENCH-WINDOWS AND THEIR FRAMES, OF WOOD	189,027,853
	4418204000	FRENCH DOORS, OF WOOD	71,868,034
	4418208030	FLUSH DOORS, OF WOOD	125,490,728
	4418208060	DOORS AND THEIR FRAMES AND THRESHOLDS, OF WOOD, NESOI	576,531,586
	4418300000	PARQUET PANELS, OF WOOD	126,113,511
	4418400000	FORMWORK (SHUTTERING) FOR CONCRETE CONSTRUCTIONAL WORK, OF WOOD	5,036,755
	4418500010	WESTERN RED CEDAR SHINGLES	95,305,225
	4418500030	SHINGLES OF WOOD, NESOI	75,719,476
	4418500050	SHAKES OF WOOD	100,897,414
	4418902000	EDGE-GLUED LUMBER	19,592,083
	4418904010	BEAMS AND ARCHES, LAMINATED WOOD	0
	4418904020	ROOF TRUSSES	0
	4418904040	FABRICATED STRUCTURAL WOOD MEMBERS, NESOI	0
	4418904050	PREFABRICATED PARTITIONS AND PANELS FOR BUILDINGS OF WOOD	0
	4418904090	BUILDERS JOINERY AND CARPENTRY OF WOOD, NESOI	0
	4418904510	BEAMS AND ARCHES, LAMINATED WOOD	12,315,727
	4418904520	ROOF TRUSSES	117,954,269
	4418904540	FABRICATED STRUCTURAL WOOD MEMBERS, NESOI	321,574,106
	4418904550	PREFABRICATED PARTITIONS AND PANELS FOR BUILDINGS OF WOOD	54,723,358
	4418904590	BUILDERS JOINERY AND CARPENTRY OF WOOD NESOI	948,451,280

Tropical Wood Specific	HTS Number	Description	2006 Import Value US$
		WOOD FURNITURE and PARTS	
	9401614010	HOUSEHOLD SEATS WITH WOODEN FRAMES, FOR CHAIRS UPHOLSTERED, NESOI	1,103,823,433
	9401614030	SEATS WITH WOODEN FRAMES, FOR CHAIRS UPHOLSTERED, EXCEPT HOUSEHOLD, NESOI	126,402,603
	9401616010	HOUSEHOLD SEATS WITH WOODEN FRAMES, UPHOLSTERED, NESOI	1,494,431,917
	9401616030	SEATS WITH WOODEN FRAMES, UPHOLSTERED, NESOI	79,816,087
	9401692010	HOUSEHOLD SEATS WITH WOODEN FRAMES OF BENT-WOOD, EXCEPT UPHOLSTERED	10,808,132
	9401692030	SEATS WITH WOODEN FRAMES OF BENT-WOOD, EXCEPT UPHOLSTERED	4,647,973
	9401694010	HOUSEHOLD SEATS WITH WOODEN FRAMES FOR CHAIRS OF TEAK, EXC UPHOLSTERED	34,485,139
	9401694030	SEATS WITH WOODEN FRAMES FOR CHAIRS OF TEAK, EXC UPHOLSTERED, NESOI	20,514,438
	9401696010	HOUSEHOLD SEATS WITH WOODEN FRAMES FOR CHAIRS EXCEPT OF TEAK, EXCEPT UPHOLSTERED	554,277,613
	9401696030	SEATS WITH WOODEN FRAMES FOR CHAIRS EXCEPT OF TEAK, EXCEPT UPHOLSTERED	55,059,289
	9401698010	HOUSEHOLD SEATS WITH WOODEN FRAMES EXCEPT UPHOLSTERED, NESOI	162,803,328
	9401698030	SEATS WITH WOODEN FRAMES EXCEPT UPHOLSTERED, NESOI	60,302,865
	9401901500	PARTS OF BENT-WOOD SEATS	4,619,044
	9401902580	SEAT PARTS OF LANE, OSTER,BAMBOO OR SIMIMAR MATERIALS,EXCEPT RATTAN	793,305
	9401904000	SEAT PARTS OF WOOD	149,599,732
	9403304000	BENT-WOOD FURNITURE OF A KIND USED IN OFFICES	4,363,096
	9403308000	WOODEN FURNITURE OF A KIND USED IN OFFICES, NESOI	962,428,921
	9403404000	BENT-WOOD FURNITURE OF A KIND USED IN THE KITCHEN	16,409,678
	9403406000	WOODEN FURNITURE FOR USE IN THE KITCHEN, DESIGNED FOR MOTOR VEHICLE USE	148,622
	9403409040	WOODEN DINING TABLES OF A KIND USED IN THE KITCHEN	86,089,653
	9403409060	CABINETS DESIGNED FOR PERMANENT INSTALLATION OF WOOD OF A KIND USE IN THE KITCHEN	849,589,200
	9403409080	WOODEN FURNITURE OF A KIND USED IN THE KITCHEN, NESOI	191,575,586
	9403504000	BENT-WOOD FURNITURE OF A KIND USED IN THE BEDROOM	7,450,449
	9403506000	WOODEN FURNITURE FOR USE IN THE BEDROOM, DESIGNED FOR MOTOR VEHICLE USE	499,589
	9403509040	WOODEN BEDS OF A KIND USE IN THE BEDROOM	1,058,310,825
	9403509080	WOODEN FURNITURE OF A KIND USED IN THE BEDROOM, NESOI	2,147,436,887
	9403604000	BENT-WOOD FURNITURE, NESOI	21,208,386
	9403608040	WOODEN DINING TABLES FURNITURE, NESOI	509,859,392
	9403608080	WOODEN FURNITURE, NESOI	4,907,798,531
	9403907000	FURNITURE PARTS OF WOOD	1,009,387,161

APPENDIX III
Selected Resources

Architectural Woodwork Institute 46179 Westlake Drive, Suite 120 Potomac Falls, VA 20165 Telephone: 571-323-3636 Fax: 571-323-3630 Website: www.awinet.org	Represents architectural woodworkers, suppliers, and design professionals; publishes and certifies quality standards
Hardwood Plywood and Veneer Association 1825 Michael Faraday Drive Reston, Virginia 20190 Telephone: 703-435-2900 Fax: 435-2537 Website:www.hpva.org	Represents US hardwood plywood, hardwood veneer, and engineered hardwood flooring industries; publishes product standards; promotion; operates testing lab
International Wood Products Association 4214 King Street, West Alexandria, Virginia 22302 Telephone: 703- 820-6696 Fax: 703-820-8550 Website: www.iwpawood.org	Represents importers, manufacturers, transportation companies, port authorities, customs brokers, and overseas producers; promotes imported wood products; publishes product standards
Metafore 1306 NW Hoyt St. Suite 403 Portland, Oregon 97209 Telephone: 503.224.2205 Fax: 503.224.2216 Website: www.metafore.org	Provides research and advisory services to businesses evaluating, selecting and manufacturing environmentally preferable products. Conducts market research on tropical timber products. A link to fact sheets on tropical timber in the US is: http://www.metafore.org/index.php?p=Global_Wood_Initiativeands=278
National Wood Flooring Association 111 Chesterfield Industrial Boulevard Chesterfield, Missouri 63005 Telephone: 636-519-9663 Fax: 636-519-9664 Website: www.woodfloors.org	Represents hardwood flooring industry (manufacturers, distributors, retailers, and installers); provides training and resources
US International Trade Commission 500 E Street, SW, Washington, DC 20436 Telephone: 202-205-2000 http://dataweb.usitc.gov	Federal agency with broad investigative responsibilities on matters of trade; serves as a government resource for trade data and trade policy-related information; administers HTS import codes; USITC DataWeb is an interactive tariff and trade statistics service available free of charge
Wood Moulding and Millwork Producers Association 507 First Street Woodland, CA 95695 Telephone: 800-550-7889 Fax: 530-661-9586 Website: www.wmmpa.com	Represents hardwood and softwood moulding and millwork producers.

APPENDIX IV
Terms of Reference

REVIEW OF THE USA TIMBER MARKET
[ITTO Yokohama Action Plan, Section 3.1, Goal 1, Action 5]
Terms of Reference

The consultant shall:

Compilation and Review of Information

- Collect, analyse and present data on imports, exports, production and consumption of timber identifying trends for tropical hardwoods, softwoods and temperate hardwood in the USA. This analysis should cover industrial roundwood, sawnwood, veneer, plywood, builders joinery, flooring, mouldings, millwork and wood furniture. Any existing studies should be integrated in this analysis.
- Identify the sources of statistical data used in (1) above and provide an assessment of the reliability and timeliness of this data.
- Review information on trends in tropical timber trade in the region in which the USA is located.

Tropical Timber Consumption Analysis

- For the main consumption centers, report on trends in the last 3-5 years in consumption of the products noted in (1) above and identify the consumption trends for tropical hardwood products relative to other timbers and place such trends in a regional context.
- For each of the consumption centres, and for the country as a whole, identify and report on the end-use distribution for each tropical timber product referred to in 1 above.
- Analyse factors affecting competitiveness of tropical timber including identification of the significant products (timber, other materials, etc.) with which tropical timber competes.
- Analyse and report on current import tariffs, product specifications and quality requirements in this timber market and their implications and opportunities for ITTO exporters.
- Identify possible non-tariff barriers in the USA for timber imports and any particular impacts on tropical timber.
- Survey the perceptions/views of the private sector on likely future trends in the tropical timber market of the USA.
- Present preliminary findings/analysis to the ITTO Secretariat at the end of the data collection phase.

Reporting

- Submit a preliminary report of the review to the ITTO Secretariat not later than 1 March 2007.
- Submit the report of the review, including an executive summary and a draft article for the Tropical Forest Update (TFU), not later than 1 April 2007. Where appropriate, take high resolution photographs of the assignment under this SSA and provide 20 or more of these to ITTO, along with data on each photo as per a proforma to be supplied by ITTO for this purpose.
- Present the report at the Fortieth Session of the Committee on Economic Information and Market Intelligence scheduled on 8-12 May 2007.

Appendix V
Pictures

Px (a) Residential – Jatobá engineered wood floor with maple dining table (*courtesy of Bill Altman*)

Px (b) Residential – Teak wood floor

Px (c) Typical example of tropical wood furniture made in China and sold at “Big-Box” retail store

Px (d) Solid wood chair of tropical wood species made in China and sold at “Big-Box” retail store

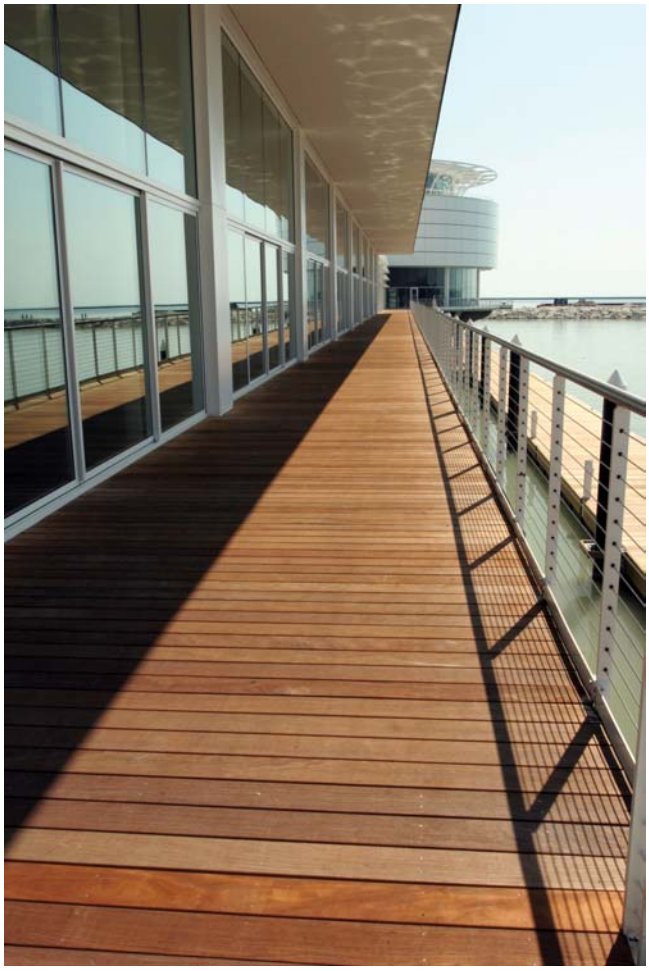
Px (e) Stack of sapelle awaiting kiln-drying at importer's yard. To be used in lieu of genuine mahogany for millwork, flooring and/or architectural projects

Px (f) Typical distribution yard of imported wood species to be kiln-dried

Px (g) Sorting line at distribution yard. Imported lumber is often custom graded for specific customers and/or end uses.

Px (h) Handcrafted table using assortment of tropical and domestic sliced veneers.

Px (i) Cross-section of kitchen cabinet utilizing imported tropical plywood (Courtesy of IWPA)



Px (j) Ipé decking on commercial project (Courtesy of IWPA)

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