



CHINA AND FOREST TRADE IN THE ASIA-PACIFIC REGION:

IMPLICATIONS FOR FORESTS AND LIVELIHOODS

中国与亚太地区国家林产品贸易研究

MEETING CHINA'S DEMAND FOR FOREST PRODUCTS:

AN OVERVIEW OF IMPORT TRENDS, PORTS OF
ENTRY, AND SUPPLYING COUNTRIES, WITH
EMPHASIS ON THE ASIA-PACIFIC REGION

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COLLABORATING INSTITUTIONS

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PREFACE

It is now well recognized that China has quickly become one of the world's largest importers of wood products and that this growing demand is linked to increased harvesting and illegal logging and trade in many producer countries. These trends are undoubtedly having important impacts on forests and the livelihoods of forest peoples around the world. NGO and government actors are eager to better understand and address the problems caused by this trade, and where possible, transform this growing demand into incentives for sustainable forest management and improved forest livelihoods.

Unfortunately, detailed information regarding import trends for different products, the gateways and the suppliers, and the impacts and implications of these trends – both in China and in the key supplying countries – has been limited. This paper is an attempt to begin to address this gap in information. It is a brief overview of an in-depth analysis of Chinese imports entitled “China's Forest Product Imports, 1997 – 2002: Analysis of Customs Data with Emphasis on Asia-Pacific Supplying Countries” published separately by Forest Trends, the Center for Chinese Agricultural Policy (CCAP), and the Center for International Forestry Research (CIFOR). The customs data upon which this analysis is based is available in a separate report entitled “China's Forest Product Imports, 1997 – 2002: Trade Data by Product, Country of Origin, and Port of Entry.”

These papers are the first in a series of studies being conducted by Forest Trends, CIFOR and their partners in the Asia-Pacific region on Chinese and regional trade issues. Additional analyses underway focus on the structure of the export-oriented forest industry in key Asia-Pacific producer countries; projections of China's demand for wood products and domestic supply; the livelihood implications of China's growing demand; policy issues and constraints to community production in China; and strategic opportunities for industry, policymakers and NGOs to address problems related to this trade and advance forest conservation and forest livelihoods in China and across the Asia-Pacific region.

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INTRODUCTION

China's flourishing economy, coupled with policy constraints limiting domestic forest production, has resulted in skyrocketing forest product imports over the last several years. In a decade, China moved from a ranking of seventh up to second among all nations in total value of forest product imports and also is now the top importing country worldwide of industrial round wood.¹

This growing import demand is having major impacts on forests and forest peoples in producer countries and is stimulating increases in illegal logging and deforestation. The link between illegal logging and trade, in particular, is a recognized problem that has been addressed in a number of recent studies. These works have drawn evidence from both discrepancies in trade statistics and on-the-ground investigations.² Expectations for China's continued strong economic growth suggest that the trends will continue, if not accelerate, in coming years. Full diagnosis of the impacts, as well as projections of import trends and identification of opportunities for low-income producers to possibly benefit from this trade, require a much clearer picture of the flows of forest product imports into China than has been available to date.

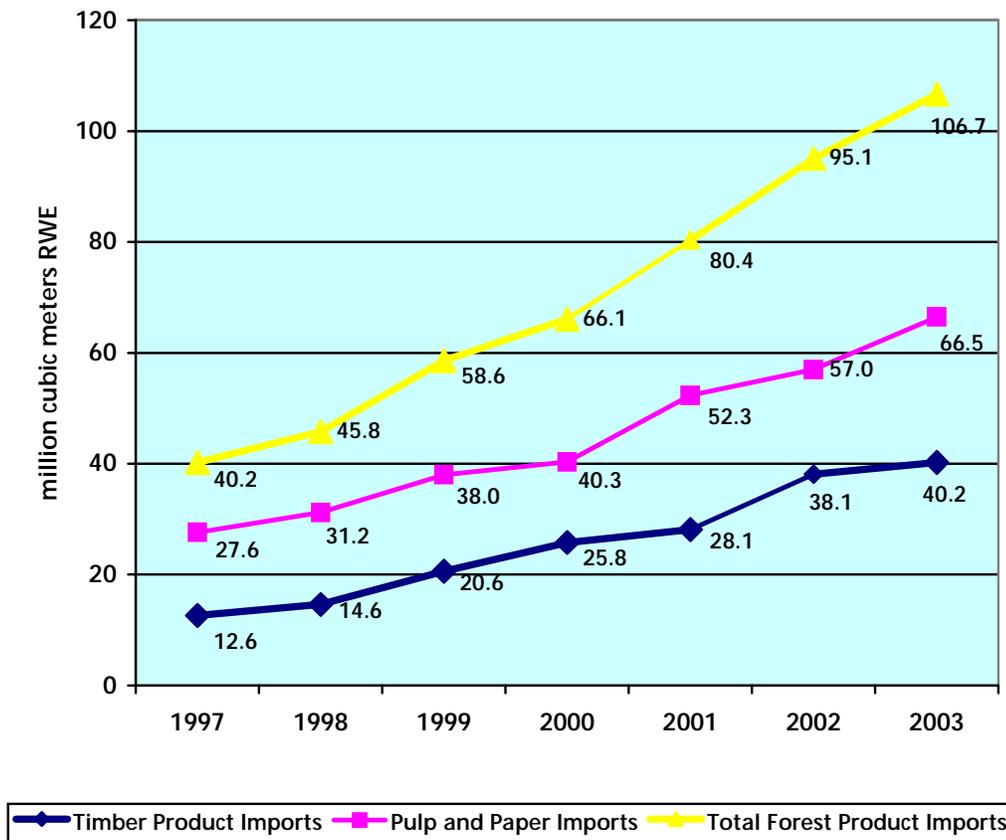
This paper provides a brief overview of forest product import trends, by both product segment and port of entry, as well as for each of the main Asia-Pacific producer countries supplying China. The paper is based on a more detailed analysis published separately and builds on recent work by WWF and others.³ The paper first describes the overall import trends, and then describes trends by product segment. It next addresses trends in ports of entry and identifies major supplier countries. The paper then describes the roles of eight leading Asia-Pacific producer countries currently involved in the China trade: Cambodia, Indonesia, Laos, Malaysia, Myanmar, Papua New Guinea, Russia, and Thailand. These countries are home to some several million indigenous and other forest people as well as high concentrations of globally significant biodiversity: 13 of 25 global biodiversity hotspots are located in the region.⁴ Overviews of the trends and status of each producer country are presented in Annex 1, with a map of the region provided in Annex 3. A summary of leading ports of entry into China by product type is presented in Annex 2. A map showing the location of these ports is provided in Annex 4.

TRENDS IN OVERALL GROWTH AND ITS COMPOSITION

China's forest product imports more than doubled in round wood equivalent (RWE) volume between 1997 to 2002, rising from 40.2 million to 95.1 million cubic meters (see Table 1).⁵ In value, overall imports in the sector increased by 75 percent during the same period, rising from US\$6.4 billion to \$11.2 billion. While detailed analysis for this study has focused on 1997 – 2002, preliminary data from 2003 show that the trend has continued with forest product import volume rising to 106.7 million cubic meters RWE and value rising to US\$12.9 billion.

- Timber product imports tripled in volume and doubled in value between 1997 and 2002, reflecting China's marked expansion of its timber processing industry. This industrial expansion has been driven not only by growing domestic demand for end products, but also by international demand for exports of China's low-cost finished wood products, such as furniture.
- Pulp and paper are responsible for an even larger volume of forest product import growth over the period studied than are timber products. Pulp and paper products currently account for about 60 percent of China's forest product imports by RWE volume. Their strong growth reflects not only a rise in the quantity of paper demanded, but also in quality criteria. That is, as the quality requirements of both China's domestic paper market and her export-oriented sectors rise (e.g. high quality paperboard for packaging), the nation is moving away from a predominantly straw-based pulp and paper industry towards greater use of (often imported) wood-based fibers.⁶

Figure 1: China's Forest Product Imports 1997 - 2003:
Overall Volume and Volumes in Major Categories



The main drivers of these general trends in forest product imports are China's strong economic growth, her low per capita endowment of wood, and policy constraints to domestic production from natural and plantation forests. To a lesser extent, recent reductions in forest product tariffs may play a role in increased imports, including, possibly, a shift from illegal to legal product, as smuggling becomes less attractive.

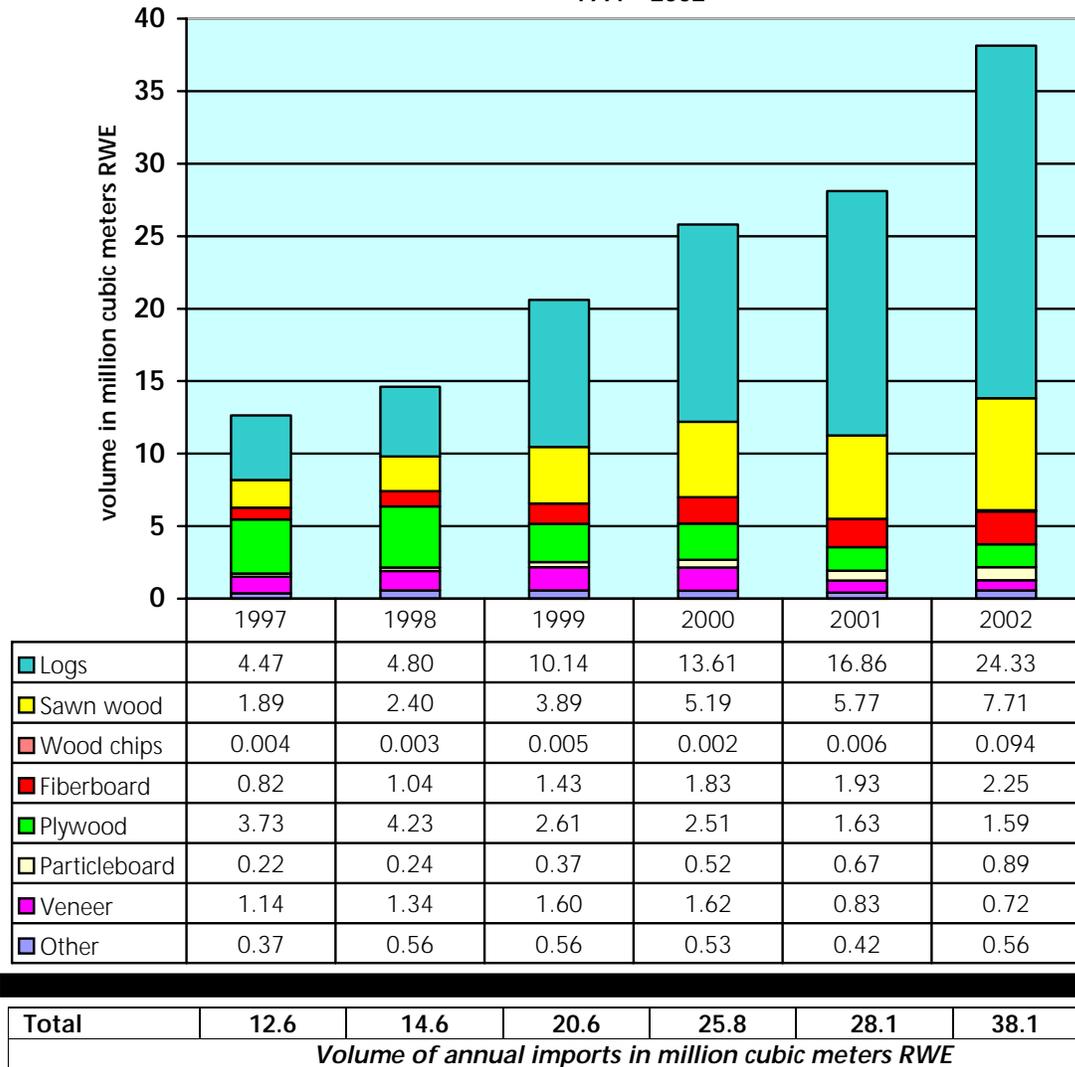
TRENDS BY SEGMENT

TIMBER PRODUCTS

Timber product imports were analyzed according to the following segments: logs (unprocessed), lumber (sawn wood), wood chips, fiberboard, plywood, particleboard, veneer, and a general "other" designation for more minor products (see Figure 2 below).

- Logs, and to a lesser extent lumber, account for the largest portion of the strong timber product import growth occurring between 1997 and 2002. As a result, logs and lumber now make up the bulk of China's timber product imports, with over 24 million m³ of logs and 7.7 million m³ RWE of sawn wood imported in 2002.
- Trends in timber product data reveal the Chinese economy's increasing capture of the value added of natural resources, as imports enter China in a less processed state. While higher value-added imports (plywood, veneer, fiberboard, etc.) made up almost half of China's timber product imports by value in 1997, by 2002 logs and sawn wood constituted 80 percent of total import value. A comparison of plywood to sawn wood imports further illustrates this trend. In 1997, plywood imports were 3.73 million m³ RWE and sawn wood imports were 1.89 million m³ RWE. By 2002, volume of plywood imports had dropped to 1.59 million m³ RWE, reflecting the growth of China's own plywood capacity, while sawn wood import volume had grown to 7.71 million m³ RWE.
- In the log category, softwood logs have dominated growth and now make up 65 percent of log import volume, as compared to only 21 percent in 1997. In fact, from 1997 to 2002, softwood log imports grew 15 times from a base of merely 93,000 m³ to 15.8 million m³. Starting from a much larger base of 3.5 million m³ in 1997, hardwood log imports in comparison grew by only 1.4 times, but were also quite substantial by 2002, reaching 8.5 million m³.
- Within the hardwood log category, tropical hardwood log imports were responsible for over 80 percent of growth. While temperate hardwood log imports grew steadily between 1997 and 2002, more than doubling in volume, tropical hardwood logs made up the majority of hardwood logs throughout, constituting over 75 percent of volume for each of the years studied.⁷

Figure 2: China's Timber Product Imports by Product Type
1997 - 2002

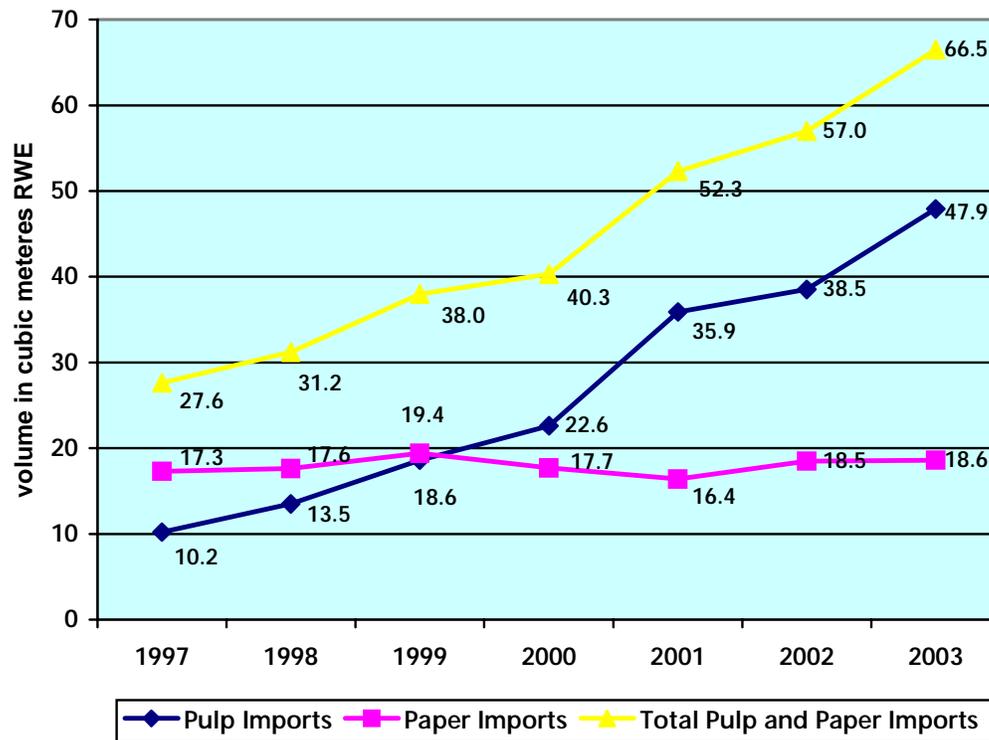


- The bulk of lumber imports are made up of hardwood (78 percent of lumber imports by volume in 2002). Softwood lumber imports, however, showed growth rates similar to those of their hardwood counterparts. Hardwood lumber imports grew from 1.0 million m³ in 1997 to 4.2 million m³ in 2002, with the strongest rises in tropical hardwood lumber, which made up the majority of hardwood lumber imports for each of the years studied. Temperate hardwood lumber, however, played a somewhat more substantial role than its counterpart in the log category, accounting for 32 percent of hardwood lumber growth by volume over the period, and actually exceeded temperate hardwood log imports in RWE volume in 2002. Softwood lumber imports rose from a base of 300,000 m³ in 1997 to 1.2 million m³ in 2002, with growth attributed to a sharp rise in Russian lumber imports.

PULP AND PAPER

As with timber products, trends in pulp and paper imports between 1997 and 2002 show the Chinese economy's increasing capture of value added (see Figure 3 below). Data from 2003 indicates strong continuation of this trend.

Figure 3: Comparison of China's Pulp and Paper Imports
1997 - 2003



- Sharp increases in pulp imports constitute the bulk of growth in the pulp and paper category and have moved the segment from one in which paper has historically dominated imports to one in which pulp imports far exceed those of paper.
- In 1997, China imported 70 percent more paper by RWE volume (17.3 million m³) than pulp (10.2 million m³). Pulp imports tripled in value between 1997 and 2002, with RWE volume jumping by 2.8 times. As a result, by 2002, China imported 38.5 million m³ RWE of pulp as compared to 18.5 million m³ RWE of paper. By 2003, these figures were 47.9 million m³ RWE (pulp) and 18.6 million m³ RWE (paper). The trends correspond with expansion of China's wood-fiber-based domestic paper manufacturing capacity.

TRENDS IN TOP PORTS OF ENTRY OF CHINA'S FOREST PRODUCT IMPORTS

As part of efforts to develop a richer and more informative picture of the growing trade flows of forest products into China, import data was analyzed by major port of entry. The map provided in Annex 3 depicts the location of the main ports covered. It should be noted that a “port” as referred to in this study indicates one of the 42 ports of entry operated by China's General Customs Bureau. Import data for each of these ports of entry actually represents aggregate imports for all ports and gateways in the geographic area under that port of entry's supervision. “Nanjing”, for example, covers all ports in Jiangsu Province. In contrast, there are seven ports of entry in Guangdong Province, each covering a number of entry points. This section first presents port of entry trends for forest products overall and then touches upon port trends by producer country and associated product. The role of key ports in receiving product from specific countries is covered more fully in the individual country analyses of Annex 1. Annex 2, in turn, presents a description of port of entry trends by product.

GENERAL PORT OF ENTRY TRENDS

Leading ports of entry for China's forest products tend to be either ocean ports in areas of China's greatest economic growth and manufacturing capability or inland ports serving border trade with producer countries. In general, there are three major geographic clusters that include the leading ports of entry for most types of forest products. These geographic clusters are:

- 1) the Guangzhou-Shenzhen corridor, located in South China's Guangdong Province and including the ports of Guangzhou, Huangpu (also covering areas near the city of Guangzhou), and Shenzhen (located on the border with Hong Kong);
 - 2) the Shanghai-Jiangsu region, including the ports of Shanghai and Nanjing in eastern China; and
 - 3) the far Northeast border area, including Harbin (the provincial capital of Heilongjiang Province and also the port of entry aggregating customs data for the whole province) and Manzhouli (a border town and railhead in the northeastern part of the Inner Mongolia Autonomous Region).
- The first two of these clusters, representing major ocean port areas, have consistently played an important role in forest product imports over the period studied (1997-2002). They share the common import drivers of strong economic growth, much of China's most prosperous populace, and phenomenal concentrations of manufacturing capacity (e.g. furniture) serving both the domestic and export markets.
 - The third cluster, consisting of the “overland” ports of Harbin and Manzhouli, has emerged to prominence more recently, reflecting the critical role of these ports in sharply

growing imports from the Russian Far East. This cluster is located in a much less prosperous region of China than the first two clusters.

- Among the ports of entry not included in these three clusters, Qingdao (an ocean port in North China’s Shandong Province and the port of entry aggregating customs data for the province as a whole) is probably the most important to note, given that it is a top player in pulp imports. Qingdao’s role in the pulp trade is not surprising, as Shandong Province is known as a major center of China’s papermaking industry. Kunming Port (covering all gateways in Southwest China’s Yunnan Province) is also of note, given its central role in the expanding border trade with Myanmar.

PORT OF ENTRY TRENDS BY PRODUCER COUNTRY AND ASSOCIATED PRODUCT

Table 1 below displays key port of entry results by producer country and associated product. It illustrates the leading role of border ports across product areas for Russia (Harbin and Manzhouli Ports) and Myanmar (Kunming Port). It further shows a mix of the two ocean port clusters (Shanghai-Jiangsu and Guangdong) for imports of other major suppliers, such as Indonesia, Malaysia, and Thailand.

Table 1: Main Ports of Entry by Asia-Pacific Producer Country and Product: 2002

	Softwood Logs	Hardwood Logs	Softwood Lumber	Hardwood Lumber	Plywood	Veneer	Pulp	Paper
Russia	Harbin Manzhouli	Harbin	Manzhouli Hohot	Harbin			Manzhouli	Manzhouli Shenzhen
Indonesia		Nanjing Shenzhen		Shanghai Shenzhen	Shenzhen Shanghai Guangzhou		Nanjing Qingdao	Shenzhen Huangpu Shanghai
Malaysia		Nanjing Guangzhou Shenzhen		Shenzhen Huangpu Shanghai	Huangpu Shenzhen Shanghai	Guangzhou Shanghai		
Thailand				Guangzhou Huangpu Shenzhen			Nanjing Gongbei	Shenzhen
PNG		Nanjing				Shanghai		
Myanmar		Kunming		Kunming				
Cambodia				Nanjing Huangpu Jiangmen	Shanghai Qingdao	Jiangmen Shenzhen		
Laos		Kunming Huangpu Shenzhen		Kunming				

Note: For each country-product pair, the table lists the top one to three ports for 2002, beginning with the top port and stopping after either 70 percent of the volume is accounted for or the third port is listed, whichever comes first. For each country, only the main forest product import categories are covered.

A few additional country-specific results are of note here, with additional information provided in the annexes, and even more detail provided in the full paper. First, Nanjing, China’s leading importer of tropical hardwood logs, handled 86 percent of PNG log imports in 2002. Second, while border trade through Harbin and Manzhouli dominates Russian imports, ocean shipping to Dalian and Nanjing is beginning to play a role in this trade. Similarly, in the case of Myanmar, a

small portion of product is being shipped to Shanghai and other ocean ports. Last, in the pulp trade with Asia-Pacific producers, Nanjing and Qingdao (based in Shandong, a center of China's paper industry) handle the majority of Indonesian pulp, while border port Manzhouli handles the majority of Russian pulp.

TRENDS IN IMPORTS FROM MAJOR SUPPLYING COUNTRIES

Trends in China's major supplying countries are discussed below by product. The role of top players by volume in key product areas is depicted in the chart in Figure 5 and summarized in the table in Figure 6. In general, the China timber product trade is dominated by Asia-Pacific countries, whereas in the case of pulp and paper, countries both within and outside of the region play significant roles.

TRENDS IN TIMBER PRODUCT SUPPLIERS

- Russia, Malaysia, and Indonesia have been the three leading suppliers by volume of timber products to China since 1997. Total imports of timber products from these three countries accounted for over 50 percent of China's total each year between 1997 and 2002. In 2002, China's combined timber product imports from the three totaled approximately 23.6 million m³ RWE valued at \$2.1 billion.
- The rise in Russian imports over the years studied has been sharp; and Russia is now the top timber product supplier by volume to China. In 1997, Russian timber product imports were 970,000 m³ RWE and valued at \$93 million. By 2002, import volume had risen to 15.8 million m³ RWE, with a value of \$1.06 billion.
- New Zealand, Thailand, the US, Gabon, Papua New Guinea, Germany, and Myanmar may be considered a second tier of leading timber product suppliers. Together they exported over 8.8 million m³ RWE or \$1.2 billion worth of timber products to China in 2002.

LOG IMPORTS

- Russia and Malaysia are the two leading suppliers of logs. By 2002, with average annual growth rates of 79 percent from 1997, Russian product dominated log imports, far surpassing in scale imports from any other country. It should be noted that the analysis presented is by volume. A value analysis, giving heavier weighting to hardwoods would diminish, but not eliminate, Russia's lead in the China log trade.
- Reviewing log trends over time, a shift in the top log suppliers between 1997 and 2002 is evident. Gabon, Russia, Malaysia, North Korea, and Cameroon, in order of descending volume, were the top suppliers in 1997, while in 2002, the top players in order of descending volume were Russia, Malaysia, New Zealand, Papua New Guinea, and Gabon.

LUMBER AND PANEL IMPORTS

- Notable lumber suppliers in 2002 include Indonesia, the US, Thailand, Russia, and Malaysia. While Indonesia has ranked in the top five list since 1997, its lumber exports to China have grown rapidly, rising from 19 percent of total volume in 1997 to 26 percent of a much larger base in 2002. The US is China's second largest supplier of lumber, accounting for 11 percent of imports in 2002, while Malaysia has dropped from top supplier in 1997 to the fifth position in the list. Growth in Russian lumber imports (from a very low base) has also been substantial, moving Russia to position four. The Russian government's efforts and policies aimed at encouraging the development of its own wood processing industry may have contributed to this growth.⁸
- In the panel segment, Malaysian imports appear to have suffered the most from reductions in China's plywood and veneer imports, though Indonesian plywood imports have also dropped. Throughout the period studied, Indonesia was China's top plywood supplier, with Malaysia following in second place. Malaysia dominated veneer imports over the six-year period. Veneer imports from Cambodia, the number two supplier, have, like those from Malaysia, dropped in recent years.

Figure 5: Leading Supplying Countries and Regions by Product: Import Volumes from Leading Suppliers by Product Category, 2002

Note: Top Five Suppliers are Shown for Each Product Category

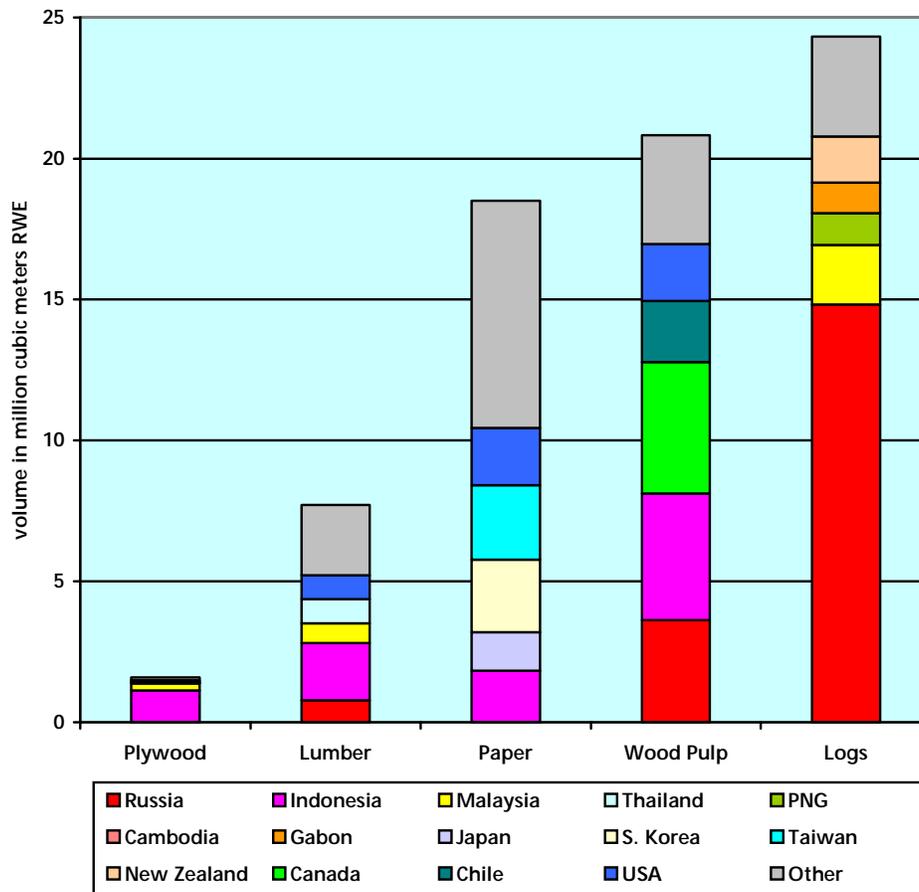


Table 2: Leading Supplying Countries by Product

Note: Listed in order of ranking by volume of 2002 exports to China. Percentages indicate proportion volume of China's total imports in the product category.

Timber Products Overall	Logs	Lumber
1. Russia (41.4%)	1. Russia (60.9%)	1. Indonesia (26.3 %)
2. Malaysia (10.9%)	2. Malaysia (8.7%)	2. US (11.0 %)
3. Indonesia (9.7%)	3. New Zealand (6.7%)	3. Thailand (11.0%)
4. New Zealand (5.8%)	4. PNG (4.6%)	4. Russia (10.2%)
5. Thailand (3.7%)	5. Gabon (4.5%)	5. Malaysia (9.1%)
Plywood	Wood Pulp	Paper
1. Indonesia (71.2%)	1. Canada (22.4%)	1. Taiwan (14.3%)
2. Malaysia (15.6%)	2. Indonesia (21.6 %)	2. S. Korea (13.9%)
3. S. Korea (4.2%)	3. Russia (17.4 %)	3. US (10.9%)
4. Japan (1.9%)	4. Chile (10.4%)	4. Indonesia (9.9%)
5. Cambodia (1.5%)	5. US (9.7%)	5. Japan (7.4%)

TRENDS IN PULP AND PAPER SUPPLIERS

- Suppliers outside of the Asia-Pacific region play a significant role in China's pulp and paper trade. In 2002, for example, Canada was China's top wood pulp supplier; Chile and the US ranked four and five, respectively, for wood pulp; and the US was China's number three paper supplier.⁹ Also of note is Brazil, which made the top five for wood pulp in 2001.
- Indonesia and Russia, from within the Asia-Pacific region, are the other two of the leading five wood pulp suppliers in 2002.
- The greatest absolute growth in wood pulp imports between 1997 and 2002 is found in the cases of Canada, Indonesia (for which imports grew by 2.5 times), and Russia (for which imports grew by 4.2 times).
- The key paper supplying countries or regions during these years are Taiwan (ranked number one in 2002), South Korea, the US, Japan, Indonesia, and Hong Kong (replaced by Indonesia in the top five after 1997).
- Lack of overall growth in paper imports during the period studied is reflected in declining imports from the US. Some of China's top paper suppliers, incidentally, largely process wood fiber grown elsewhere (i.e. South Korea, Taiwan, Japan, and Hong Kong), while others produce their own wood (i.e. the US and Indonesia).

TRENDS IN IMPORTS FROM ASIA-PACIFIC PRODUCING COUNTRIES

The Asia-Pacific countries covered in this report (Cambodia, Indonesia, Laos, Malaysia, Myanmar, Papua New Guinea, Russia, and Thailand) include some of China's leading suppliers,

and the Chinese trade accounts for a large portion of the forest product exports of all of these countries.¹⁰

- In aggregate, forest product imports from Asia-Pacific countries grew at an even greater rate than Chinese forest product imports as a whole, so that the Asia-Pacific countries covered in this study expanded their share of total forest product imports by volume from 30 percent in 1997 to 41 percent in 2002.
- Timber products, in particular, are dominated by Asia-Pacific countries, with the group of eight countries studied accounting for 72 percent of imports in 2002 (up from 64 percent in 1997). The share of these Asia-Pacific countries in log imports grew from 48 percent to 78 percent during the same period. As indicated in Figures 5 and 6 above, the position of leading supplier in each of the main timber product areas was held by one of the Asia-Pacific countries studied: Russia (mostly softwood) and Malaysia (mostly hardwood) held the number one and number two positions in logs, while Indonesia (mostly hardwood), was the top lumber supplier. Indonesia and Malaysia were number one and number two, respectively, in plywood, while Malaysia and Cambodia held the number one and number two positions, respectively, for veneer.
- Finally, despite the influence of non-Asia-Pacific suppliers in pulp and paper, the role of Asia-Pacific countries in this category is still substantial and on the rise. The group of Asia-Pacific countries studied is particularly relevant in the case of wood pulp, with Indonesia and Russia holding the number two and three places in 2002 and with the share in wood pulp imports of the group as a whole rising from 33 to 41 percent over the period studied. For paper, while Asia-Pacific countries were well represented among the top five suppliers in 2002 (e.g. South Korea, Taiwan, and Japan), only fifth-ranked Indonesia among the forest-rich countries studied made this list.

Details from the analysis of the eight Asia-Pacific producer countries studied are provided in Annex 1. Key findings are summarized here by country and in Table 3 below:

- For Russia, phenomenal growth in softwood logs (14 times over the period studied) is the main theme, with other import volumes dwarfed in comparison. Softwood lumber and pulp and paper (especially pulp) imports from Russia, however, are also growing.
- For Indonesia, expansion of hardwood lumber (up 4.7 times over the period studied) and pulp supplied to China are the main themes. Indonesian plywood, log, and paper imports had all dropped by 2002 from peaks achieved during the intermediary years of the period studied.
- Malaysia's imports exhibited much less robust growth than China's forest product imports as a whole. As would be expected, then, Malaysia has dropped from its position as number one timber product supplier in 1997 and, by 2002, while ranked number two, had been far surpassed by Russia in volume. Hardwood logs and lumber made up the greatest proportion of Malaysia's imports to China by 2002, with reductions in plywood and veneer volumes occurring over the period studied.

- For Thailand, which ranked fourth in provision of timber products to China in 2002, lumber (predominantly hardwood) was the most significant import. Paper had accounted for over half of Thai imports in 1999, but volumes have since dropped; and pulp imports, while growing, are still less than those of paper.
- Papua New Guinea's forest product imports to China are predominately hardwood logs. Expansion of this trade was substantial during the period studied, growing by five times; and, in 2002, PNG-supplied product accounted for 13.2 percent of China's hardwood log imports.
- Dominated by timber products, Myanmar's forest product imports to China are mainly logs (64 percent of RWE volume in 2002) and lumber (34 percent of RWE volume in 2002), both of which are mostly hardwood. Myanmar's official timber product imports to China grew by three times over the period studied, with log imports appearing to level off after 2000 and lumber imports continuing to grow.
- Cambodia is a minor supplier of forest products to China; and imports, predominantly timber products, dropped after 2000. Veneer is the main product supplied by Cambodia, followed by plywood

Table 3: Summary of Asia-Pacific Supplying Countries Studied¹¹

Country	2002 Forest Product Volume (million m ³ RWE)	Main Products in 2002	Trends in Main Products over Period Studied
Russia	20.24	Softwood logs; also lumber, pulp	Logs dominate, strong growth in all
Indonesia	10.07	Hardwood lumber, pulp	Lumber, pulp up/ paper, plywood down
Malaysia	4.30	Hardwood logs and lumber	Relatively slow growth/plywood, veneer down
Thailand	2.48	Hardwood lumber	Lumber up/paper down, pulp small but growing
PNG	1.15	Hardwood logs	Logs up by five times
Myanmar	0.948	Hardwood logs and lumber	Timber products (official) up three times
Cambodia	0.129	Veneer, plywood	Veneer dropping
Laos	0.019	Hardwood logs and lumber	Gradual rise of both logs and lumber

- In terms of official customs data, Laos is the least significant forest product supplier to China of those studied. Pulp and paper imports from Laos were negligible during the period studied; and hardwood logs (57 percent of imports by RWE volume in 2002) and lumber were the main timber products imported from the small nation.

CONCLUSIONS

The foregoing summary of import trends confirms high growth rates of China's forest product imports between 1997 and 2002 in both timber products and pulp and paper. Logs, lumber, and pulp are the most rapidly growing import segments, as China moves towards handling more of the processing of forest products itself. Forest-rich countries in the Asia-Pacific region are playing an increasingly important role in supplying China's expanding demand. Finally, ocean ports in the Shanghai-Jiangsu and South China regions have maintained their leading role in the forest product trade. These have been joined more recently, and in some cases surpassed, by inland ports in Northeast China, which have been catapulted to leading roles by the booming border trade with Russia.

China's increasing dependence on forest product imports and anticipated future economic growth mean that Chinese demand is likely to continue to have dramatic social, environmental, and economic implications for forests and forest peoples, particularly in the Asia-Pacific region. These trends will continue to challenge the efforts of NGOs and some governments to address illegal logging and trade, and establish sound institutions for governing forests in supplying countries. That being said, it is not known how long these trends will continue, what products will be in demand in what volumes over time, where this wood is likely to come from, what the particular implications are for each supplier country, and what the longer-term impacts of this trade will be. Answering these questions and crafting strategic interventions to address the problems of unsustainable forestry and illegal trade --- transforming this demand into positive incentives for forest stewardship -- will require more information and much more concerted action.

ANNEX 1: PROFILES OF ASIA-PACIFIC PRODUCER COUNTRIES

This annex provides summaries of trends in forest product imports to China from each of the eight Asia-Pacific countries studied. These countries, covered in order of decreasing forest product imports, are: Russia, Indonesia, Malaysia, Thailand, Papua New Guinea, Myanmar, Cambodia, and Laos. Each country profile reviews trends in relevant product categories and in ports of entry. In addition, each country profile includes a table showing volumes and top ports of entry for main products. Collated summaries of country trends can be found in the main text in Figure 7 (key products and trends for each country) and Figure 4 (main ports of entry by producer country and associated products).

RUSSIA

Russia's great expansion of forest product exports to China and its currently dominant position in China's timber imports are among the strongest themes emerging from this analysis. Overall, Russia's forest product exports to China grew from 2.0 million m³ RWE in 1997, or 5.0 percent of total import volume, to 20.2 million m³ RWE, or 21.3 percent of total import volume, in 2002. Russia's role in China's timber product imports is much more pronounced than in pulp and paper; and Russian timber product exports to China exceed those of pulp and paper by far. Over the period studied, Russian timber product exports to China grew at an average annual rate of 80 percent, as compared to 40 percent for pulp and 20 percent for paper.

- Logs were the predominant timber product China imported from Russia, accounting for well over 90 percent of total Russian timber product imports by volume. Although starting from a nearly equal base in 1997, softwood log imports from Russia now exceed those of hardwood logs by a ratio of over 14 to one.
- Like logs, lumber imports from Russia have also grown rapidly, with softwood lumber dominating over hardwood, but total import volumes remain small when compared to logs.
- The import of other Russian timber products, including plywood, veneer, and wood chips, was negligible over the period studied.
- Despite the dominance of timber products, Russian imports of pulp and paper are also significant, rising to 3.6 million m³ RWE and 0.8 million m³ RWE, respectively, in 2002.

Russia's importance in China's forest product trade can be attributed to a number of factors: (1) similarity of wood species in the Russian Far East and northeast China (China's traditional timber base); (2) convenience in border trade and rail links between Russia and the neighboring Chinese provinces of Heilongjiang and Inner Mongolia; (3) favorable tax policies for border trade; and (4) Russia's resumption of maritime shipping of timber products in 2001. With the last of these, Russia's timber can now be directly shipped to major timber consuming regions on China's

eastern coast. The volume of logs shipped by boat from Russia to China grew from 570,000 m³ in 2001 to 2 million m³ in 2002.

In terms of ports of entry, border trade inland ports handle the great majority of Russian forest product imports entering China, though ocean ports have begun to play a role. Figure 8 below lists the main ports of entry for the chief Russian forest product imports.

- In the case of logs, border ports Harbin, Manzhouli, and Hohot have dominated since 1997 and therefore also account for the most growth, though ocean ports Dalian and Nanjing are growing in importance with the resumption of maritime trade. As with logs in general, softwood logs from Russia enter mainly through Manzhouli and Harbin (with slightly more coming through Manzhouli) and, to a lesser extent, through Hohot. Interestingly, hardwood logs exhibit a different trend, coming primarily through Harbin. This is consistent with the distribution of Russian Far East timber resources in that more of the hardwood resources are located further east in the region.
- For lumber, Manzhouli dominates the trade overall and the softwood component, with Harbin and Hohot playing lesser roles. As with hardwood logs, however, Russian hardwood lumber enters predominately through Harbin.

Table 4: Profile of Main Russian Forest Product Imports into China
units of volume: million m³ RWE; port indicators: percentage of total volume

Product	Volume in 2002	Main Ports of Entry in 2002
Timber Products	15.78	Harbin, Manzhouli, Hohot
Logs	14.81	36% Harbin, 36% Manzhouli, 15% Hohot, 7% Dalian, 3% Nanjing
Softwood logs	3.85	37% Manzhouli, 33% Harbin, 16% Hohot, 7% Dalian, 4% Nanjing
Hardwood logs	0.96	82% Harbin, 8% Manzhouli, 4% Urumqi, 2% Tianjin, 2% Hohot
Lumber	0.55	58% Manzhouli, 24% Harbin, 12% Hohot, 4% Urumqi, 0.8% Dalian
Softwood lumber	0.46	69% Manzhouli, 14% Hohot, 10% Harbin, 5% Urumqi, 0.9% Dalian
Hardwood lumber	0.095	91% Harbin, 6% Manzhouli, 1% Urumqi, 0.6% Changchun, 0.6% Shanghai
Pulp	3.6	84% Manzhouli, 4% Huangpu, 3% Shanghai, 2% Harbin, 2% Qingdao
Paper	0.8	58% Manzhouli, 21% Shenzhen, 8% Shanghai, 5% Huangpu, 2% Tianjin

- Russian pulp enters China predominately through Manzhouli; and pulp imports through this port of entry grew by 3.5 times between 1997 and 2002. The predominance of Manzhouli in pulp imports corresponds to the location of a very large-scale pulp mill in Irkutsk, Siberia, on Lake Baikal. Manzhouli, with a share of 58 percent, also accounted for the majority of Russian paper and paperboard imports in 2002, though imports through Shenzhen have grown significantly since 2000.

INDONESIA

A top player in the China forest product trade, Indonesia has seen very strong growth in its exports to China in recent years, with expansion clearly driven by the pulp and lumber trades. Indonesia's share of China's forest product imports in 2002 (10.6 percent) was a bit less than its share in 1997 (12.5 percent). Given growth in China's overall import volumes, however, a doubling in total volume of Indonesian forest product imports is hidden in these figures.

- Trends for Chinese imports of Indonesia's pulp contrast strongly with those for imports of Indonesian paper. China's pulp imports from Indonesia increased over 2.5 times between 1997 and 2002, growing from 1.3 million m³ RWE to 4.5 million m³ RWE. Paper imports from Indonesia, reflecting to an exaggerated extent China's overall shift of import growth from paper to pulp, dropped from their peak of 2.8 million m³ RWE in 1999 and were 2.0 million m³ RWE in 2002.
- Currently the number three supplier of timber products to China, Indonesia's overall share in China's timber product imports has dropped from 19.4 percent in 1997 to 9.7 percent in 2002, but overall volume has risen.
- Analysis of Indonesia's timber product imports to China by volume shows a shift in dominant product from plywood in 1997 and 1998 to lumber by 2002 (see Figure 9 below). While Indonesia is still China's number one supplier of plywood, trade in this segment has dropped, as China expands its own capacity. In stark contrast, growth in China's Indonesian lumber imports has been phenomenal, increasing by 4.7 times from 1997 to reach 1.4 million m³ in 2002. Supplying 26 percent of China's lumber imports by volume in 2002, Indonesia is China's top supplier in this segment as well. The vast majority of Indonesian lumber imports to China are hardwood.
- The final key element in the picture of Indonesia's timber product trade with China is very strong growth in log imports between 1997 and 2001 (with a rise from 30,800 m³ to 1.14 million m³), prior to a precipitous drop in 2002 (to 251,000 m³). It is thought that the drop is linked to a log export ban instituted in Indonesia in 2001. As with sawn wood, the vast majority of logs supplied by Indonesia to China are hardwood.

Table 5: China's Timber Product Imports from Indonesia 1997 – 2002

Product	1997	1998	1999	2000	2001	2002
Timber products	2.46	3.24	3.05	3.78	4.25	3.71
Logs	0.031	0.097	0.386	0.602	1.14	0.251
Lumber	0.355	0.456	0.845	1.40	1.74	2.03
Plywood	1.80	2.30	1.47	1.50	1.07	1.13
Veneer	0.0133	0.0433	0.0372	0.0319	0.0320	0.0298
Wood Chips	0.0010	0.0003	0.0009	0.0008	0.0014	0.0003
Other	0.256	0.342	0.314	0.248	0.265	0.272

Top Chinese ports of entry for Indonesian forest products are almost all located in one of China's two top economic growth regions: the Shanghai/East China area and South China's Guangdong Province. Over the period studied, growth in Indonesian forest product imports across product areas was particularly notable for the ports of Nanjing and Shanghai in East China, and Shenzhen in South China. Qingdao, in North China, also showed impressive growth in the single category of pulp. Table 6 below includes a summary of the top five ports of entry for the most significant product areas of Indonesian imports.

- For Indonesian logs, impressive growth between 1999 and 2001 was exhibited in both Nanjing (830 percent growth over two years) and Shenzhen (102 percent growth over two years), before Indonesian log exports to China dropped precipitously in 2002.
- Lumber imports grew substantially between 1997 and 2002 for Shanghai (growth of 38 times to 724,600 m³ and the top port position in 2002) and Shenzhen (growth of 1.9 times over the period) and for Nanjing after 2000, while the importance of Huangpu (serving part of the Guangzhou region) has declined.
- Indonesian pulp imports through Nanjing have grown rapidly; and Nanjing now accounts for an impressive 54 percent of all Indonesian pulp imports. While Shanghai has also stood out as a main port of entry for Indonesian pulp throughout the years studied, Qingdao's recent and rapid growth enabled it to surpass Shanghai in 2002, when its imports accounted for 22 percent of the total.

Table 6: Profile of Indonesian Forest Product Imports into China
units of volume: million m³ RWE; port indicators: percentage of total volume

Product	Volume in 2002	Main Ports of Entry in 2002
Timber Products	3.71	Shanghai, Shenzhen, Nanjing
Logs (mostly hardwood)	0.251	67% Nanjing, 10% Shenzhen, 8% Shanghai, 4% Hangzhou, 4% Guangzhou
Lumber (mostly hardwood)	1.99	51% Shanghai, 29% Shenzhen, 9% Nanjing, 4% Huangpu, 2% Guangzhou
Plywood	1.13	26% Shenzhen, 21% Shanghai, 12% Guangzhou, 9% Huangpu, 6% Nanjing
Pulp	4.5	54% Nanjing, 22% Qingdao, 15% Shanghai, 2% Huangpu, 2% Ningbo
Paper	2.0	30% Shenzhen, 26% Huangpu, 14% Shanghai, 9% Nanjing, 6% Guangzhou

MALAYSIA

The vast majority of Malaysia's forest product imports to China over the period studied have been timber products, with an emphasis on logs, lumber, veneer, and plywood. Paper imports made up less than 1 percent of the total in 2002; and there have been no wood pulp imports from Malaysia to China since 1999. Volumes of timber product imports from Malaysia over the period studied have had ups and downs; and average growth has been much smaller than that for China's timber product imports as a whole. Indeed, Malaysia's timber product imports to China show only 10 percent growth total on base year from 1997 to 2002. Correspondingly, Malaysia's share in China's total timber product imports has dropped from 29.9 percent to 10.9 percent over the same period. Clearly, then, Malaysia, while maintaining its historic volume, is not taking up a substantial share of the impressive expansions in Chinese demand.

In 2002, logs, followed by lumber, made up the greatest proportion of Malaysian timber imports. Plywood and veneer dropped over the period studied from their number one and number two roles in the composition of Malaysian imports as China expanded its domestic production capacity.

- Although Malaysian log imports dropped in 2001, overall growth trends have raised log imports from 733,000 m³ in 1997 to 2.12 million m³ in 2002. The vast majority of Malaysian logs imported into China are hardwood, though there were significant softwood imports in 2000 (307,000 m³), which have since abated.
- Growth in lumber imports (mainly hardwood) has been unsteady, though there has been an overall rise from 440,000 m³ RWE in 1997 to 685,000 m³ RWE in 2002.

- As for plywood and veneer, imports of the former dropped from a peak of 1.7 million m³ RWE in 1998 to 248,000 m³ RWE in 2002, and imports of the latter dropped from a peak of 1.3 million m³ RWE in 2000 to 370,000 m³ RWE in 2002. Despite these low volumes, Malaysia was China's number one supplier of veneer (52 percent of market share) and its number two supplier of plywood (16 percent market share) in 2002.

Table 7: Profile of Main Malaysian Forest Product Imports into China
units of volume: million m³ RWE; port indicators: percentage of total volume

Product	Volume in 2002	Main Ports of Entry in 2002
Timber Products	4.12	Nanjing, Guangzhou, Huangpu, Shenzhen, Shanghai
Logs (mostly hardwood)	2.12	39% Nanjing, 32% Guangzhou, 10% Shenzhen, 9% Hangzhou, 3% Ningbo
Lumber (mostly hardwood)	0.685	33% Shenzhen, 31% Huangpu, 22% Shanghai, 8% Guangzhou, 2% Xiamen
Plywood	0.248	23% Huangpu, 21% Shenzhen, 18% Shanghai, 14% Guangzhou, 7% Qingdao
Veneer	0.370	57% Guangzhou, 24% Shanghai, 8% Jiangmen, 6% Huangpu, 3% Hangzhou

In terms of ports of entry, Malaysian forest products, like their Indonesian counterparts, tend to enter China through ocean ports in the South China region (Guangdong Province) or in the Shanghai region (East China). As with Indonesia, Nanjing, Shenzhen, and Shanghai are important ports, though in the case of Malaysia, the city of Guangzhou's two ports (Guangzhou and Huangpu in South China) also make a strong showing. Top five ports of entry for each of the main forest products imported from Malaysia are listed in Figure 11 above.

- Log imports entering Nanjing and Guangzhou exhibited growth of several times over the period studied to reach a combined total of 1.5 million m³ in 2002, or 71 percent of total Malaysian log import volume that year.
- The leading ports for Malaysian lumber imports have remained relatively stable over the period studied, though the share of Shenzhen (number one in 2002) has expanded somewhat, while the volumes entering Huangpu (number two in 2002), Shanghai, and Guangzhou have all contracted somewhat from their peaks.
- Finally, while the total volume of Malaysian veneer imports has diminished, Guangzhou Port has expanded its share, so that the majority of product now enters through this port.

THAILAND

Official import statistics indicate that Thailand had the fourth largest volume among the Asian countries studied of forest products sold on the Chinese market. Over the period reviewed, there has been significant change in the composition of forest product imports from Thailand.

In the first three years of the period, paper imports grew substantially, reaching 1.0 million m³ RWE in 1999 and accounting for over half of China’s forest product imports from Thailand. After 1999, however, timber imports grew, while paper imports shrank. As a result, timber product imports, with a volume of over 1.4 million m³ RWE (9.6 times the 1997 volume), surpassed paper imports substantially in 2002. Pulp imports, while consistently less than those of either paper or timber, have shown some overall growth since 1997 and were 364,369 m³ RWE in 2002.

- Lumber made up the largest portion of timber product imports throughout the period studied. In 2002, China imported 829,000 m³ RWE of lumber from Thailand, 27 times as much as in 1997. The vast majority of these lumber imports were hardwood.
- Log imports were extremely limited by comparison to lumber, with the “other” category (over 95 percent particleboard and fiberboard each year) instead making up the second largest Thai timber product imports category by far.

Table 8: Profile of Thai Forest Product Imports into China
units of volume: million m³ RWE; ports indicators: percentage of total volume

Product	Volume in 2002	Main Ports of Entry in 2002
Timber Products	1.41	Guangzhou, Huangpu, Shenzhen
Lumber (mostly hardwood)	0.829	36% Guangzhou, 27% Huangpu, 23% Shenzhen , 4% Haikou, 3% Tianjin
Other Timber Products*	0.553	-----
Pulp	0.364	63% Nanjing, 16% Gongbei, 10% Shanghai, 3% Dalian, 2% Huangpu
Paper	0.699	73% Shenzhen, 19% Huangpu, 3% Guangzhou, 1% Jiangmen, 1% Shanghai

*Note: Over 95 percent of the “other timber products” category in 2002 consisted of fiberboard (0.310 million m³ RWE) and particleboard (0.236 million m³ RWE). This category does not include other major timber products specified elsewhere in this paper (e.g. logs, plywood, wood chips).

Table 8 above shows import volumes of major products from Thailand and gives leading ports of entry for 2002.

- As Thai lumber imports (mostly hardwood) expanded rapidly over the period, the ports of Guangzhou, Huangpu, and Shenzhen, all in South China’s Guangdong Province, quickly took the lead as points of entry, each with growth of 14 times or greater over the period studied.
- For Thai pulp imports, there has been strong variation among the lead players over the years studied. Gongbei, Huangpu, Shanghai, and Qingdao have all played leading roles in the past, but Nanjing began to dominate imports in 2001 and made up 63 percent of the total in 2002.

- As with hardwood lumber, ports in South China's Guangdong Province have dominated Thai paper imports during the years studied. Throughout the period, Shenzhen, and to a lesser extent, Huangpu, have handled the majority of Thai paper imports.

PAPUA NEW GUINEA

Among the Asian countries studied, Papua New Guinea is fifth in volume of forest product imports supplied to China. While PNG is responsible for only 1.2 percent of China's total forest product imports, the country plays a much more significant role in the hardwood log category, in which it is responsible for 13.2 percent of imports by volume, second only to Malaysia among the countries studied. Further, given the small size of PNG, it can be inferred that its log trade with China has very important implications for the island nation.

- The main characteristic of China's forest product imports from PNG over the years studied has indeed been the increasing volumes of hardwood logs, which expanded over five times, from 178,000 cubic meters in 1997 to 1.13 million m³ in 2002.
- Hardwood logs have completely dominated PNG's forest product imports to China, though a small proportion of veneer has become significant over the past few years, with volumes of 43,200 m³ RWE and 20,600 m³ RWE in 2001 and 2002, respectively.

Table 9 below summarizes the volumes and ports of entry of PNG's forest product imports to China.

- Nanjing dominates PNG log imports (accounting for 86 percent by volume in 2002), having first emerged as the leading port for this trade in 1998. PNG log imports into Nanjing grew by 16 times between 1998 and 2002, when they reached a volume of 965,000 m³.

Table 9: Profile of PNG Forest Product Imports into China
units of volume: million m³ RWE; port indicators: percentage of total volume

Product	Volume in 2002	Main Ports of Entry in 2002
Timber Products	1.15	Nanjing
Hardwood Logs	1.13	86% Nanjing, 6% Hangzhou, 3% Shenzhen, 2% Shanghai, 2% Haikou
Veneer	0.021	100% Shanghai

MYANMAR

Timber products dominated Myanmar's forest product trade with China during the years studied, with only a few minimal pulp and paper imports appearing in the earlier part of the period. Official timber product imports from Myanmar tripled between 1997 and 2002, reaching 948,000

m³ in the latter year and reflecting strong growth in border trade. It is unclear, however, whether this increase is to be attributed to real volume growth or, rather, a shift to an increasing proportion of legally registered product.

- Logs and lumber dominate the product mix, with logs making up 64 percent of imports by RWE volume in 2002 and with lumber making up 34 percent. Log growth was strongest between 1997 and 2000, having since appeared to level off, while sawn wood imports continued to grow through 2002.
- Hardwood dominates Myanmar imports, accounting for 91 percent of logs and 80 percent of lumber in 2002.

Table 10: Profile of Myanmar Forest Product Imports into China
units of volume: million m³ RWE; port indicators: percentage of total volume

Product	Volume in 2002	Main Ports of Entry in 2002
Timber Products	0.948	Kuming, Shanghai
Logs (91% hardwood)	0.605	94% Kunming, 2% Shanghai, 2% Nanjing, <1% Guangzhou, <1% Shenzhen
Lumber (80% hardwood)	0.321	89% Kunming, 8% Shanghai, <1% Huangpu, <1% Nanjing, <1% Shenzhen

Overland entry via border ports administered by Kunming, provincial capital of Southwest China's Yunnan Province, made up the vast majority of forest product imports from Myanmar (see Table 10, above). Kunming is the official port of entry overseeing all inland border gateways in Yunnan Province.

- Softwood logs and lumber entered almost exclusively through Kunming.
- A small portion of hardwood product (both logs and lumber) has begun to enter by China's eastern and southern ports. This is particularly true in the case of hardwood lumber imports into Shanghai, which began in 1999 and by 2002 reached 8 percent of Myanmar's total hardwood lumber imports into China.

CAMBODIA

According to import statistics, Cambodia is a fairly minor forest product supplier to China. In 2002, Cambodia's official forest product exports to China, almost all of which were timber products, amounted to 129,400 m³ RWE. In fact, this figure represents a drop from the 1997 – 2000 period, during which Cambodian imports were over 280,000 m³ RWE each year.

- Veneer has accounted for the majority of import volume throughout the years studied, though veneer imports have been declining since 1999.

- Plywood emerged as a significant import starting in 1999 as did lumber, to a lesser extent, in 2000.

Table 11: Profile of Cambodian Forest Product Imports into China

units of volume: million m³ RWE; port indicators: percentage of total volume

Product	Volume in 2002	Main Ports of Entry in 2002
Timber Products	0.129	Jiangmen, Shenzhen, Shanghai
Lumber (all hardwood)	0.0075	31% Nanjing, 28% Huangpu, 25% Jiangmen, 10% Shenzhen, 6% Shanghai
Plywood	0.024	69% Shanghai, 14% Qingdao, 7% Nanjing, 4% Shenzhen, 3% Guangzhou
Veneer	0.097	67% Jiangmen, 29% Shenzhen, 4% Huangpu

Table 11 above profiles the chief products imported from Cambodia by main ports of entry in 2002.

- Cambodian veneer all entered through South China ports in Guangdong Province in 2002, while plywood and lumber showed a greater geographic mix. Earlier in the time period studied, however, East China's Shanghai and Hangzhou had played significant roles in Cambodian veneer imports, before imports of the product dropped overall. More recently, Jiangmen (in Guangdong Province) accounted for 67 percent of Cambodian veneer imports in 2002.
- Shanghai is the top port of entry for Cambodian plywood, accounting for a 69 percent share in 2002. Shanghai imports of this product grew throughout the period, until 2002, when they dropped along with overall Cambodian plywood imports.

LAOS

Official forest product imports from Laos were only 18,710 m³ RWE in 2002, less than those of any other of the Asian countries covered in this report. It is not clear from the data, however, whether transshipment through Thailand may result in entry of additional Laotian product. Laotian forest product imports to China were completely dominated by timber products, with pulp and paper imports being negligible over the period studied.

- Among Laotian timber product imports, the bulk is accounted for by hardwood logs (the number one product import category throughout the period and making up 57 percent of total RWE volume in 2002) and hardwood lumber (42 percent of total RWE volume in 2002).

- Aside from an uncharacteristic rise to 30,700 m³ RWE in 1999 and subsequent drop, China's imports of Laotian forest products, including both hardwood logs and hardwood lumber, rose gradually over the period studied.

Table 12: Profile of Laotian Forest Product Imports into China
units of volume: million m³ RWE; port indicators: percentage of total volume

Product	Volume in 2002	Main Ports of Entry in 2002
Timber Products	0.0187	Kunming, Shanghai, Huangpu, Shenzhen
Logs (all hardwood)	0.0106	42% Kunming, 17% Huangpu, 15% Shenzhen, 11% Shanghai, 7% Guangzhou
Lumber (all hardwood)	0.0078	72% Kunming, 16% Shanghai, 6% Nanjing, 5% Huangpu, <1% Hangzhou

Table 12 above profiles the chief products imported from Laos by main ports of entry in 2002.

- While ocean ports handle a portion of Laotian imports, beginning in 1998 the inland port of Kunming began to play a dominant role in the entry of both hardwood logs and hardwood lumber from Laos as border trade expanded.
- Ocean ports of relevance for Laotian hardwood logs and lumber during the period studied are located predominantly in either South China or the Shanghai/East China region.

ANNEX 2. PORT OF ENTRY TRENDS BY PRODUCT

Table 13 below summarizes the major findings on ports of entry for specific categories of forest product. For timber products generally, it can be seen that the leading five ports by volume include a mix of ocean ports serving coastal China's economic powerhouses (Nanjing and Shanghai in the Shanghai-Jiangsu area and Shenzhen in Guangdong Province) and, now at the top of the list, newer entrants from Northeast border areas (Harbin and Manzhouli, which replaced South China's Guangzhou and Huangpu in the top five in timber import value in 2001 and 2002, respectively). In contrast, pulp and paper show much less of a role for Northeast border ports, with ocean ports instead clearly dominating this trade.

LOG IMPORTS

- The log category shows an even stronger influence of increasing overland border trade than timber products generally. The inland border ports of Harbin, Manzhouli, and Hohot, alongside seaports Nanjing and Qingdao, were all in the top five for log imports in 2002. Interestingly, with the rise in Russian border trade, Nanjing was recently overtaken in its role as highest volume port of entry for logs by both Harbin and Manzhouli.
- The softwood log trade is dominated by inland border trade. The top three softwood log ports of entry by volume are all inland border ports (Manzhouli, Harbin, and Hohot) exhibiting strong growth trends from border trade with Russia. Softwood log imports through Manzhouli, for example, increased 13 times between 1997 and 2002.
- Tropical hardwood logs enter China mainly through ocean ports, while over half of temperate hardwood logs enter through overland trade. Nanjing was the leading port in volume of tropical hardwood log imports throughout the period studied, accounting for 53 percent of imports in 2002. Temperate hardwood logs similarly show a single leading port, with Harbin handling the greatest volume for each year studied and accounting for 47 percent of imports in 2002. Interestingly, for both tropical and temperate hardwood logs, Shanghai's role as port of entry has dropped, while that of Qingdao has grown.

SAWN WOOD IMPORTS

- Overall, the sawn wood category does not show the same dominance of overland border trade with Russia found in the log category. This trend correlates with the greater role of hardwoods in the composition of lumber imports. In general, sawn wood imports tend to be most focused on ports serving China's major economic powerhouse regions.
- For sawn wood overall, for example, the top two ports are Shenzhen and Shanghai, each located in one of China's fastest growing regions. Thousands of export-oriented wood product manufacturers are based in these regions, including furniture and wood flooring mills, which consume large quantities of imported lumber.

Table 13: Chinese Ports of Entry -Top Ports and Port Trends by Forest Product Category
(note: Leading ports are listed in order of decreasing export volume)

Product	Top Ports In 2002	Notes on Port Trends
Timber Products	1. Manzhouli 2. Harbin 3. Shenzhen 4. Nanjing 5. Shanghai	Reflecting growth in Russian timber trade, rising share for Harbin and Manzhouli which replaced Guangzhou and Huangpu in top five in timber product import value in 2001 and 2002, respectively.
Logs	1. Harbin 2. Manzhouli 3. Nanjing 4. Hohot 5. Qingdao	Nanjing had been largest port of entry for logs before 2000, but was overtaken by Harbin and Manzhouli due to growing trade with Russia.
Softwood Logs	1. Manzhouli 2. Harbin 3. Hohot	Strong growth trends for border trade with Russia; e.g. softwood log imports through Manzhouli increased 13 times from 1997 to 2002
Tropical Hardwood Logs	1. Nanjing 2. Qingdao 3. Guangzhou 4. Kunming 5. Shenzhen	Nanjing top port throughout period (1997 – 2002), handled 53% of volume in 2002. Shanghai's role dropped over the period, while Qingdao's and Kunming's rose.
Temperate Hardwood Logs	1. Harbin 2. Qingdao 3. Shanghai	Harbin top port for all years (1997 – 2002), handled 47% of volume in 2002. Shanghai's role dropped over the period, while Qingdao's rose.
Sawn Wood	1. Shenzhen 2. Shanghai 3. Huangpu 4. Guangzhou 5. Manzhouli	Dramatic growth in both Shenzhen and Shanghai, located in China's fastest growing regions and home to thousands of export-oriented wood product manufacturers (e.g. furniture and wood flooring mills) requiring large quantities of lumber.
Softwood Lumber	1. Manzhouli 2. Shenzhen	Manzhouli and Shenzhen replaced Hohot as top ports, each accounting for about ¼ of total in 2002
Tropical Hardwood Lumber	1. Shanghai 2. Shenzhen 3. Huangpu	Strongest growth in Shanghai, which led with 34% of volume in 2002. Overland trade limited: Harbin joined top five in 2001; handled only 8% in 2002.
Temperate Hardwood Lumber	1. Shenzhen 2. Huangpu 3. Shanghai	Shenzhen top port since 1998; handled 42% of volume in 2002.

Plywood	1. Shenzhen 2. Shanghai 3. Guangzhou 4. Huangpu	Plywood imports overall declining, as China's production capacity increases; remaining imports dominated by coastal ports; Russia border trade ports not represented in top five
Veneer	1. Guangzhou 2. Jiangmen 3. Shanghai 4. Shenzhen 5. Huangpu	After 2000, Shanghai and Huangpu imports dropped significantly and Jiangmen and Guangzhou imports grew; overall, veneer imports in decline
Wood Chips	1. Qingdao	China is net exporter of wood chips; 2002 surge in imports mainly into Qingdao from Australia
Pulp and Paper	----	----
Pulp	1. Nanjing 2. Shanghai 3. Qingdao 4. Manzhouli 5. Huangpu	Combined imports of top five ports accounted for 75% of total. Shanghai was top port between 1997 and 2000; Nanjing surpassed Shanghai in 2001; in general, coastal ports dominate
Paper and Paperboard	1. Shenzhen 2. Huangpu 3. Shanghai	Few changes over the six year period. In 2002, Shenzhen imported 41% and Huangpu 23%.

- For hardwood lumber, tropical and temperate product share the same three leading ports (Shanghai, Shenzhen, and Huangpu) for most of the period studied. For tropical hardwood lumber, Shanghai showed the largest growth and was the leading port of entry in 2002, with 34 percent of volume. For temperate hardwood lumber, Shenzhen has been the leading port since 1998 and accounted for 42 percent of volume in 2002. It is interesting to note that overland trade does not play the same role in temperate hardwood lumber imports as it does in temperate hardwood log imports, with Harbin handling only eight percent by volume of the former in 2002.
- Finally, for softwood lumber, Manzhouli and Shenzhen have overtaken Hohot as the top entry ports, with each accounting for about one quarter of softwood lumber imports by volume.

IMPORTS OF PANEL PRODUCTS

- While small and declining imports make analysis of ports of entry for board products less important in understanding overall trade flows, the paths of these products still merit some attention. Of particular interest is the complete absence of inland ports bordering Russia in the top five ports of entry for both plywood and veneer. Instead, the trade for these products is fully dominated by ports in the Guangdong (South China) and Shanghai regions.

PULP AND PAPER

Like panel products, the pulp and paper trade also shows dominance of ocean ports near major manufacturing centers.

- For pulp, the top five ports of entry, responsible for 75 percent of imports, were Nanjing, Shanghai, Qingdao, Manzhouli, and Huangpu, with Nanjing surpassing Shanghai's ongoing position as the top port for pulp imports in 2002. It is interesting to note that only one of the two main ports serving the Russia overland trade made the top five pulp ports and was ranked only fourth. This reflects the lesser (though not insignificant) role of Russian pulp, as compared to Russian logs, in the border trade.
- Paper and paperboard imports show few changes in major ports of entry over the six years studied. In fact, the South China ports of Shenzhen and Huangpu (the latter covering the area in and around east Guangzhou) have dominated this trade throughout the period, with Shenzhen importing 41 percent and Huangpu 23 percent of total volume in 2002.

ANNEX 3: MAP OF MAIN PORTS OF ENTRY



ENDNOTES

¹ In 1990, China was ranked seventh among nations in forest product import value. By 2000, it was ranked second, with only the US importing a greater total value of forest products. Source of data: "FAOSTAT Agricultural Data," Food and Agriculture Organization of the United Nations (FAO), 2004: Accessed via <http://faostat.fao.org/> on March 12, 2004.

² The ITTO has recently commissioned a number of trade discrepancy studies, which provide details on the gap between import statistics of destination countries (e.g. China) and export statistics of supplier countries (e.g. Indonesia). Gaps are thought to be a result of product that is illegally harvested in and/or smuggled out of the producer country. An important study that covers illegal logging more generally is FAO's "Law Compliance in the Forestry Sector: An Overview" by Arnoldo Contreras-Hermosilla (2001). Other good sources include reports and briefings produced by the Environmental Investigation Agency's Forests for the World Programme (http://www.salvonet.com/eia/campaigns2_reports.shtml) and www.globaltimber.org.uk.

³ WWF Forests for Life Programme, TRAFFIC Rufford Foundation and World Bank/WWF Alliance, "China's Wood Market, Trade and the Environment", editors Zhu Chunquan and Rodney Taylor, 2004.

⁴ World Bank, 2000, *A Review of the World Bank's 1991 Forest Strategy and Its Implementation*, Vol. 1: Main Report, p. 14, Operations Evaluation Department, 2000. "Biodiversity Hotspots for Conservation Priorities," *Nature*, Vol. 403.

⁵ See full paper for detailed explanation of conversion factors used in this analysis. In brief: In order to compare and aggregate volumes of timber products and pulp and paper, various types of forest products are converted to round wood equivalent volumes (RWE). Aside from logs, a conversion factor is used to convert a product's physical volume in units of cubic meters (m³) to its RWE volume in cubic meters (m³ RWE). For example, one m³ of lumber = 1.43 m³ RWE of lumber, while 1 m³ of logs = 1 m³ RWE of logs. For the sake of clarity, the text will designate which volumes are m³ RWE (except in the case of logs). Otherwise, units of m³ without RWE designation, when used for a single type of product, should be interpreted as physical cubic meters. Conversion factors to calculate RWE are sourced mainly from FAO, with special pulp conversion factors provided by the China Paper Association.

⁶ Dequan He, Andy White, and Christopher Barr, "Recent Trends in China's Paper and Paperboard Demand, Supply and Trade," CIFOR and Forest Trends, 2004.

⁷ In all, Chinese customs designates three categories for both hardwood logs and hardwood lumber: (1) tropical, (2) temperate, and (3) mixed. The "mixed hardwood" categories, however, consist of all hardwoods (either tropical or temperate) for which China Customs does not have specific species designations. The analysis on which this paper is based divides each of hardwood logs and hardwood lumber into two categories only: (1) tropical and (2) temperate. The "mixed hardwood" categories used by China Customs are disaggregated by country and, following ITTO's definition of tropical timber, all hardwood product from tropical countries is treated as tropical, while that from other countries is classified as temperate.

⁸ US Foreign Agricultural Service, "Solid Wood Products Annual Report 2003 – China," 2003, in *Gain Report*, #CH3118, Beijing.

⁹ Wood pulp as referred to here and in Figures 5 and 6 is considered a subset of the pulp category discussed earlier and included in Figure 3. Imports of the general pulp category also include wastepaper (imported to be recycled into pulp in China) and recycled pulp (paper which has already been recycled into pulp), while the term "wood pulp" refers only to product that has not been recycled.

¹⁰ Vietnam is not included among the Asian countries for which detailed analysis was conducted. Basic data on Vietnam's forest product exports to China, however, indicate that the country, like Cambodia and Laos, is a minor supplier. (In 2002, according to official statistics, RWE volume of forest product imports to China from Vietnam was 165,600 m³, or 0.17 percent of China's total. For Cambodia, the 2002 proportion of total volume was 0.14 percent and for Laos, it was 0.02 percent.)

¹¹ For Vietnam's exports to China, of the total 2002 forest product RWE import volume of 165,000 m³, wood charcoal made up 66 percent, while logs and lumber (mostly hardwood) made up 9 percent each.