

Global Trade of Wood and Paper Products

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Abstract

Global trade of wood products is accelerating amid shifting regional production of raw materials. At the same time structural change is occurring in regional production and consumption of finished and semi-finished wood and paper products. Some countries which once were major net exporters of wood products, such as the United States, have become major net importers. Conversely, China, a country that not long ago was a major net importer of wood products, is increasingly dominant as an exporter of value-added wood products such as furniture. What are the reasons behind these shifts in sources of supply and demand for wood and wood products?

Direct forces such as population growth and rising socio-economic levels drive demand for wood and paper products. Increasing purchasing power in developing economies empowers consumers, both private and public, to purchase homes, furnishings and accessories. Indirect factors, such promotion of wood, strengthen demand and translate to significant gains in consumption in some markets. Consciousness of climate change and the advantages of wood for products and energy is creating a new impetus for increasing wood products consumption, including wood-derived energy products.

Government and industry policies are important market drivers. Government policies can support increased utilization of wood, or can restrict wood in construction when standards favor competitive building materials. Public procurement policies can be important in this regard. Policies of the wood industry and of companies using wood and paper products, can raise demand, for example through supportive corporate social responsibility programs.

Addressed in this paper are a range of products, from wood raw materials to value-added wood products. Included are analyses of sectors involved in primary processing of sawnwood (lumber), panels, and pulp and paper. Impacts of forest products certification on markets, including wood energy markets, are also examined.

Keywords: wood and paper products markets, wood products trade, wood trade flows, wood energy markets.

1. Introduction

Global trade of wood and paper products is increasingly affecting local economies, governments and organizations. “Globalization” can be positive for consumers when it means more choice and lower prices for products, but it can mean the loss of those consumers’ employment when production of their companies’ products is shifted to another country. Regardless of your perspective, global trade is accelerating, for a variety of reasons, and with considerable divergence between regions. This paper and its presentation cover the main trends by region and by product. Additional information for this paper in the form of statistics and numerous additional graphs, along with the final version of the presentation, may be found in an electronic annex.¹

Trade of wood and paper products ranges from raw materials, e.g. logs, to finished products, e.g. furniture. The products covered in this paper include: industrial roundwood (as opposed to fuelwood), sawnwood (lumber), panels, pulp and paper and value-added wood products. Woodfuel is mentioned, as it has a growing importance in international trade. Most roundwood globally is used for heating and cooking, this local use does not impact trade. However, government policies to provide energy security and promote renewable energy sources in light of escalating fossil fuel prices, have created new international trade for woodfuels such as pellets.

The scope of this analysis is global, with emphasis on main importing and exporting regions of North America, Latin America (combining Central and South America), Europe, the Commonwealth of Independent States (CIS), Asia and Oceania. Because this paper is for the North American-based Society of Wood Science and Technology, Canada and the United States receive emphasis. And as the paper will be presented in Chile, its fast rise to become a global trader is covered. China’s rapid developments over the past decade are highlighted, as is the rebound of the CIS, and especially Russian wood and paper exports.

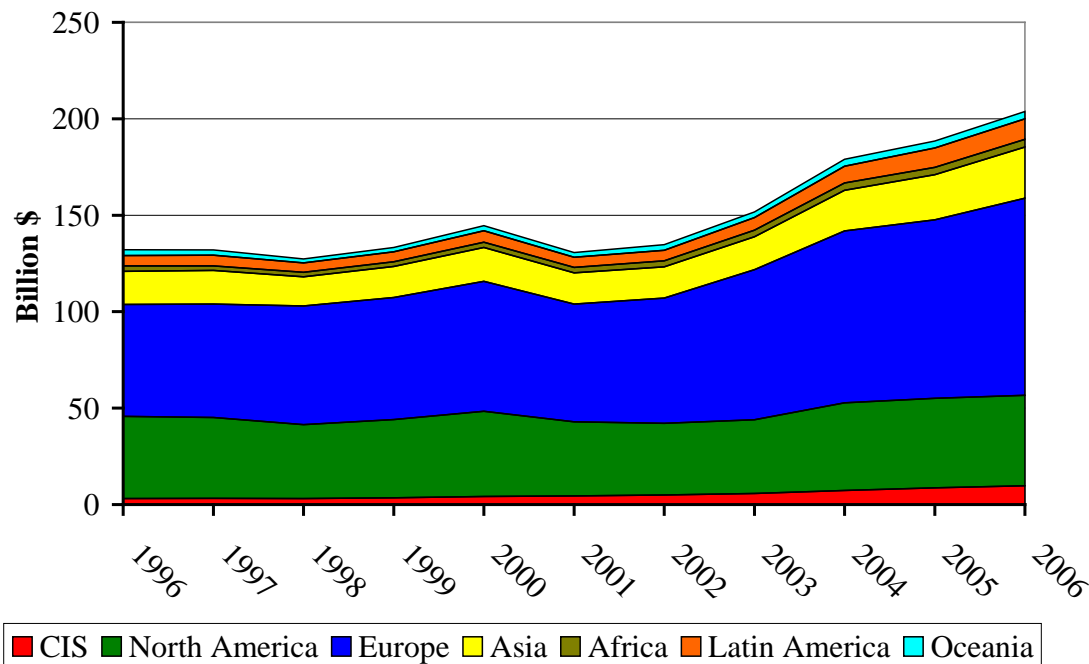
Our analysis period is normally 10 years, 1997-2006, using the most recent data from the United Nations Economic Commission for Europe (UNECE)/Food and Agricultural Organization TIMBER database, FAOStat ForeStat database and UN Comtrade (validated by the European Forest Institute). Global statistics are available through 2006, and statistics for the UNECE region (Europe, North America and the CIS) are available through 2007. At the time of presentation of this paper some new forecasts will be available for the UNECE region through 2009; however, the forecasts are neither included in this paper, nor in the preliminary version of the presentation.

2. Global Forest Products Market Trends

The global export value of wood and paper products increased dramatically from 1996 to 2006, rising by over half (54.2%), from \$132 billion to \$204 billion (Figure 1) (FAO, 2008). According to the statistics, global import values have risen less, (47.7%); although theoretically, global imports and exports should match for a given year. There are many reasons why global imports and exports do not match, among which the most worrisome issue today is the trade of illegally harvested wood.

¹ www.unece.org/trade/timber/mis/presentations.htm

Figure 1



Export Value of Wood and Paper Products by Major Region, 1996-2006

Source: FAOStat, 2008.

Exports from the CIS, and especially Russia, receive considerable attention because they have rebounded during the last 10 years from their low levels following the fall of the Soviet Union in the early 1990s. Currently the value of CIS exports is similar to that of Latin America, despite the greater forest area in the Russian Federation. Over the last decade Latin American exports have doubled to reach \$10.7 billion in 2006 (FAO, 2008). Despite valuable tropical forests, Africa remains a minor player in international trade, with most exports in the form of primary products such as roundwood. Oceania has maturing plantations, but the growth of exports has been slow. The spectacular rise in Chinese exports is quite recent, appearing only within the last few years. Europe has seen the largest growth over the past decade, gaining \$44.2 billion in exports, to reach \$102.2 billion in 2006 (FAO, 2008). All of these figures include trade within and external to the various regions. From 1996 through 2006, North American exports were increasing, although they rose by the smallest percentage of any region (10.3%). Since 2006 exports have fallen worldwide, as have imports, primarily due to the crash in the United States (US) housing and associated forest products markets that began in 2006, and which worsened in 2007 and 2008. This is primarily due to the massive drop in Canadian exports to the US, which is their major customer.

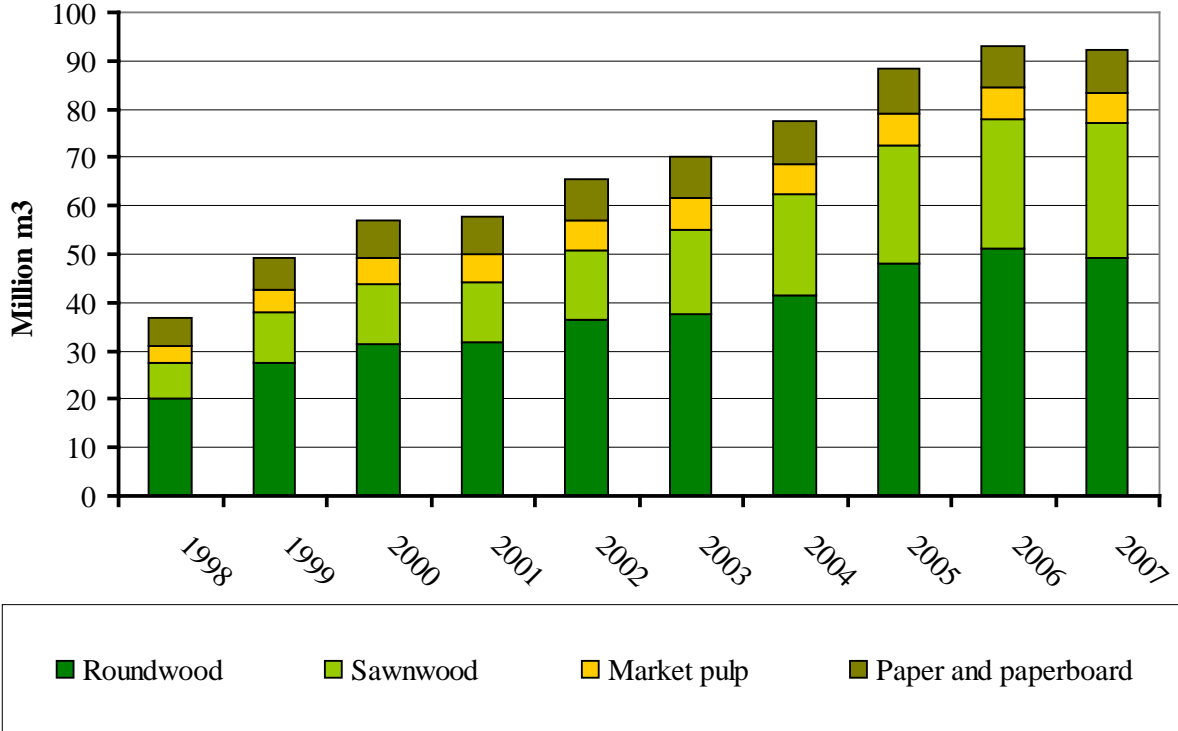
One factor driving exports of forest products is simply availability of forest resources—but this factor alone is not a reliable indicator of export volume as evidenced by the low value of exports from the CIS shown in the graph above. Most CIS exports are low-value industrial roundwood, i.e. sawlogs and pulplogs, which constrains export value growth. CIS export growth, of which most is from the abundantly forested Russia with approximately 25% of the world's forest area, appears far more robust when expressed in volume terms. Of the 80 billion m³ of growing stock in Russia, 47 billion m³ is in forests available for wood supply (FAO, 2005). Of this volume, 20%, or 93 million m³ was harvested in 2005. Officially 24%

of the harvest was exported as roundwood in 2007, or more, 30% as industrial roundwood, i.e. without woodfuel (UNECE/FAO, 2008b).

The more than doubling of roundwood exports over the last 10 years from Russia has not gone unnoticed by the government, which has established an escalating export tax (Figure 2) (UNECE/FAO, 2008a). In mid-2008 the tax was 25% of the value or a minimum of €15 per cubic meter, which is scheduled to increase to 80% or a minimum of €50 per cubic meter as of 2009. These taxes had tremendous effects on global trade patterns in 2008, with countries dependent on Russian logs, e.g. China and Finland, moving quickly to restructure their imports. The goal of the Russian Government is to increase value-added processing and exporting, in part by giving a strong financial incentive for foreign-direct investment in the forest products sector. Some foreign investment is occurring as investors take calculated risks. The new Russian Forest Code which was passed by the Government in early 2007, has not been implemented as of mid-2008, in part due to a restructuring of the Ministry of Natural Resources.

Should foreign investment not develop at anticipated rates consequences within the CIS could be severe. Many remote Russian communities, for example, are dependent upon roundwood exports due to a lack of wood processing facilities. There is concern that the situation could lead to greater illegal logging and illegal export activity.

Figure 2



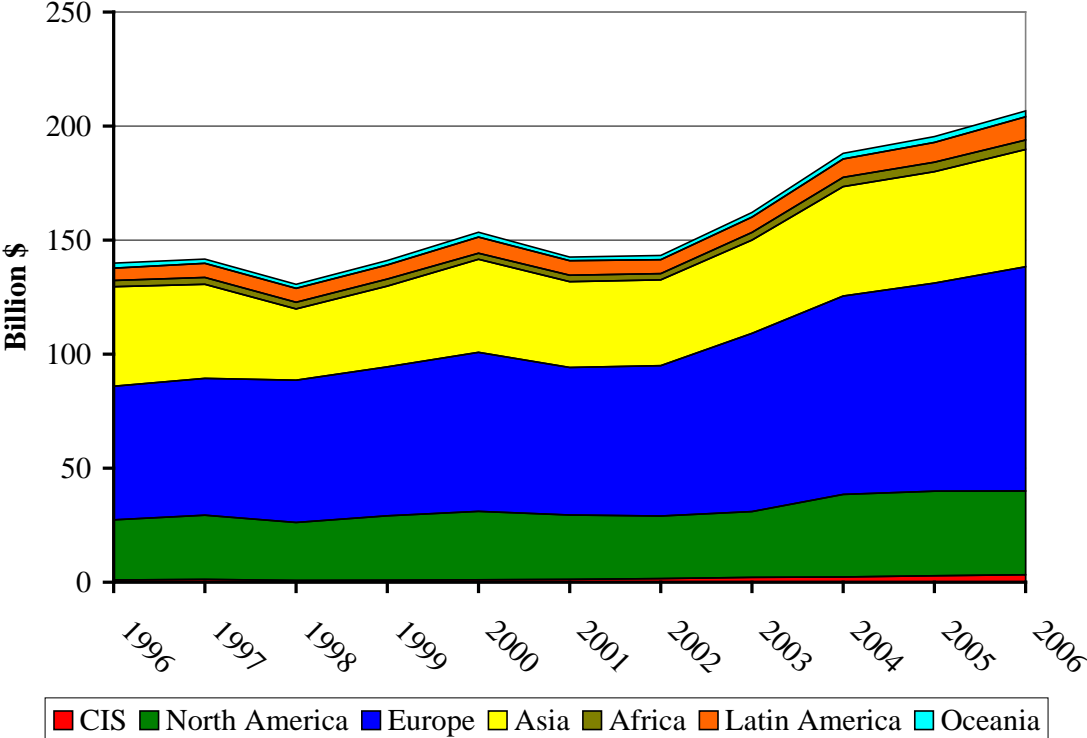
Russian Wood and Paper Products Exports, by Volume, 1998-2007

Notes: Market pulp is woodpulp produced for sale and not used by the manufacturer to make their paper. Volumes in cubic meters converted to roundwood equivalents using UNECE/FAO factors.

Source: UNECE/FAO TIMBER database, 2008.

Imports of wood and paper products developed positively for some regions, especially Europe (Figure 3). Some regions have registered large percentage increases, but based on small values, including Africa, CIS, Latin America and Oceania.

Figure 3

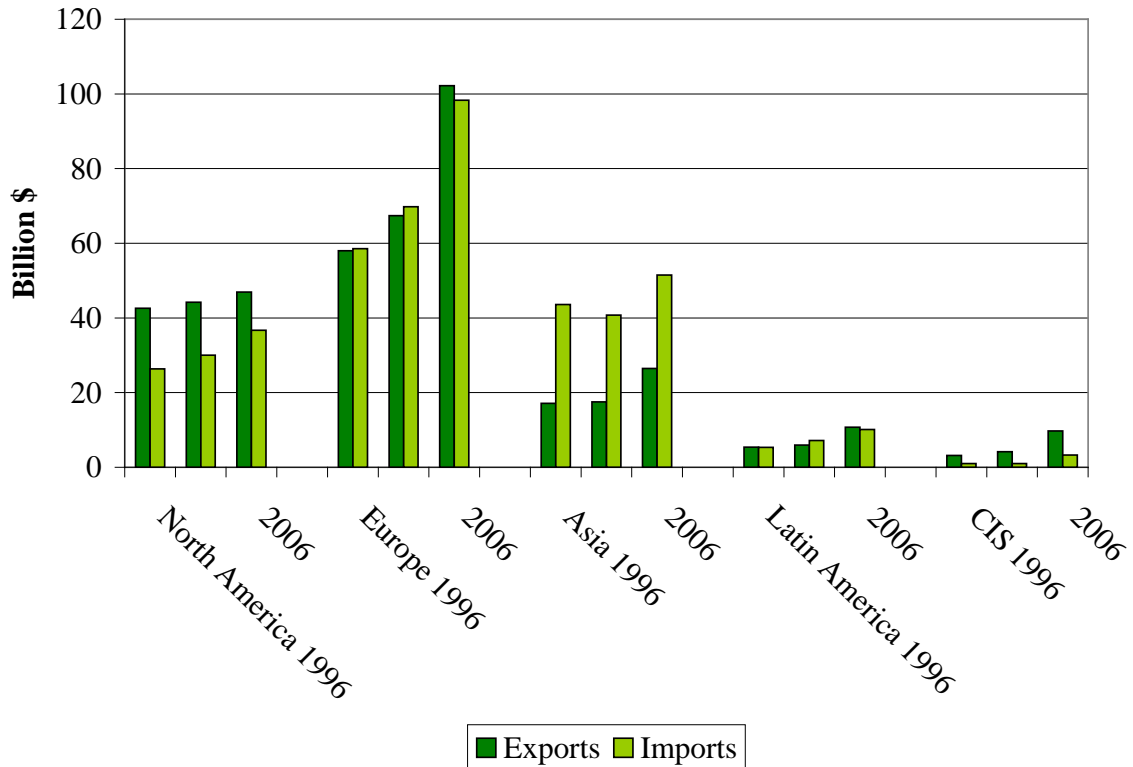


Import Value of Wood and Paper Products by Major Region, 1996-2006

Source: FAOStat, 2008.

The regional trends as presented in Figure 3 above are important for a broad understanding of recent developments in global trade. However, changing drivers of trade, both market and policy drivers, on a subregional basis, are more fascinating. North American net trade remains positive (greater exports than imports), but this is primarily because of Canada’s large export volumes (Figure 4). In contrast, the United States has swung into a net importer status for many wood products, and especially value-added products such as furniture. From 2000 to 2006, Europe shifted from a net importer to a net exporter, as did Latin America (FAO, 2008). One of the goals of the expansion of the European Union (EU), now 27 countries, is to facilitate trade and investment in the larger block of countries. Considerable investment by western EU countries into central and eastern EU countries is taking place to: gain access to wood resources; lower manufacturing and labor costs; access eastern European markets; take advantage of positive investment climates; and hire skilled employees. Relaxing border controls between EU countries has also facilitated the trade of wood and paper products.

Figure 4

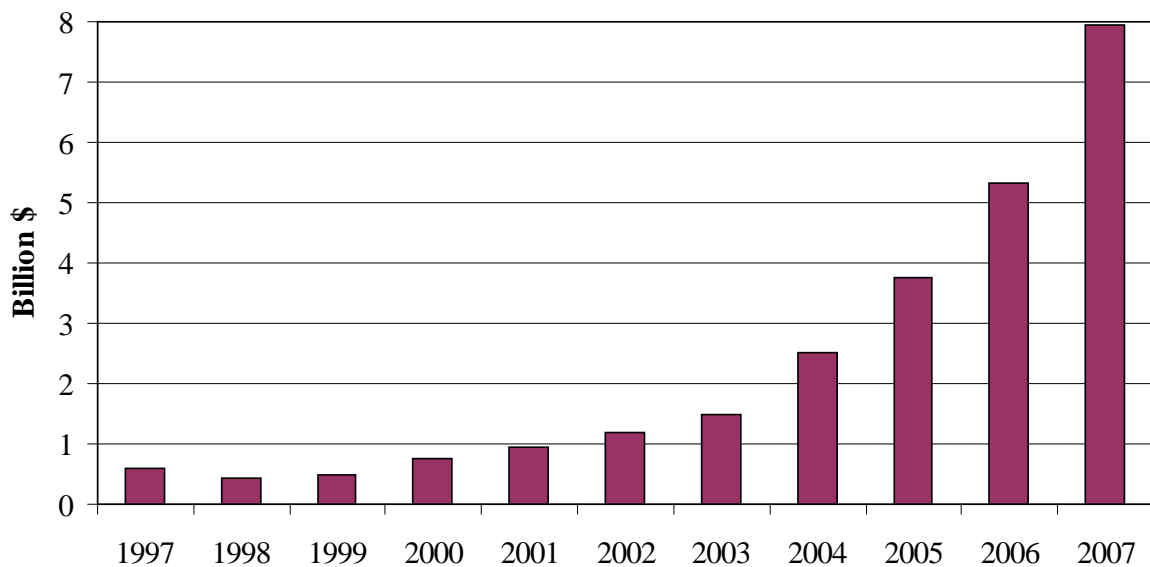


Trade Value Development by Major Region, 1998, 2000 and 2006

Source: FAOStat, 2008.

In value terms, Asia imports twice what it exports – however, export values are growing rapidly, especially for China and some Southeast Asian countries (Figure 5). The rapid increase is nothing short of phenomenal, and is restructuring world trade of wood and paper products.

Figure 5



China's Wood and Paper Products Exports, 1997-2007

Note: Includes sawnwood, panels and paper, but not furniture.

Source: International WOOD MARKETS Group, based on Chinese Customs, 2008.

Even more remarkable, and with a significant impact on world trade and traditional production centers, are China's furniture exports, both wood and non-wood (Figure 6). In 2006 China overtook Italy as the largest exporter of furniture. While lower-priced furniture imports have benefited consumers around the world, fierce competition with domestic producers, such as in the United States, has led to a dramatic downsizing of furniture industries outside of China, with severe consequences on local economies and employment.

Figure 6



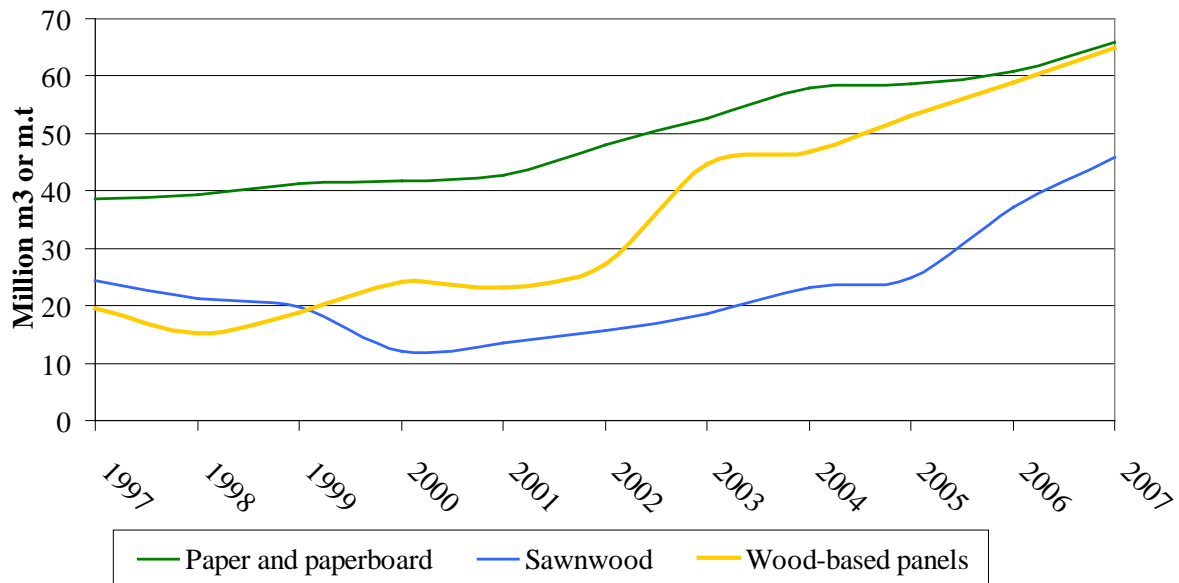
China's Wood and Non-Wood Furniture Exports, 1997-2007

Note: 2007 total furniture exports is an author estimate.

Sources: IBISWorld, 2008, and Tan, X. et al., 2007.

Concurrent with rapidly rising exports of wood products and other goods, China's gross domestic product (GDP) and gross national income (GNI) have been growing annually by over 10%, translating to marked increases in domestic consumption of all kinds of goods, including forest products (Figure 7).

Figure 7



China's Forest Products Consumption, 1997-2007

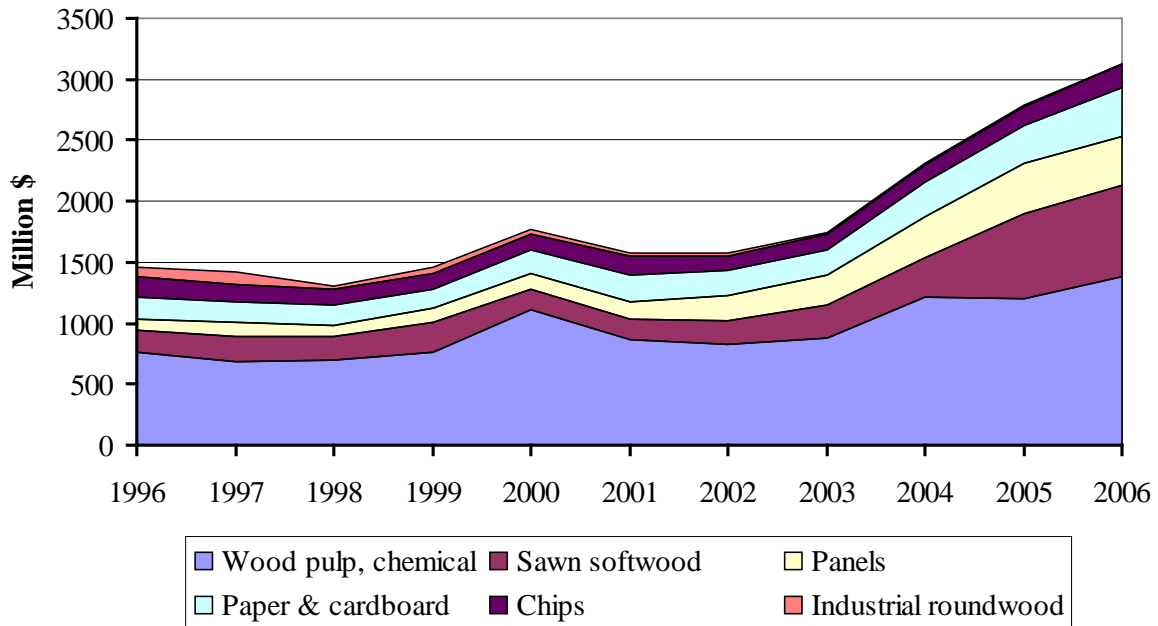
Note: 2007 apparent consumption is a secretariat estimate.

Sources: FAOSTAT, 2008 and Tan, X. et al., 2007.

South American exporters are increasingly influencing global markets, in part through exports of plantation-grown wood. Conversion of natural forests to plantations is controversial, especially in light of the Intergovernmental Panel on Climate Change findings that 17% of global manmade carbon emissions stem from deforestation and other unsustainable forest management practices (IPCC, 2007). Conversion of natural forests to monocultures also reduces biodiversity. Nevertheless, intensively-managed, rapid-growing forests can produce substantial volumes of oxygen and wood from relatively small geographic areas, providing a valuable resource for manufacturing wood and paper products.

Chile provides an example of a country that is rapidly progressing from a net exporter of wood raw materials, to an exporter of further processed wood and paper products. Chemical wood pulp is Chile's main export, growing by over 80% in the last decade, and totaling \$1.4 billion in value in 2006 (Figure 8) (FAO, 2008). This was about twice the sawn softwood value, which tripled in the last 10 years to reach \$740 million in 2006. Conversely, exports of industrial roundwood fell by 90% as they were converted into more valuable products for both export and domestic consumption.

Figure 8



Chile's Exports of Wood and Paper Products, 1996-2006

Source: FAOStat, 2008.

Chile exports its products to a multitude of destinations. For example, the largest destination for sawn softwood is the US, at \$1.6 billion in 2006, followed by Mexico at \$1.0 billion, Japan at \$493 million, Spain at \$261 million, United Arab Emirates at \$200 million, China at \$159 million, and over 40 other countries (FAO, 2008). The US has long been a net importer of forest products, including sawn softwood. Trade restrictions, such as the US-Canada Softwood Lumber Agreement, opened the door for exporters such as Chile, especially given that such restrictions resulted in attractive, higher prices.

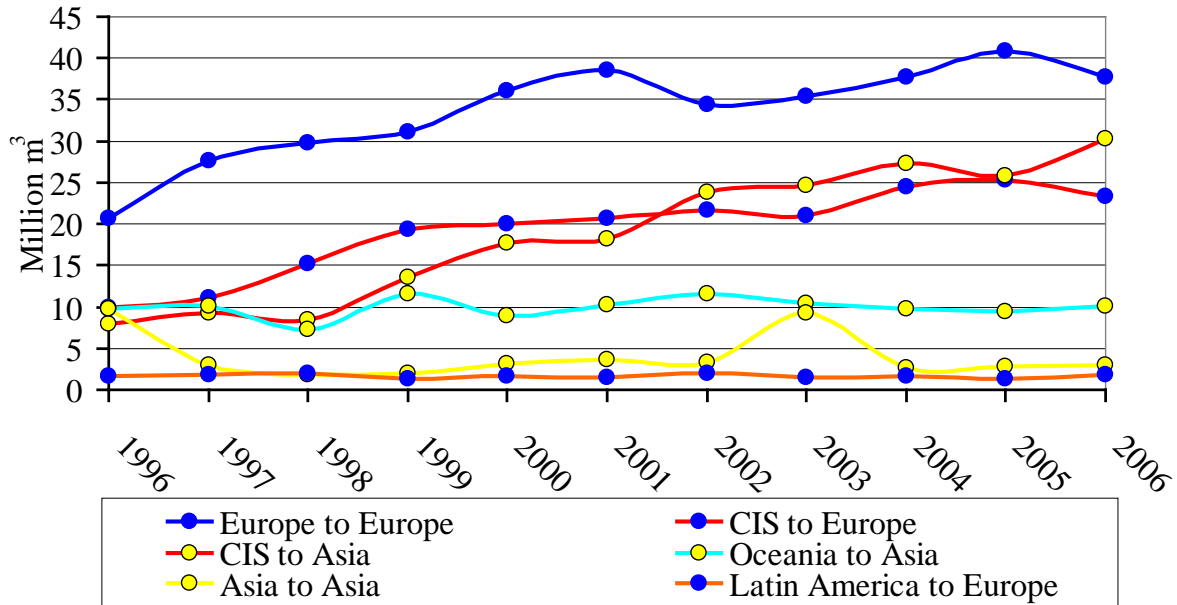
In Latin America, Chile ranks second in forest products export value behind Brazil. Brazil's exports of forest products, of which 67% were pulp and paper, were valued at \$5.6 billion in 2006 (FAO, 2008). That year Chile's exports were \$3.2 billion, although less pulp and paper, at 57% of total exports. For reference, in 2006, total forest products export values for other Latin American countries were \$552 million for Argentina and \$237 million for Uruguay. These countries, with the major exception of Uruguay, show the normal trend of development of the forest sector, with decreasing log exports, and increasing value-added exports. In Uruguay, while sawnwood exports doubled in the past 10 years, roundwood exports tripled. Uruguay's exports from fast-growing eucalyptus plantations are in the form of pulpwood and chips, and could increase with maturing plantations from the mid-1990s.

Chile's relatively high exports appear even more astonishing when compared to their forest area relative to other Latin American exporters. Chile's forests occupy 21.5% of the country for a total of approximately 16.1 million hectares (FAO, 2005). For comparison, Brazil has the largest forestland in South America, occupying 57.2% of the country, for 477.7 million hectares. However, Chile's forests are managed 20 times more intensively in terms of export volumes, in comparison to Brazil (ratio of export value to forestland). This comparison is not completely fair, as the domestic consumption is approximately 3 times greater in Brazil, with its population of 178.7 million, compared to Chile's, with a smaller population of 16.0 million (FAO, 2007). Nevertheless, the point is simply that Chilean forests are managed intensively.

3. Trade Flow Trends

The direction of trade from producing to consuming region has changed dramatically over the past decade for many different products. Industrial roundwood serves as an example for this analysis. European trade of roundwood has doubled, from 20 million m³ in 1996, to approximately 40 million m³ in 2006, and represents the most important trade flow globally in volume terms (Figure 9) (UN Comtrade/EFI, 2008).

Figure 9

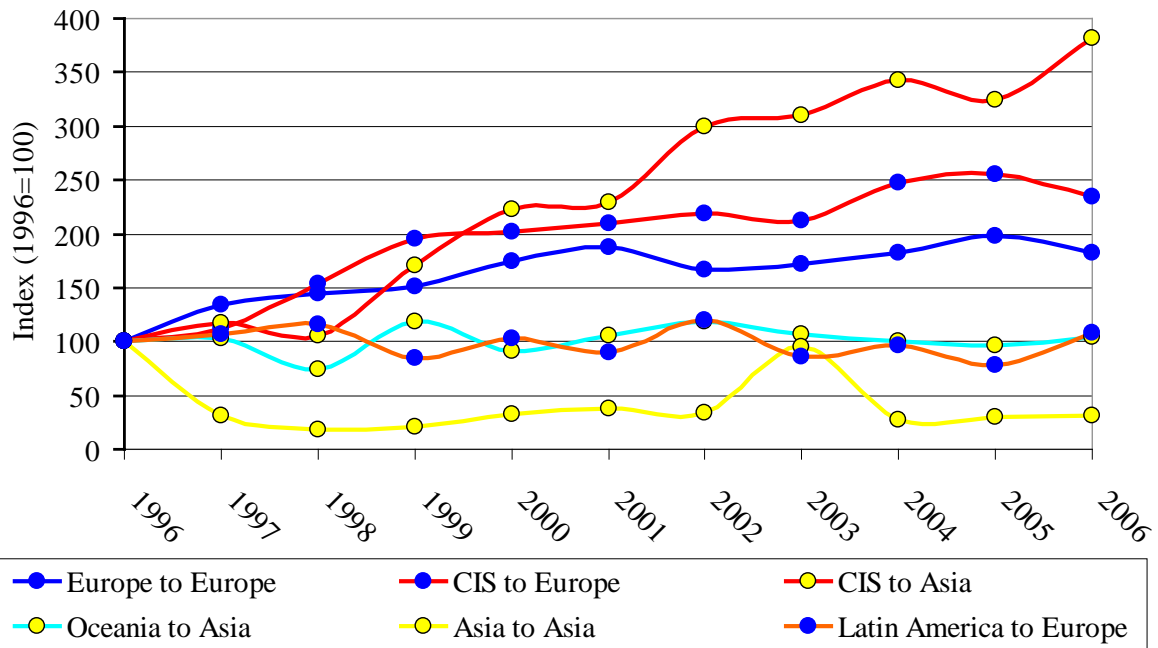


Industrial Roundwood Trade Flows, Six Major Global Flows, by Volume, 1996-2006

Source: UN Comtrade with European Forest Institute validation, 2008.

The burgeoning trade of roundwood from CIS countries, predominantly Russia, to Asia destinations, predominantly China, is second, and has been expanding faster (Figure 10).

Figure 10



Industrial Roundwood Trade Flows, Six Major Global Flows Indexed from 1996, 1996-2006

Source: UN Comtrade with European Forest Institute validation, 2008.

4. Forces Affecting Trade

Demand for wood and paper is directly linked to socio-economic factors including increases in populations, GDP and purchasing power and thus global growth will occur in the long term. Fluctuations in currency exchange rates, especially the weakening of the US dollar against the other currencies for forest products trade, have caused severe distortion in the global market place over the past two years. In the near term, and perhaps through 2010, economic factors are likely to have a major influence as problems in the US housing market continue to disrupt international trade. As this paper is drafted, a banking crisis erupted in the US, which has had far-reaching impact on foreign banks holding US-based home mortgages. The prospect of declining raw material availability from Russia will also significantly impact trade patterns.

Green building programs are already having an impact, although not always positively for wood; however they could promote the use of wood in cultures where wood is not a major building material now. Green building systems which recognize sustainably produced wood from any source are key for new construction and renovation.

Another factor that is gaining importance as a driver of wood consumption and trade is environmental and social awareness. Realization that government, corporate, and organizations' purchases can have a direct effect on sustainable forest management has led to increasing procurement policies and social responsibility programs focused on consumption of responsibly produced wood.

Climate change is currently a major issue receiving growing recognition at the international, national and local level. Attention to climate change issues is likely to emerge as another such driver. The forest sector is poised to contribute positively to mitigating climate change and

sequestration of carbon in forests and wood and paper products. However, as mentioned above, deforestation continues in some tropical forests, generating atmospheric carbon and creating a negative image for the sector, especially as a net 7.3 million hectares of forestland are lost annually according to the most recent FAO Global Forest Resources Assessment (FAO, 2005). (“Net 7.3” because total forest loss was 13 million hectares, but expansion of plantations and natural forests significantly reduced the net loss of forest area.) South America suffered the largest net loss of forests from 2000 to 2005, at approximately 4.3 million hectares per year, slightly above Africa’s loss of 4.0 million hectares per year.

In the UNECE region, the area of forests continues to expand slowly; however, the volume of wood within forests is increasing (MCPFE/UNECE/FAO, 2007). For the three UNECE subregions, in the North American subregion, approximately 80% of annual growth was harvested in 2005, 60% in the European subregion, and as mentioned above, 20% in the CIS subregion. Harvesting less than the annual increment means that the unharvested trees continue to grow, and the region’s forests have been increasing in volume.

Environmental awareness and the need to halt deforestation, in large part to mitigate climate change, may lead to less area of forests available for wood supply. There is growing pressure to avoid conversion of natural forests to plantations, in part for conservation of biodiversity.

5. Future Prospects

The forest sector is poised to contribute positively to mitigating climate change and sequestration of carbon in forests and wood and paper products. Sustainable, wood-based energy has tremendous possibilities to substitute for fossil fuels. Government policies have been established to promote renewable energy sources, for example the European Union has a target of 20% renewable energy by 2020, coupled with a 20% increase in energy efficiency. This ambitious goal is being implemented by the 27 EU members, resulting in escalating wood energy demand. The demand is currently being met from European sources, and imports as far away as British Columbia, Canada, where salvage of mountain pine beetle-killed lodgepole pine is being palletized and shipped to Europe. Within Europe, demand for low-grade, small-diameter roundwood for energy competes directly with industrial demand for panel and pulp production. Rising bio-energy demand puts into question the future availability of future wood for traditional wood and paper products, and will necessitate mobilization of more wood from forests and other sources to maintain an affordable stream of supply.

Promotion of wood and paper products as sustainably produced, energy-efficient products is having success in regaining market share in some countries over competing materials such as metal, plastic and concrete. Continuing research and development are essential to provide affordable wood fiber-based products for current and future needs. Promotional campaigns are necessary to inform consumers of the advantages of wood and paper products, including their sustainable production and recyclability. Positive, factual messages are necessary to overcome misperceptions of deforestation and illegal logging and trade. Whether promotion and dissemination of positive, factual messages will in the long run overcome negative aspects and serve to increase wood markets remains to be seen.

In the long term, trade patterns are likely to stabilize, with continued growth as wood and paper consumption increases. Greater demand for wood and paper products will necessitate

more efficient use of trees – including tops and branches, harvesting of a greater proportion of annual growth, and continued genetic improvement of plantation species. Increased demand will also require greater efficiency in manufacturing and use, as well as full recovery of residues and byproducts. All of these future possibilities will have an influence on trade, and require adequate research and development.

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7. Acknowledgements

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