
China's Forest Product Imports and Exports 2006-2016: Trade Charts and Brief Analysis

Forest Trends

July 2017



About Forest Trends

Forest Trends works to conserve forests and other ecosystems through the creation and wide adoption of a broad range of environmental finance, markets and other payment and incentive mechanisms. Forest Trends does so by 1) providing transparent information on ecosystem values, finance, and markets through knowledge acquisition, analysis, and dissemination; 2) convening diverse coalitions, partners, and communities of practice to promote environmental values and advance development of new markets and payment mechanisms; and 3) demonstrating successful tools, standards, and models of innovative finance for conservation.

This report was released by Forest Trends' Forest Policy, Trade, and Finance program, which since 2000, has sought to create markets for legal forest products while supporting parallel transformations away from timber and other commodities sourced illegally and unsustainably from forest areas.

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Introduction

China's forest product (FP) imports hit an all-time high in 2016 at nearly 290 million cubic meters (m3) roundwood equivalent (RWE) by volume – nearly double China's FP imports in 2006, and an increase of seven percent since 2015. This includes all timber products as well as pulp and paper, from countries as varied as Papua New Guinea, Cameroon, the United States, and Europe. During this same time period, China's exports of forest products have decreased, indicating that more of the imported product is being consumed within China itself. This is in contrast to the 2000s, when China's exports of forest products were also growing quickly, signaling that Chinese industrial demand was actually being fueled by export demand -- from countries such as the United States and Europe (Figure 1).

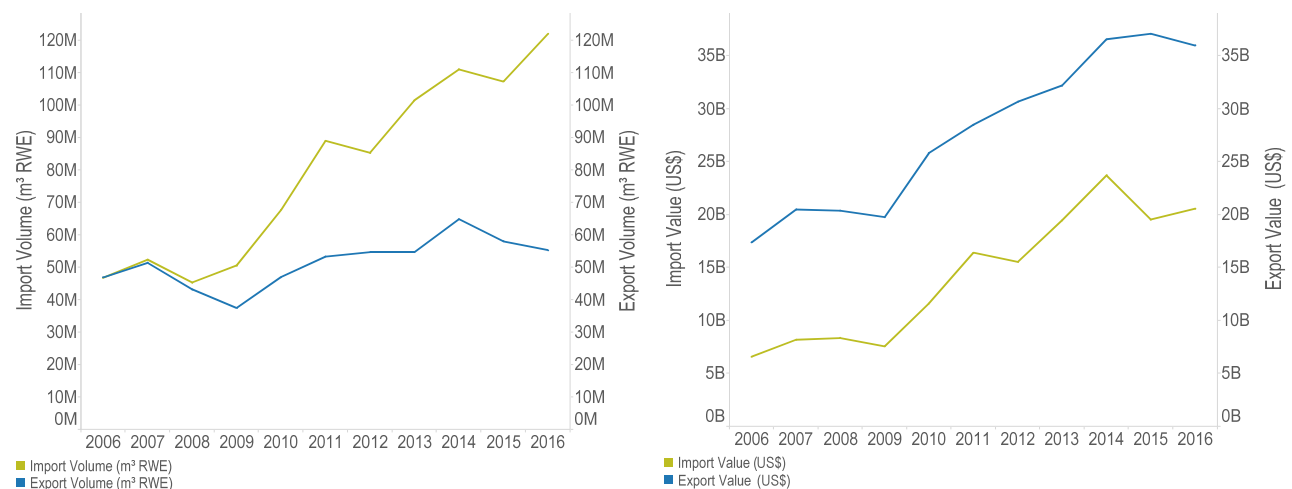
Regardless of ultimate destination for forest products, China's ever-growing demand impacts the way forests are being used, managed, and commodified in tropical forested countries. Many of the countries supplying Chinese markets with forest products are at high risk for poor governance and corrupt institutions which are associated with high levels of illegal logging and broader land clearing.

On the demand side, export-oriented enterprises in China are increasingly vocal about the support they need to ensure their products meet the requirements of buyers who need to comply with legislation requiring imports of only legally-harvested timber, most notably under the Lacey Act in the United States, the EU Timber Regulation in Europe, the Illegal Logging Prohibition Act in Australia and, new legislation enacted in Japan and South Korea.

As the world's top importer and consumer of timber products, China is in a unique, and influential, position to take a leadership role to ensure that only legally and sustainably sourced timber – and other products sourced from forests – enters the country, thus helping to shift the global timber trade paradigm away from illegal sourcing and solidifying China's reputation as a country that acts decisively to combat environmental harm within and outside of its borders.

This report consists of a compendium of charts analyzing China's imports and exports of forest products. These charts have been compiled by Forest Trends using data from the General Administration of Customs, People's Republic of China and building off previous trade analyses conducted by Forest Trends.

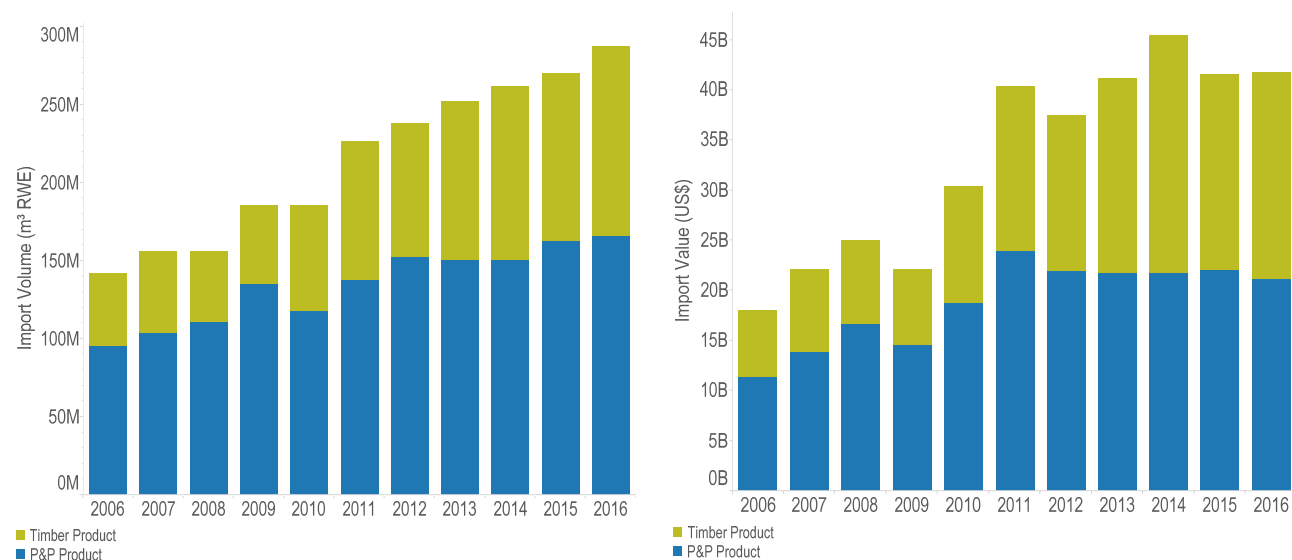
Figure 1: Timber Product Imports vs. Exports (2006-2016)



China's growing reliance on imported timber is illustrated above, with import volumes reaching double the level of exports in 2016 (122 million m³ RWE to 55 million m³ RWE). By value, exports have grown from approximately US\$17 billion in 2006, peaking at US\$37 billion in 2015, and declining slightly in 2016; export values outweigh import values by 40 percent.

Imports: Total Forest Products

Figure 2: China's Total Forest Product Imports (2006-2016)



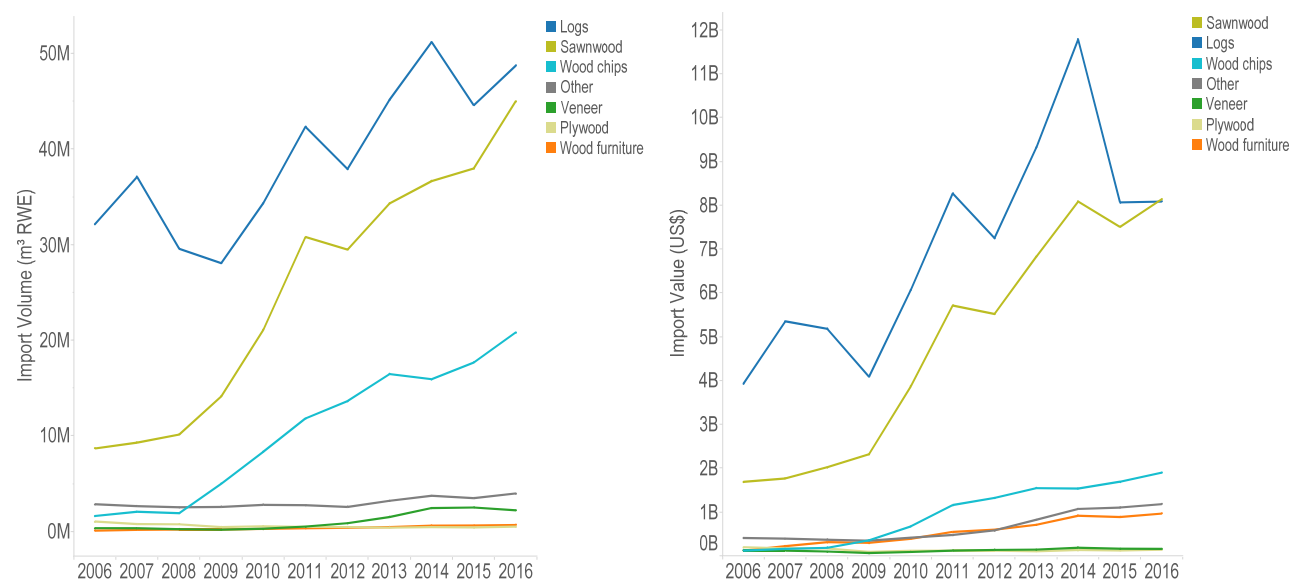
China's forest product (FP) imports, including both timber products and pulp and paper (P&P), doubled between 2006 and 2016, hitting an all-time high in 2016 of nearly 290 million m³ roundwood equivalent (RWE) by volume (Figure 2). This marks a year-over-year increase of seven percent between 2015 and 2016. By value, China's FP imports have dipped slightly since their 2014 peak to US\$41 billion, but still increased by over 130 percent from 2006 to 2016.

In 2016, pulp and paper (P&P) products comprised 58 percent of China's FP imports by volume, and 51 percent by value. Timber products (TP) comprised 42 percent and 49 percent by value and volume, respectively. This ratio has been fairly balanced since 2011.

The comparison of TP imports by volume and by value (increasing total volume while total value decreases) illustrates a subtle shift towards imports of less expensive wood materials.

Imports: Timber Products

Figure 3: China's Timber Product Imports (2006-2016)



When looking specifically at timber products only, greater detail on the imports of timber products can be seen. In 2016, China imported 122 million m3 RWE of timber products. 94 percent of these were in log, sawnwood, or woodchip form.

In 2016, China imported 49 million m3 RWE of logs (valued at just over US\$8 billion), recovering slightly from 2015 levels by volume but remaining below 2014 levels. By value, log imports have stayed flat, amounting to US\$8 billion in both 2015 and 2016.

The proportion of timber products imported by China in log form has gradually declined over the past decade, from 71 percent to 40 percent – likely due to many of China's largest suppliers now implementing log export bans or taxes (Russia, Myanmar, Laos to name a few).

Sawnwood now amounts to 37 percent of China's total timber product imports. China imported an all-time high of 45 million m3 RWE of sawnwood in 2016 (valued at US\$8.1 billion) – a growth of 420 percent by volume over the past decade, and by 19 percent in the past year alone. Russia and Canada are China's largest suppliers of softwood sawnwood, while Thailand and the US supply the majority of hardwood sawnwood.

Woodchips now amount to 17 percent of China's total timber product imports. China imported nearly 21 million m3 RWE of wood chips (valued at US\$1.9 billion) – a growth of 1,200 percent by volume and 1,500 percent by value over the past decade. Wood chips, primarily hardwood species such as eucalyptus and/or acacia and have been sourced largely from Vietnam and Australia.

Imports: Logs

Figure 4: China's Hardwood vs. Softwood Log Imports (2006-2016)

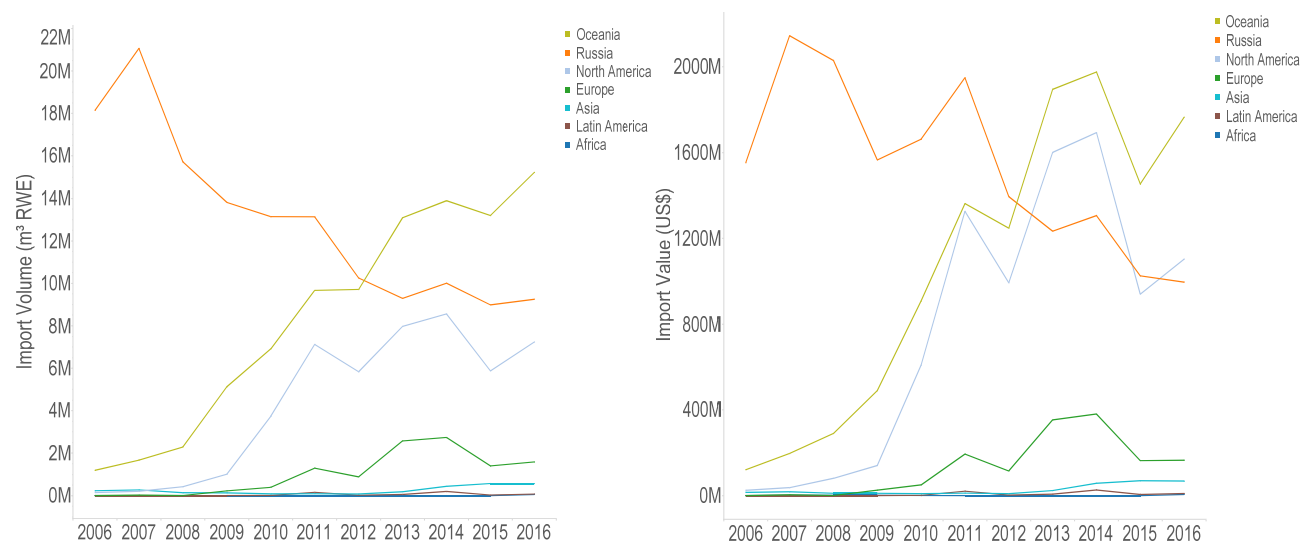


Hardwood log imports comprise 30 percent of China's total log imports by volume, but 49 percent by value. Softwood log imports comprise 70 percent of China's total log imports by volume, and 51 percent by value. This ratio has held relatively steady since 2009.

While the volume of hardwood log imports has remained relatively steady, gradually increasing between 10 and 15 million m3 RWE since 2010, the value dropped 37 percent between 2014 and 2016. This suggests that China is importing fewer high-value hardwood species and a larger ratio of mid- to lower-value species, in log form. In absolute terms, softwood log imports also dropped by around one quarter by value between 2014 and 2016.

Whereas in 2006, China imported a large share of raw logs from Asian markets (21 percent of its hardwood log imports, by volume) and from Europe (92 percent of its softwood log imports and 70 percent of hardwoods, by volume), imports from these regions relative to others have decreased while imports from North America, Latin America, Africa, and Oceania, have risen.

Figure 5: China's Softwood Log Imports by Region (2006-2016)



In 2013, Oceania (mainly Australia and New Zealand) surpassed Russia as China's top regional supplier of softwood logs. China imported over 15 million m3 RWE from Oceania in 2016, valued at US\$1.8 billion. Nearly 100 percent of these imports, however, were sourced from Australia and, mainly, New Zealand's growing plantation sectors, and are considered low risk with regards to legality and sustainability criteria.

North America's market share of China's softwood log imports has also grown considerably. Together, China imported over 7 million m3 RWE of softwood logs from the US and Canada, up from just 146,000 m3 RWE a decade earlier.

Imports of softwood logs from Russia have declined rapidly since their peak in 2007, when Russia supplied 90 percent of China's total softwood log imports and before Russia instituted a hefty log export tax.

Imports: Hardwood Logs

Figure 6: China's Hardwood Log Imports by Region (2006-2016)

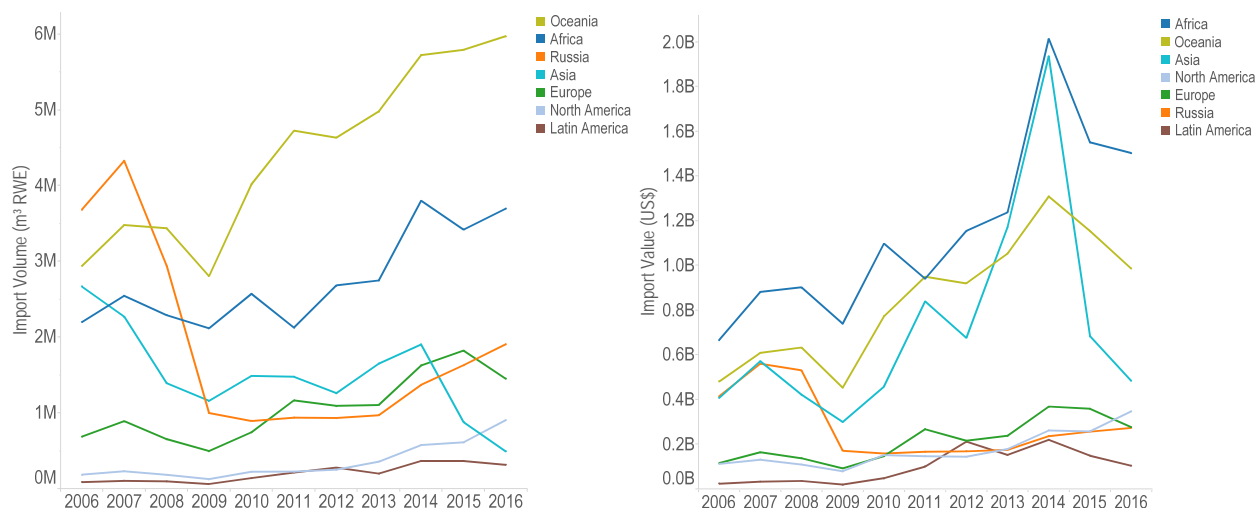
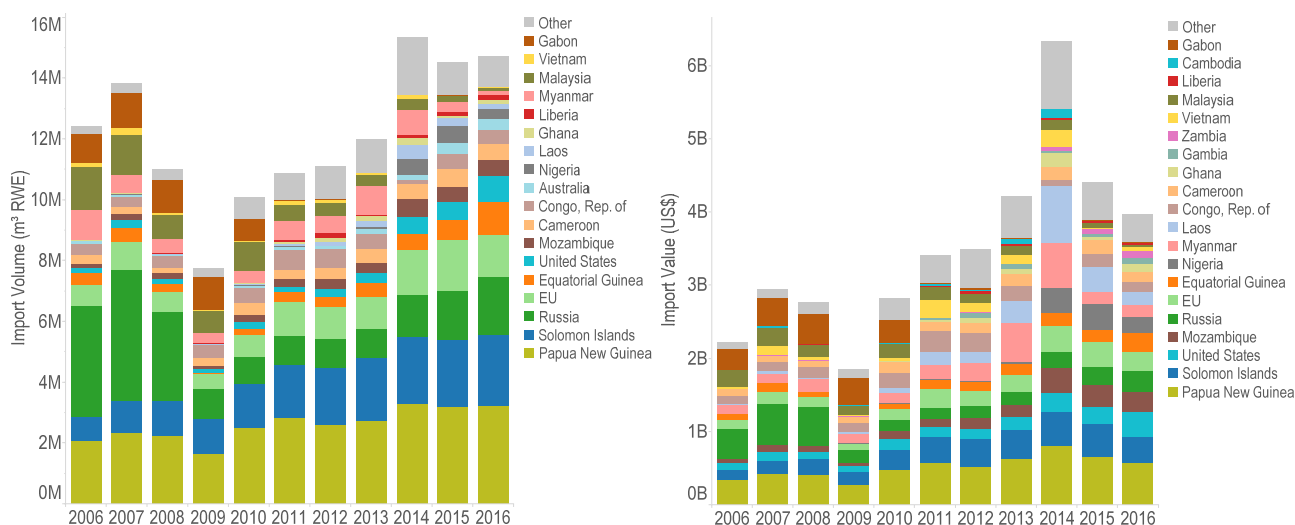


Figure 7: China's Hardwood Log Imports by Source Country (2006-2016)



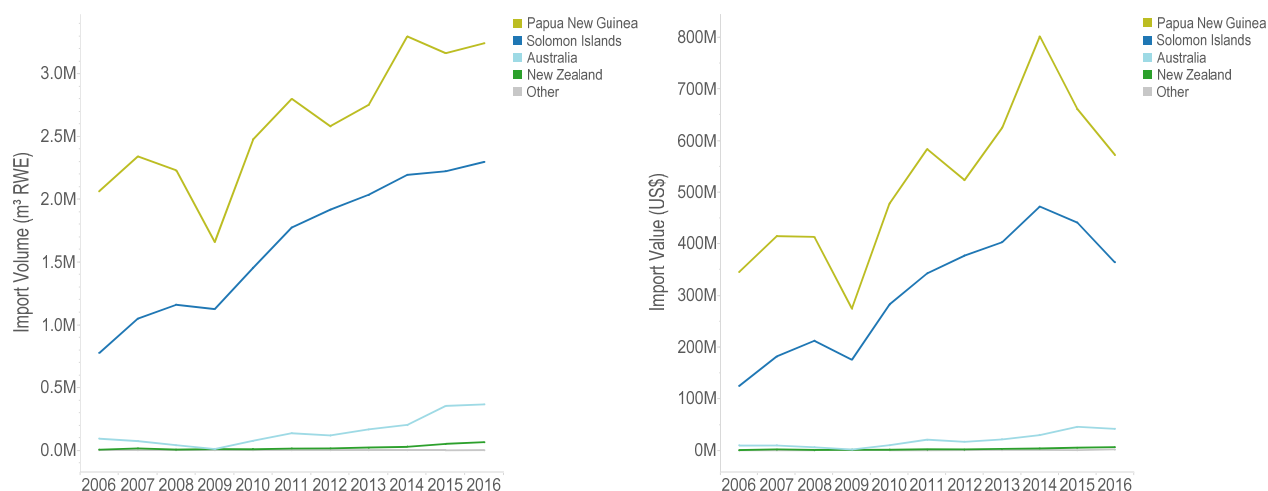
Oceania (mainly Papua New Guinea [PNG] and the Solomon Islands) is now the dominant source of China's hardwood log imports by volume, supplying 5.97 million m3 RWE in 2016 (valued at \$985 million). PNG remains China's largest source of hardwood logs, supplying 22 percent of total imports by volume (and 14 percent by value) with levels remaining relatively steady since 2011. The Solomon Islands are China's second largest source, supplying 16 percent of hardwood log imports by volume and 9 percent by value.

In 2016, only seven percent of China's hardwood log imports were from Asian countries. In contrast, Africa supplies one fifth of China's hardwood log imports.

Several countries that were major suppliers of logs to China in the 2000s declined to near zero exports to China by 2016. These include Malaysia (much of the 2000s), Gabon (1999 until the imposition of a log export ban in 2010),

Liberia (2000-2003, prior to UN-imposed sanctions), Myanmar (much of the two-decade period leading up to a 2014 log export ban), and others. Other countries that had few to no exports of hardwood logs to China a decade ago, are now major suppliers – including Laos, Nigeria, Equatorial Guinea, and the Solomon Islands.

Figure 8: Hardwood Log Imports from Oceania by Source Country (2006-2016)

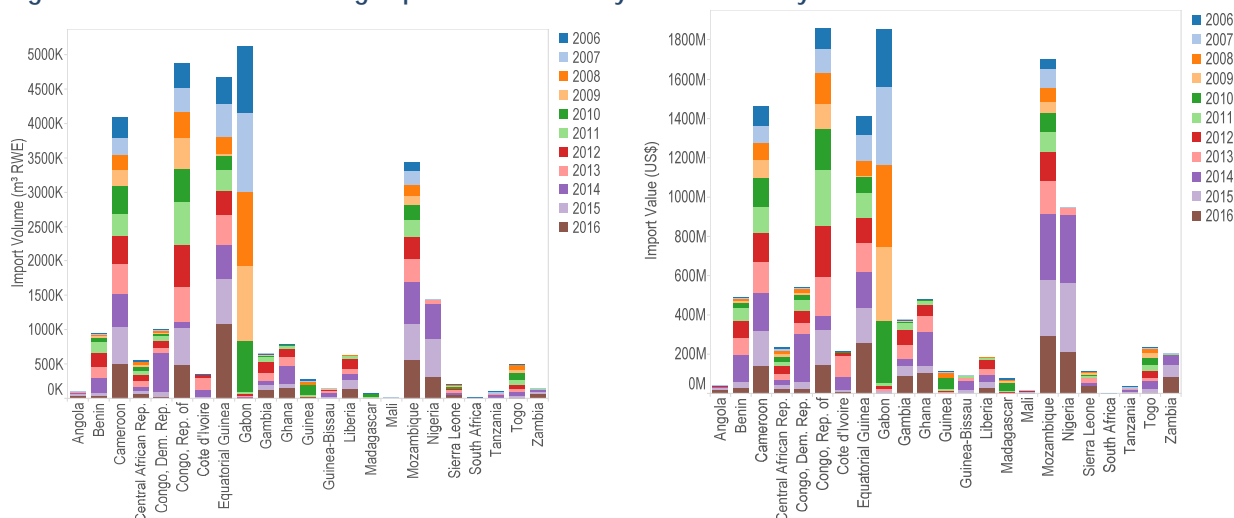


The sharp decline in hardwood log imports by value, but not by volume, is illustrated in the case of PNG and the Solomon Islands, which together make up nearly a third of China's hardwood log imports.

The price per unit of hardwood logs from both PNG and the Solomon Islands has decreased across species, including those processed into high-priced flooring. This may reflect a broader market change, as demand from China has decreased following the economic slowdown in 2014-2015.

While PNG and the Solomon Islands are considered high-risk in terms of illegal harvesting and trade, hardwoods from Australia and New Zealand are increasingly sourced from plantations, and therefore are considered low risk from legality and sustainability criteria.

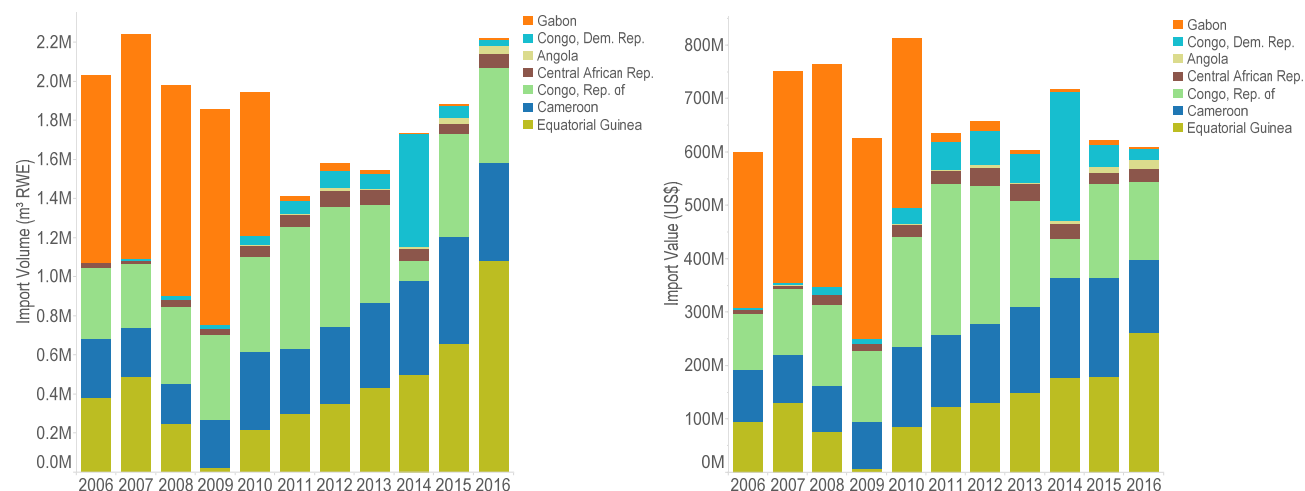
Figure 9: China's Hardwood Log Imports from Africa by Source Country¹



¹ Includes all countries that exported 5,000 m³ or more of hardwood logs to China from 2006 to 2016

China's five largest suppliers of hardwood logs from Africa are Equatorial Guinea, Mozambique, Cameroon, Republic of Congo, and Nigeria. In total, from 2006 to 2016 Gabon exported more hardwood logs to China than any other country in Africa, despite virtually ceasing all exports in 2011. During this period the Republic of Congo, Mozambique, Cameroon, and Equatorial Guinea also exported over 3 million m³ (over US\$1 billion) each of hardwood logs to China

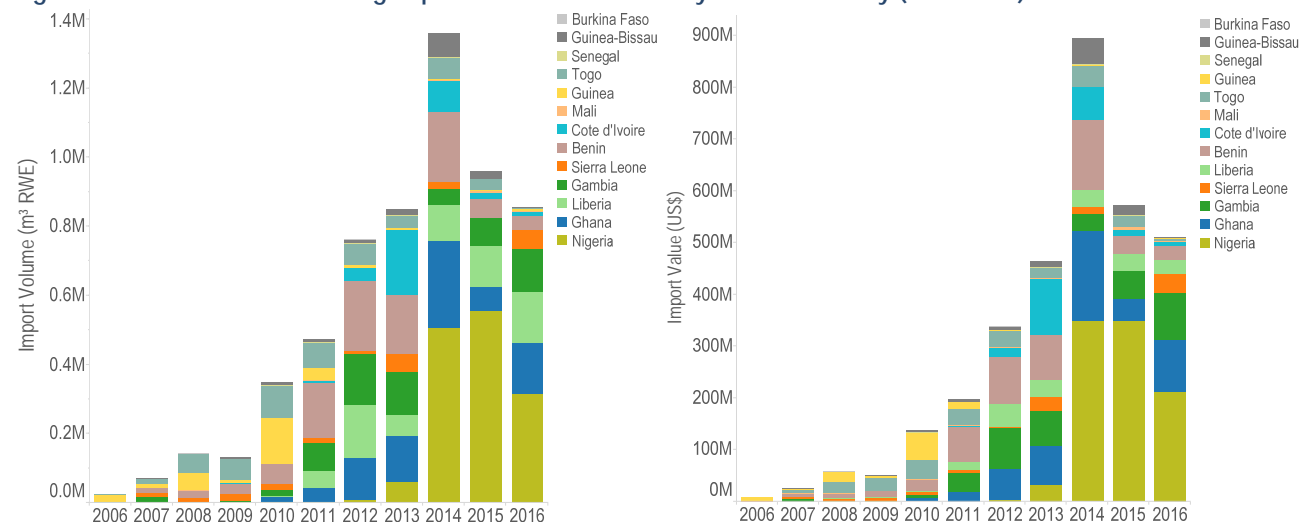
Figure 10: China's Hardwood Log Imports from Central Africa by Source Country (2006-2016)



Of the 3.7 million m³ RWE of hardwood logs imported in 2016 from Africa – valued at over US\$1.5 billion – 60 percent were from Central Africa (Congo Basin), with an additional quarter of total African hardwood log imports from West Africa.

China's hardwood log imports from Central Africa, by volume, have steadily increased over the past four years, topping 2 million m³ RWE in 2016 for the first time since 2007. By value, however, imports have steadily declined since peaking in 2010 (with the exception of 2014). Here, one can also see a marked substitution effect, with imports from Gabon – historically the region's largest hardwood log exporter to China – dropping precipitously following the 2010 logging ban, and other countries, including Cameroon, the Democratic Republic of Congo, and Equatorial Guinea, exporting more material.

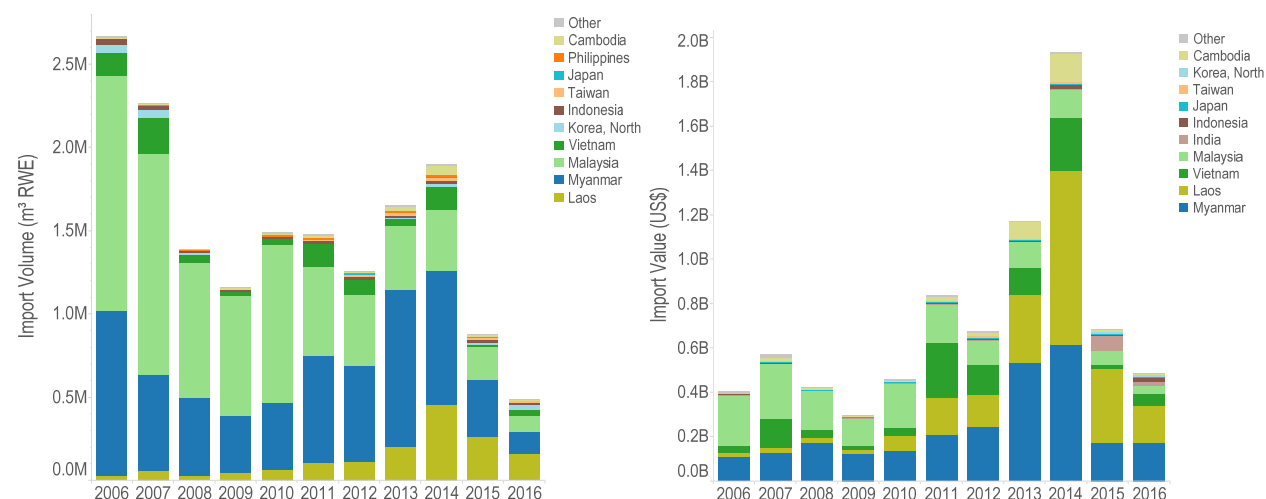
Figure 11: China's Hardwood Log Imports from West Africa by Source Country (2006-2016)



By value, the share of China's hardwood log imports from West Africa, as compared to other African sub-regions, was far larger by value than volume. This is due to high-value species such as *Pterocarpus erinaceus* (also known as vène, kosso, or African rosewood, among other names), recently in high demand.

A boom in hardwood log imports in 2014-15 – the majority of which were *P. erinaceus* – turned Nigeria into China's third-largest supplier of hardwood logs by value, and seventh-largest by volume, among all supplier countries. However, in 2016, hardwood log imports from Nigeria declined, and in September the species was listed on Appendix II of CITES.

Figure 12: China's Hardwood Log Imports from Asia by Source Country (2006-2016)

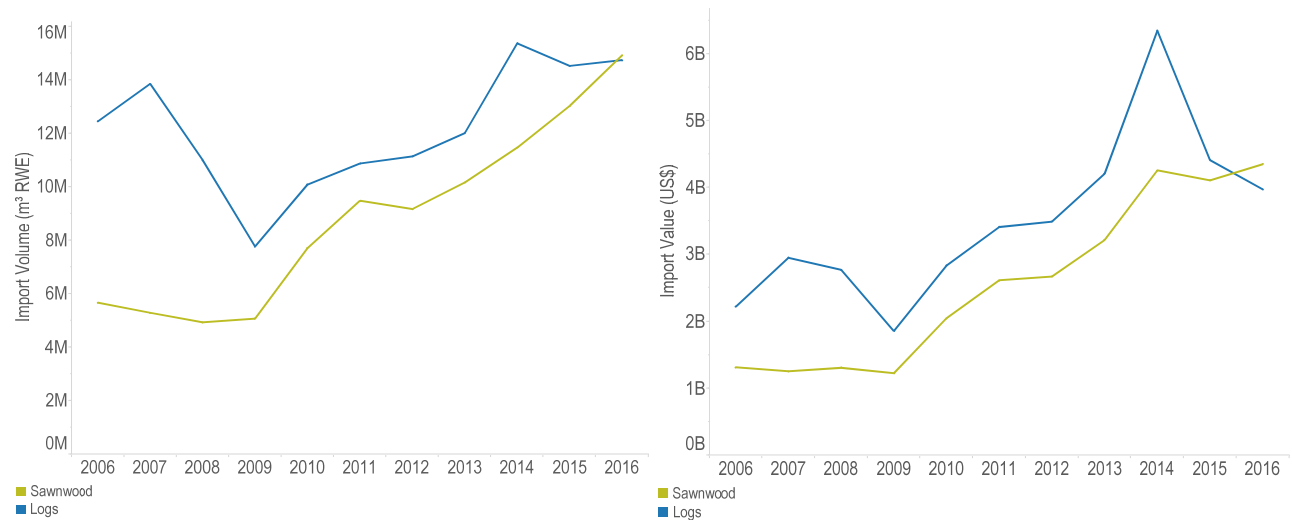


In Asia, the dramatic uptick in high-value log imports from 2012 to 2014, and its subsequent drop of over 60 percent by value in 2015 can be attributed to China's shifting demand for rosewood species from the Mekong region to West Africa due to decades of over-harvesting key species in Cambodia, Laos, Vietnam, and Thailand. China's demand for rosewood subsequently dropped in 2015 and again in 2016 due to the economic slowdown as well as stockpiling of surplus imports in 2013 and 2014.

The decline in imports of hardwood logs from China's two largest suppliers in the Asia region, Myanmar and Laos, can be further linked to prohibitions on log exports issued in April 2014 (Myanmar) and August 2015 and May 2016 (Laos) that aim to control high deforestation rates and incentivize domestic production industries.

Imports: Logs vs. Sawnwood

Figure 13: China's Hardwood Log vs. Hardwood Sawnwood Imports (2006-2016)



In 2016, China imported 14.7 million m³ of hardwood logs (equivalent to US\$4 billion), and 14.9 million m³ RWE of hardwood in sawnwood form (equivalent to US\$4.3 billion).

This marks the first time that China's imports of hardwood sawnwood has surpassed those of hardwood logs (by volume and value). We speculate that this shift is due in part to the prevalence of log export bans implemented by producer countries. As mentioned above, these are meant to incentivize domestic production industries.

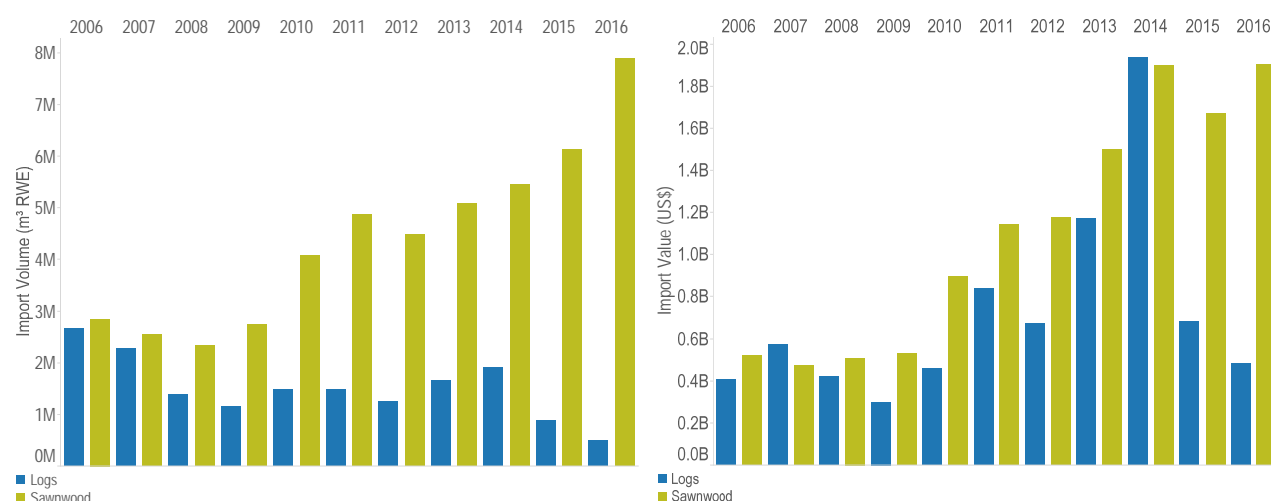
Figure 14: China's Softwood Log vs. Softwood Sawnwood Imports (2006-2016)



In 2016, China imported 34 million m³ of softwood logs (equivalent to US\$4 billion), and 30 million m³ RWE of softwood in sawnwood form (equivalent to US\$3.8 billion).

The relative proportion of softwood sawnwood imports to softwood log imports is growing, by both volume and value. In 2006, China imported over 500 times more softwood logs than softwood sawnwood, by volume. By 2016, this difference had decreased to just 13 percent.

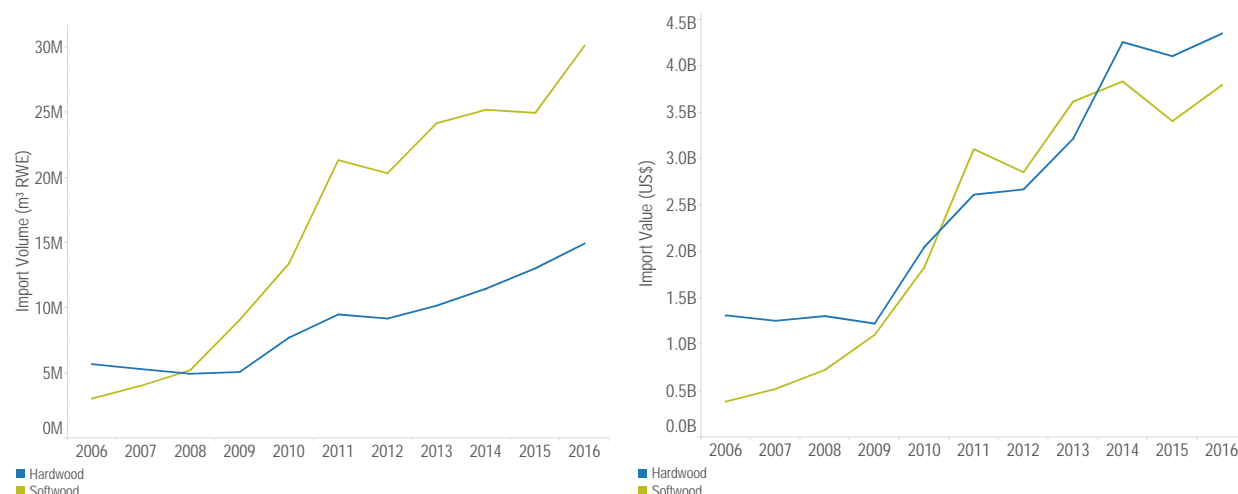
Figure 15: China's Hardwood Log vs. Hardwood Sawnwood Imports from Asia (2006-2016)



Juxtaposed with imports of hardwood logs from Asia, which have decreased by both volume and value, a substitution effect becomes clear. Since 2008, Asia's share of hardwood logs imported by China has been declining, while its corresponding share of hardwood sawnwood has increased. By value this divergence has been less pronounced.

Imports: Sawnwood

Figure 16: China's Hardwood vs. Softwood Sawnwood Imports (2006-2016)



China's total sawnwood imports grew by nearly a fifth in 2016, hitting an all-time high in of over 45 million m³ RWE in 2016.

By volume, China imports much more softwood than hardwood in sawnwood form, but hardwood sawnwood imports are more valuable – and, depending on their origin, carry a higher risk of illegality. In 2016, softwood accounted for two thirds of sawnwood imports by volume, but just 47 percent by value.

This was not always the case. Imports of softwood species in sawnwood form surpassed those of hardwood in 2008 by volume, and 2010 by value. A decade ago, hardwood species comprised over three quarters of China's sawnwood imports by value, and two thirds by volume.

Figure 17: China's Hardwood Sawnwood Imports by Source Region (2006-2016)

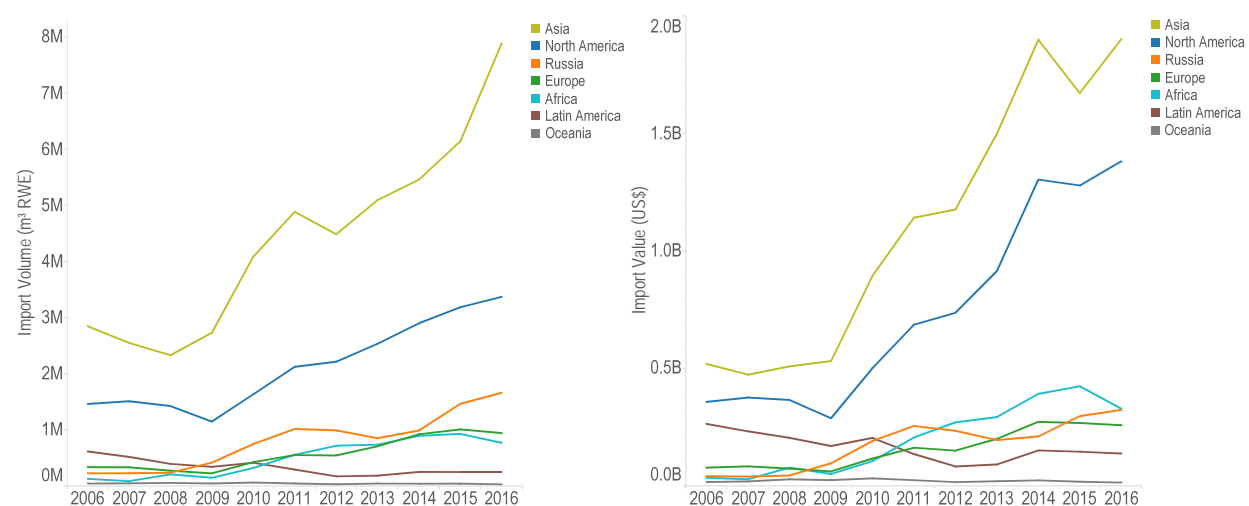
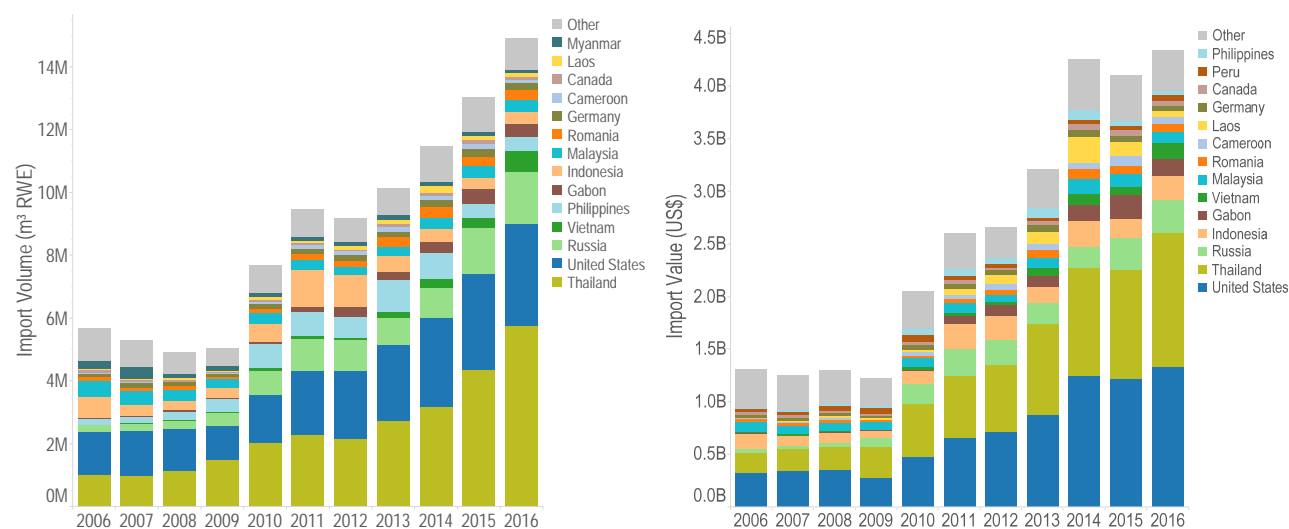


Figure 18: Chinese Hardwood Sawnwood Imports by Source Country (2006-2016)



Imports of hardwood sawnwood from Asia have quadrupled since 2006, reaching a high of 8 million m³ RWE in 2016 (valued at US\$1.9 billion). Thailand is China's top supplier of hardwood sawnwood by volume, while the United States is its largest supplier of hardwood sawnwood by value. In 2016, China imported 6 million m³ RWE of hardwood sawnwood from Thailand (valued at US\$1.27 billion), and 3 million m³ RWE from the US (valued at US\$1.33 billion).

Imports from North America were valued at US\$1.4 billion in 2016.

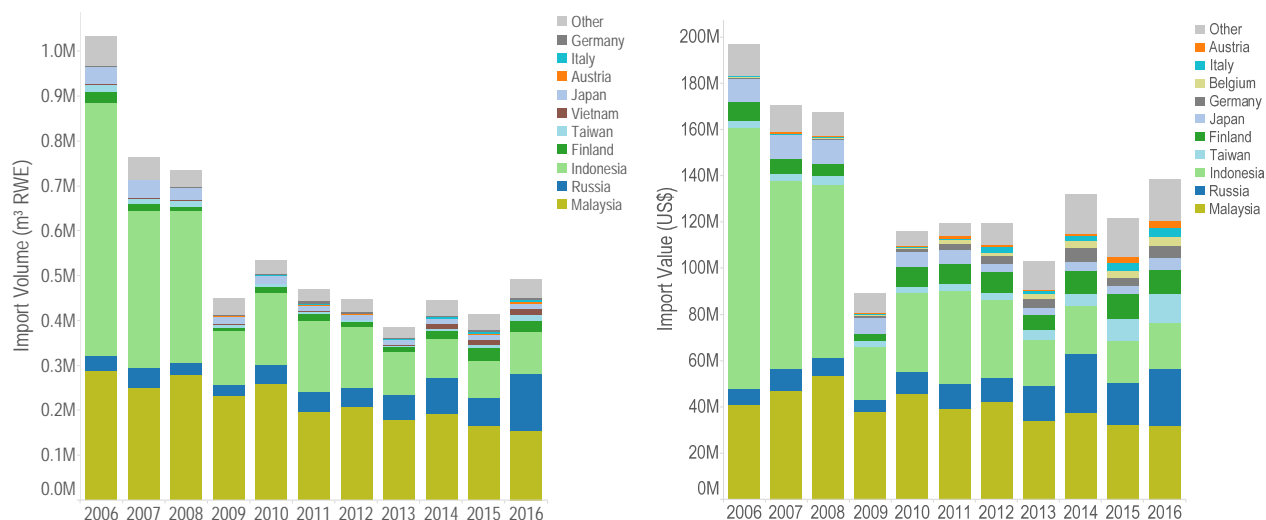
In recent years, Africa has also begun exporting high-value hardwood sawnwood to China, while China's imports of hardwood sawnwood from Latin America have declined. Between 2010 and 2015, following Gabon's log export ban, the country's hardwood sawnwood exports to China also increased by 850 percent by volume and 1,400 percent by value

Hardwood sawnwood imports from Russia (now China's third-largest supplier of this product) have increased by 600 percent since 2006, and nearly 100 percent since 2013. This may be due to regulations on the harvesting, measurement, transportation, and export of round logs instituted that year, which did not apply to sawnwood and other processed products.

Notably, while Oceania dominates China's hardwood log import log market, the region supplies very low volumes of hardwood sawnwood to China – and most hardwood sawnwood from the region is imported from Australia.

Imports: Plywood

Figure 19: Chinese Plywood Imports by Source Country (2006-2016)



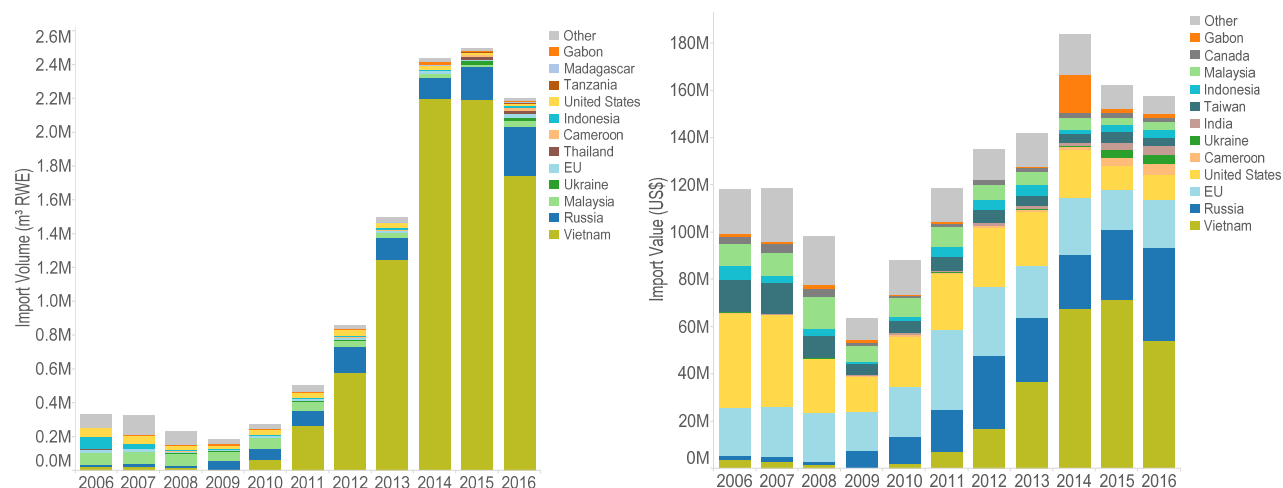
In the past decade, China's plywood imports have trended downward, declining by nearly 75 percent by volume and over 50 percent by value. In 2016, plywood imports amounted to less than 500,000 m³ RWE (valued at US\$138 million).

Malaysia, Russia, and Indonesia are China's largest plywood suppliers by both volume and value. Malaysia surpassed Indonesia as China's top supplier in 2009.

Plywood imports from Indonesia, however, have fallen nearly 100 percent: from 2.8 million m³ RWE in 2006 to just under 100,000 m³ in 2016. Indonesia officially began exporting FLEGT-licensed timber in late 2016 under the Indonesian legality system (SLVK).

Imports: Veneer

Figure 20: Chinese Veneer Imports by Source Country (2006-2016)

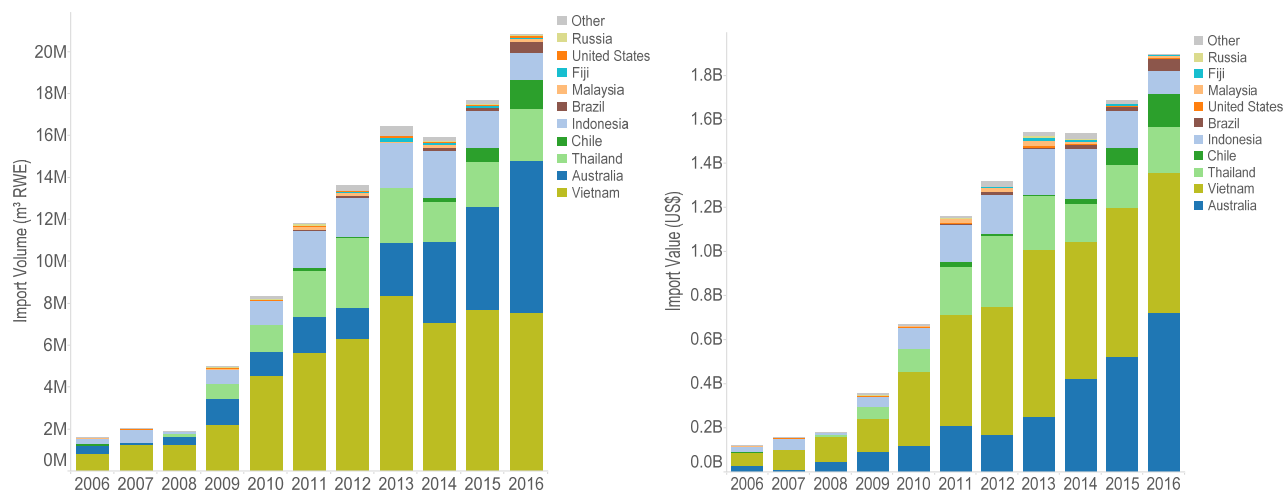


China's veneer imports hit an all-time high by volume in 2014, and by value in 2015. In 2016, China imported 2.2 million m³ RWE of veneer, valued at US\$158 million.

Nearly 80 percent of China's veneer imports by volume are sourced from Vietnam, which has recently emerged as a wood product manufacturing rival. However, higher value plywood was being sourced from Russia, the EU and the United States. By value, veneer imports from Vietnam comprised 35 percent of China's total in 2016, while those from Russia have increased steadily since 2008 and comprises nearly one-quarter of China's total veneer imports in 2016.

Imports: Wood Chips

Figure 21: Chinese Wood Chip Imports by Source Country (2006-2016)



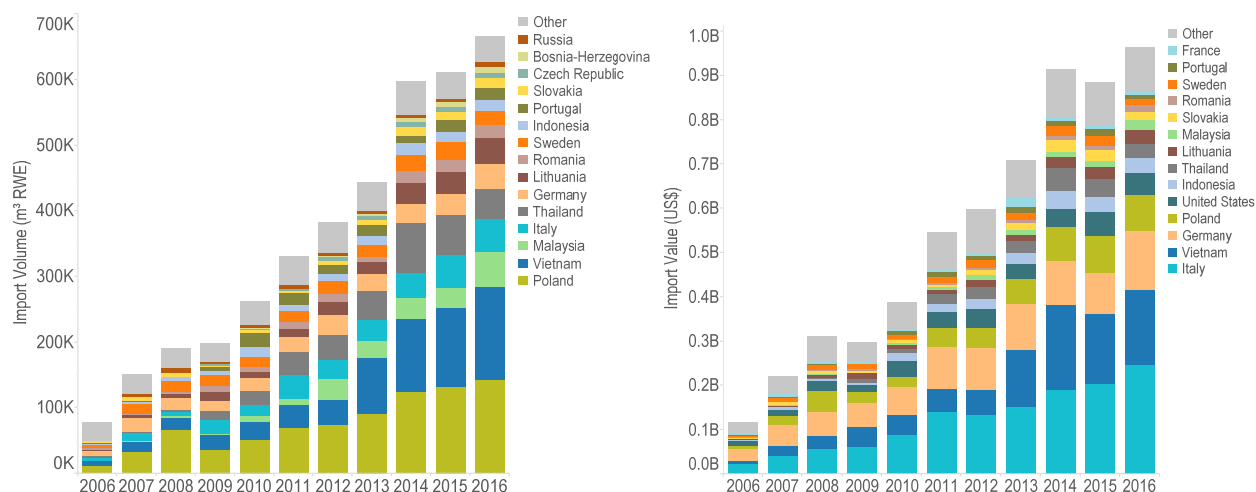
China's imports of wood chips increased by more than 1,250 since 2007, hitting an all-time high of 22 million m³ RWE (valued at over US\$1.8 billion).

Vietnam has consistently ranked as China's top supplier of wood chips. However, its share of China's total wood chip imports has decreased in recent years, due to growth in imports from the Australian wood chip industry. In 2016, Vietnam supplied 36 percent of China's total wood chip imports by volume and value, while Australia supplied 35 percent by volume and 38 percent by value.

Both the Vietnamese and Australian wood chip sectors source largely from commercial acacia and eucalyptus plantations, and can therefore generally considered relatively low-risk in terms of legal sourcing.

Imports: Furniture

Figure 22: Chinese Wood Furniture Imports by Source Country (2006-2016)



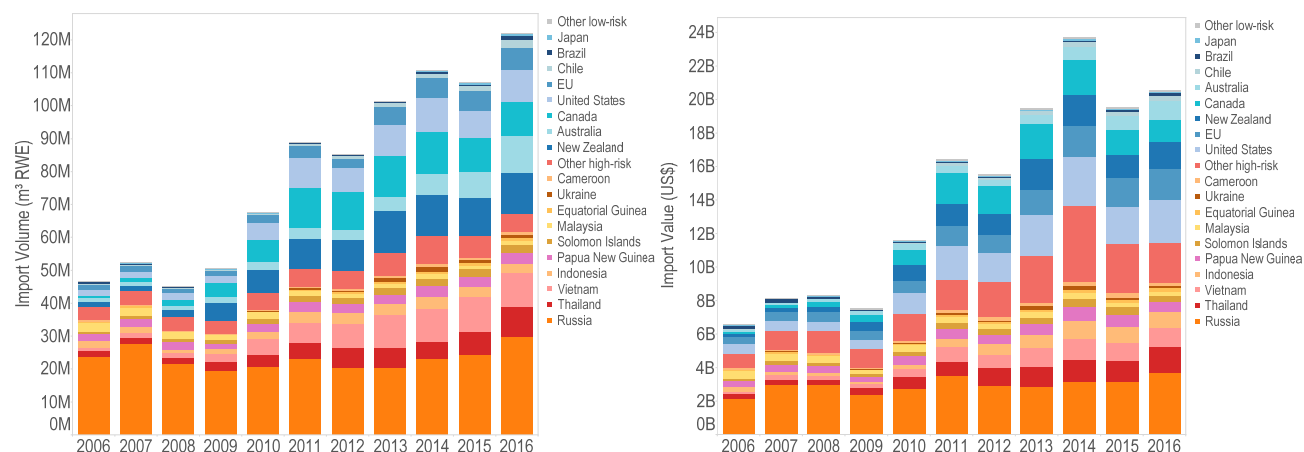
China's imports of wood furniture have increased eightfold since 2006, hitting a record 667,000 m³ RWE in 2016 (valued at nearly US\$1 billion).

Over half of China's wood furniture imports by volume, and over 60 percent by value, were sourced from EU member states. Poland dominates the EU furniture export market by volume, but Italy exports higher-value products. China's 2016 imports of wood furniture from Italy were valued at nearly US\$250 million). Imports from other Eastern European countries, such as Romania and Lithuania, have also increased.

Also worth noting is the increase in China's imports of Vietnamese furniture. Since 2006, Vietnam's furniture exports to China increased over 120-fold. While raw material for Vietnam's processing industry is now sourced from a variety of continents, Vietnamese furniture comprised of raw material sourced from neighboring Mekong countries, such as rosewood, will command higher prices in China, but is also higher risk.

Imports: Timber Products from Countries at High Risk for Illegality

Figure 23: Timber Product Imports by Country by Risk Level (2006-2016)



As new legislation in the global forest sector requires companies and governments to assess the risk of illegal wood entering supply chains, a new body of research is attempting to determine general levels of risk for forest-producing countries. Effective risk assessment requires knowledge of a number of factors, including levels of illicit harvesting in source countries and illegalities in trading/processing countries for wood products with complex supply chains, which are not always readily available. Forest Trends therefore uses the quality of national governance as an indicator of the likelihood of illegal logging or mixing of illegal wood into processed products, as it is generally accepted that factors such as the complicity of government officials in corruption, poor rule of law, reliability of chain of custody systems, and/or lack of capacity to enforce laws pertaining to timber harvesting and trade, all contribute to poor governance and, therefore, higher risk for illegality. In addition, while over 30 countries have enacted policies to restrict or prohibit the export of raw logs over the past several decades², companies around the world (including in China) are still importing logs from these countries. Log export bans are difficult to enforce for a number of reasons, yet enforcement failures are another indication of risk.

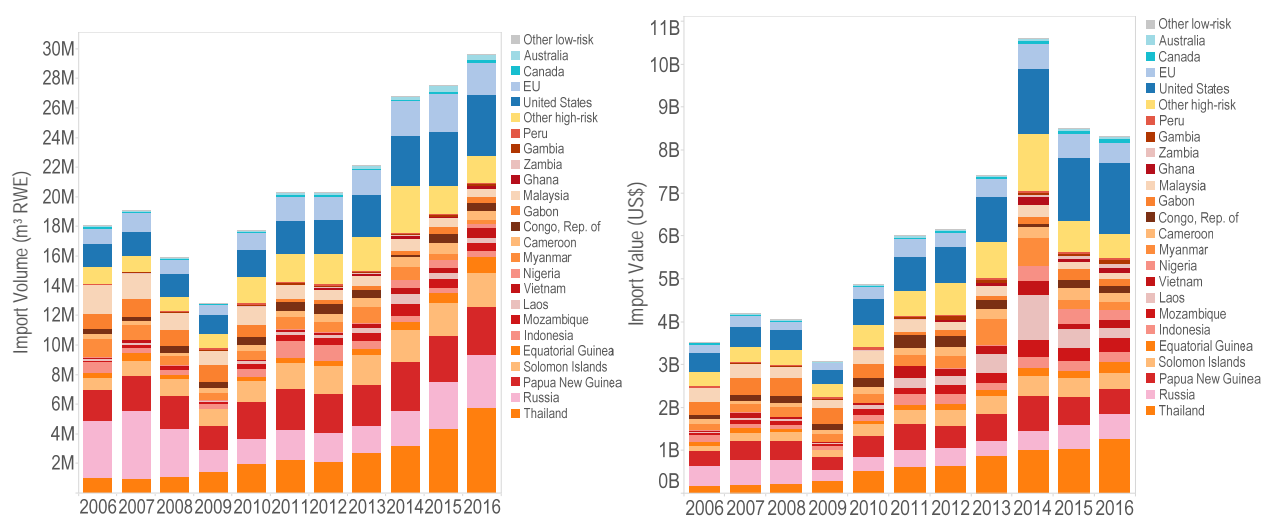
The charts in this section use the above-mentioned factors to categorize some countries that supply timber products to China as low-risk, and others as high-risk. However, it is important to note that these categorizations are just a starting point for deeper scrutiny of particular source countries, products, or imports – in other words, a categorization of high risk does not mean that all wood coming from that country is high risk. They should not be used in isolation or as an alternative to undertaking full and meaningful risk assessments for specific supply chains.

China has taken meaningful steps to preference lower-risk timber suppliers over the past decade, with the percentage of timber imports sourced from high-risk countries falling from nearly 90 percent in 2006 by volume (80 percent by value) to less than two-thirds in 2016. However, the absolute volume of high-risk timber is still increasing, and surpassed 60 million m³ RWE in 2016 for the first time. (By value, imports from high-risk countries peaked in 2014 due to the boom in rosewood imports that year).

Major suppliers of high-risk timber to China include Russia, Vietnam, Thailand, Indonesia, and PNG.

² For a full set of Log Export Bans, see: <http://www.forest-legality.org/content/logging-and-export-bans>

Figure 24: Hardwood Imports by Risk Level by Country

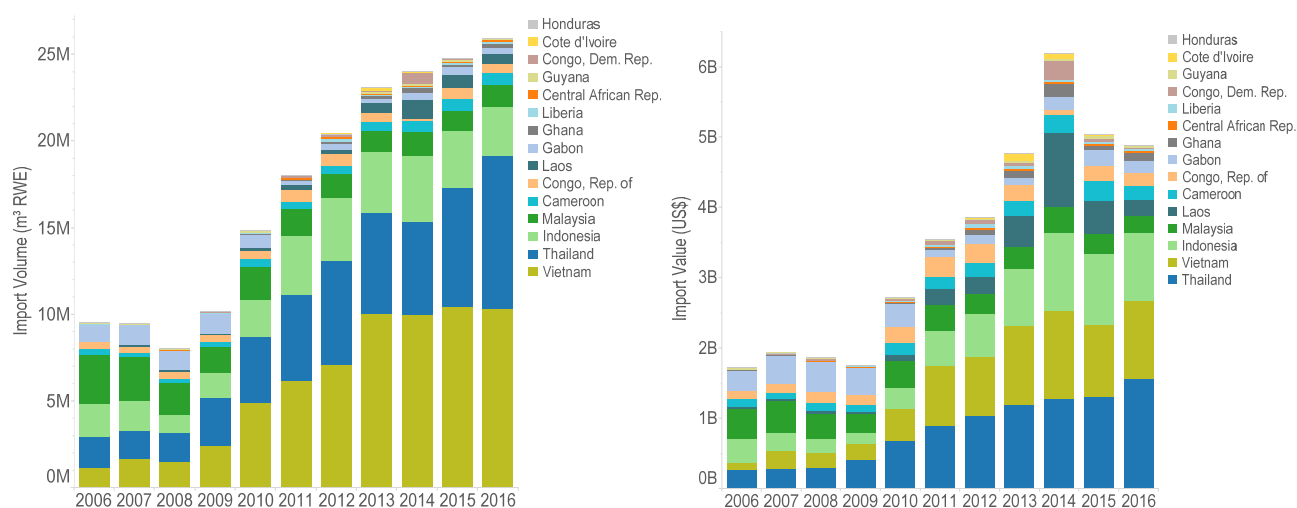


For hardwood species, the proportion of China's hardwood imports from high-risk countries is even higher, and is decreasing more slowly – 77 percent by volume, down from 84 percent in 2006; and 73 percent by value, down from 80 percent in 2006. In absolute terms, China imported 23 million m³ RWE of hardwood species from high-risk countries in 2016, valued at US\$6 billion.

A small number of low-risk countries (namely the US and EU Member States) are supplying increasing volumes of hardwood species to Chinese markets. However, hardwood imports from high-risk countries such as Thailand, PNG, Solomon Islands, and Equatorial Guinea continue to rise.

Imports: FLEGT-VPA Countries

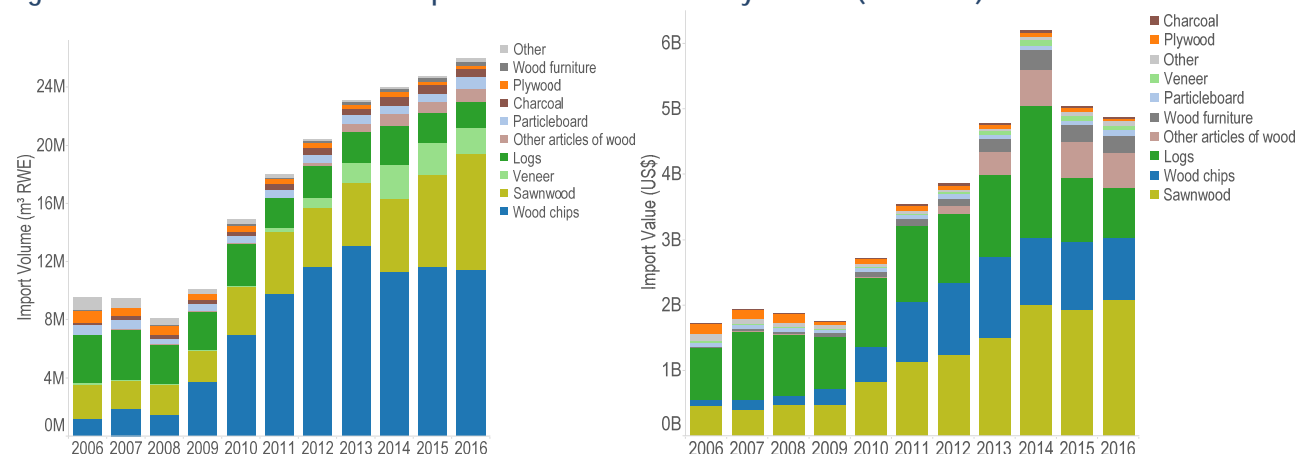
Figure 25: Chinese Timber Product Imports from VPA Countries by Country (2006-2016)



China's imports of timber products from countries which have begun a dialogue with the European Commission on a bilateral Forest Law Enforcement, Governance and Trade Voluntary Partnership Agreement (FLEGT-VPA) reached a record high of 22 million m³ RWE in 2016 (valued at US\$5 billion). Over 20 percent of China's total timber product imports by volume, and nearly a quarter by value, are sourced from these 15 countries.

Nearly 40 percent of China's timber product imports from VPA countries are from Vietnam, by volume, with an additional 34 percent from Thailand. By value, Thailand is China's largest VPA country supplier of timber products (33 percent), followed by Vietnam (23 percent) and Indonesia (20 percent). Timber product imports from VPA countries by value peaked in 2014, largely due to a surge in high-value logs and sawnwood from Laos, before dropping by 20 percent in 2015.

Figure 26: Chinese Timber Product Imports from VPA Countries by Product (2006-2016)

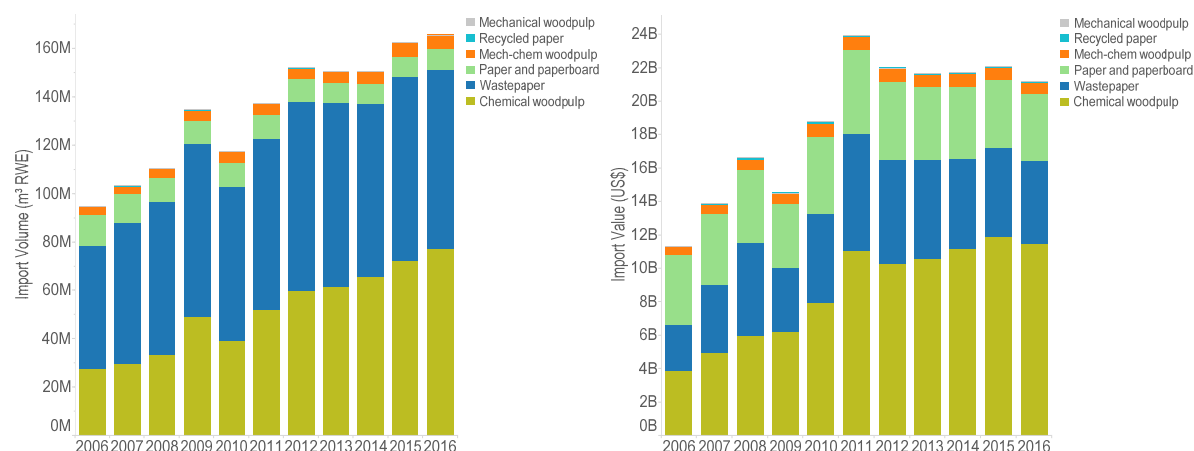


Of the 26 million m³ RWE in timber products that China imports from VPA countries in 2016, over two-fifths (11.5 million m³ RWE) is in woodchip form. An additional 8 million m³ RWE is in sawnwood form.

By value, 43 percent of China's timber product imports from VPA countries is in sawnwood form. Thailand is the leading supplier of sawnwood to China among VPA countries. The proportion of China's timber product imports from VPA countries in the form of raw logs has declined by both volume (from 35 percent to 7 percent, measuring just under 2 million m³ RWE in 2016) and value (from 47 percent to 16 percent, equivalent to US\$800 million in 2016).

Imports: Pulp and Paper

Figure 27: Chinese P&P Imports by Product (2006-2016)

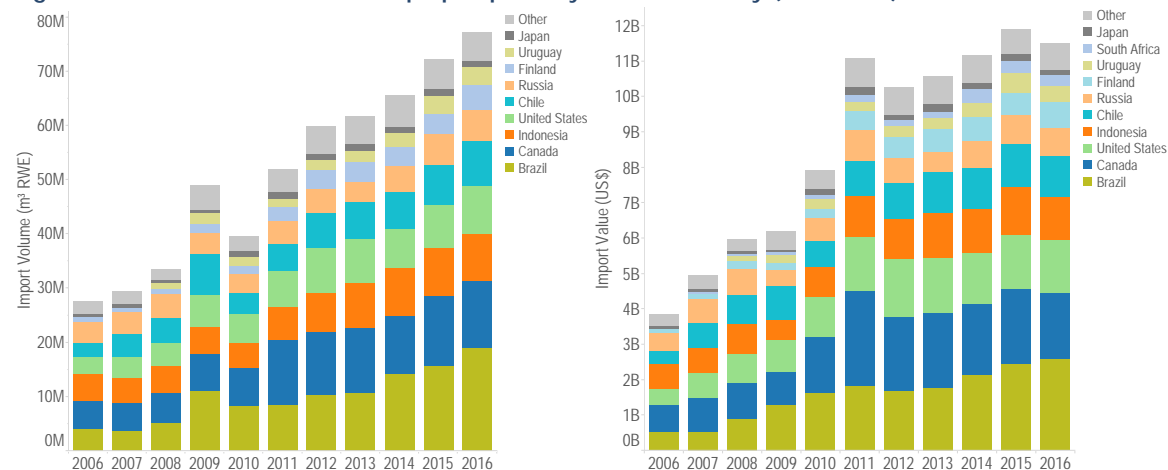


China imported 166 million m³ RWE of pulp and paper (P&P) products in 2016, valued at US\$21 billion. Nearly half of these imports, by volume, were in the form of chemical woodpulp, with an additional 45 percent in wastepaper form. Overall P&P imports have risen gradually in the past decade, increasing nearly 80 percent from 2006 to 2016.

Chemical woodpulp commands higher prices than wastepaper, and comprises a full half of China's P&P imports by value. It is also the most high-risk source of wood fiber used in China's paper manufacturing sector, as several major source countries have well-documented illegalities in their pulp production practices.

Although paper and paperboard make up a small proportion (9 million m³ RWE) of China's total P&P imports by volume, they comprise nearly a fifth of the value of these imports (US\$4 billion).

Figure 28: Chinese Chemical Woodpulp Imports by Source Country (2006-2016)

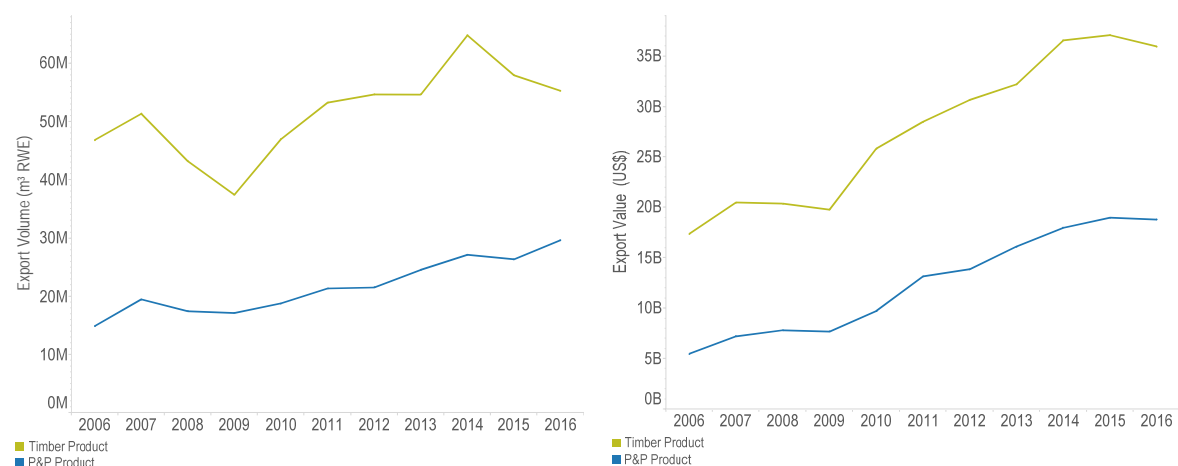


China's imports of chemical woodpulp have risen from 27 million m³ RWE in 2006 (valued at US\$4 billion) to 77 million m³ RWE in 2016 (valued at US\$11.5 billion). While imports of chemical woodpulp have by 5-10 percent year-on-year since 2012 by volume, they peaked by value in 2015 before subsequently dropping in 2016.

Brazil is China's largest supplier of chemical woodpulp by both volume (19 million m³ RWE) and value (US\$2.6 billion). Canada, the United States, Indonesia, and Chile are also among China's top source countries for chemical woodpulp. While imports from North and South America are largely comprised of sustainably-grown plantation species, imports from Indonesia and Russia may be sourced from natural forests, and come at a higher risk of illegality.

Exports: Timber vs. Pulp and Paper

Figure 29: Chinese Timber Product vs. P&P Product Exports (2006-2016)

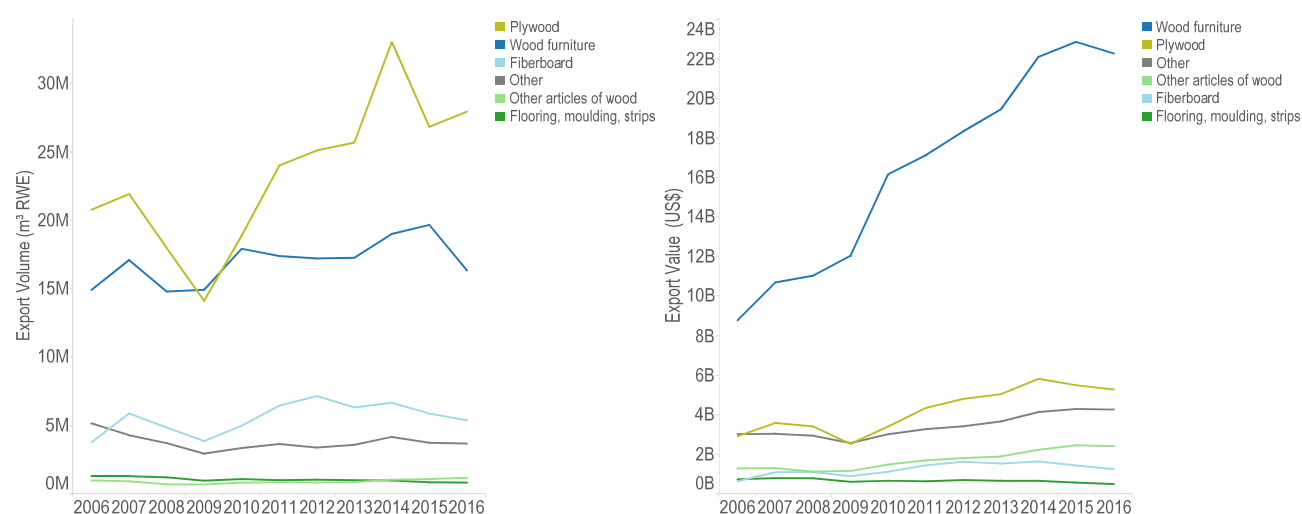


China's timber product exports overcame a slump in 2008-2009 and hit an all-time high of 65 million m3 RWE in 2014. Since then, timber product exports have declined to 55 million m3 RWE.

P&P product exports have shown a higher rate of growth, doubling over the course of the past decade and hitting a record high of nearly 30 million m3 RWE in 2016. However, China has consistently exported between one third and one half of forest products in P&P form compared to those exported in timber product form.

By value, both timber product and P&P exports peaked in 2015 and declined slightly the following year. In 2016, China exported US\$36 billion in timber products, and US\$19 billion in P&P products.

Figure 30: Chinese Timber Product Exports (2006-2016)



In 2016, China exported 55 million m3 RWE of timber products. 90 percent of these timber exports, by volume, and 80 percent by value, were in plywood, furniture, or fiberboard form.

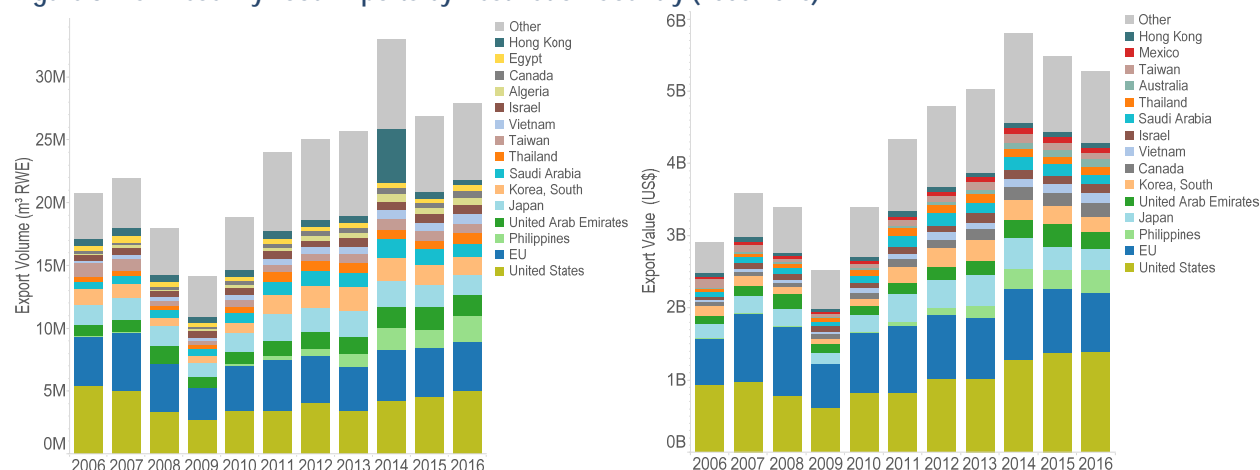
Plywood now amounts to over half (51 percent) of China's total timber product exports by volume – but only 15 percent of total timber product exports by value. China exported 28 million m3 RWE of plywood in 2016 (valued at US\$5 billion), a 15 percent drop from peak 2014 levels by volume.

62 percent of China's timber product exports by value, and 30 percent by volume, are in wood furniture form. While China's exports of wood furniture peaked at 20 million m3 RWE in 2015 (valued at US\$23 billion), in 2016 they declined sharply by volume, and gradually by value, to 16 million m3 RWE (US\$22 billion).

Fiberboard now accounts for 10 percent of China's timber product exports by volume, but just three percent by value. China's exports of fiberboard peaked in 2012 but have since declined gradually year-over-year.

Exports: Plywood

Figure 31: Chinese Plywood Exports by Destination Country (2006-2016)



The US and EU are the largest buyers of plywood exported by China. Just under half of EU-bound Chinese plywood is destined for the United Kingdom.

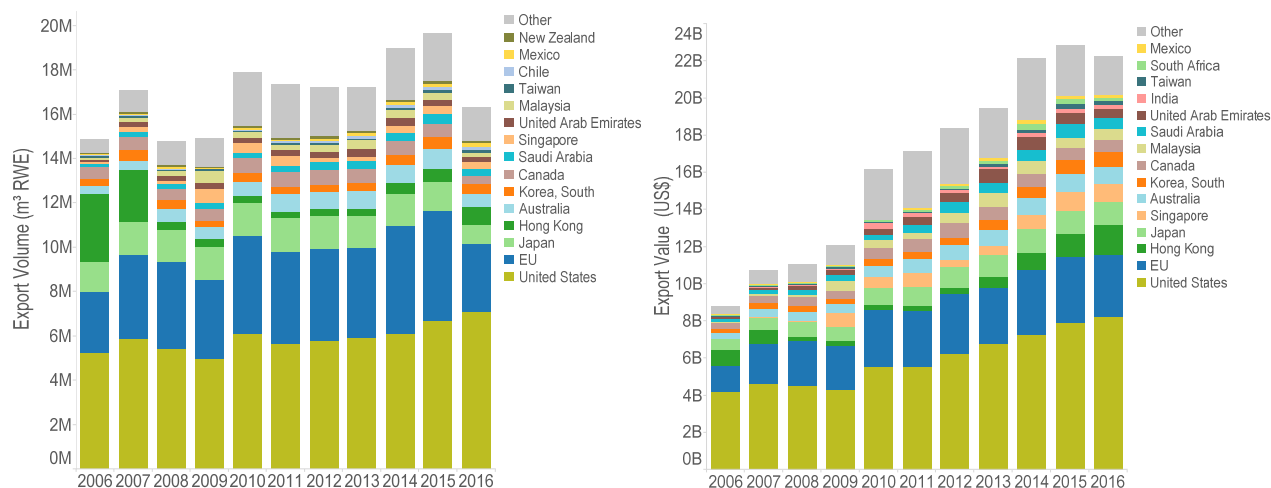
In 2016, the US purchased one fifth of China's plywood exports by volume, and one quarter by value, amounting to 5 million m³ RWE and valued at US\$1.4 billion. The EU purchased approximately 15 percent of China's plywood exports by both volume and value, amounting to 4 million m³ RWE and valued at US\$800 million.

Other major purchasers of Chinese plywood include the Philippines, Japan, United Arab Emirates, South Korea, and Canada. The "other" category encompasses nearly all emerging or "middle-income" economies in Asia, Latin America, and Africa.

In 2016, 11.3 million m³ RWE (US\$2.8 billion), or 43 percent of China's total plywood exports by volume (55 percent by value), were bound for countries with legislation requiring companies to import legally-harvested timber.

Exports: Wood Furniture

Figure 32: Chinese Wood Furniture Exports by Destination Country (2006-2016)



The sharp drop in China's wood furniture exports by volume, but not value, in 2016 indicates that China is exporting more furniture at higher prices to consumer markets around the world.

The US is China's largest destination country for furniture exports. In 2016, 7 million m³ RWE of furniture (valued at US\$8 billion), or around 40 percent, of China's furniture exports were bound for the US.

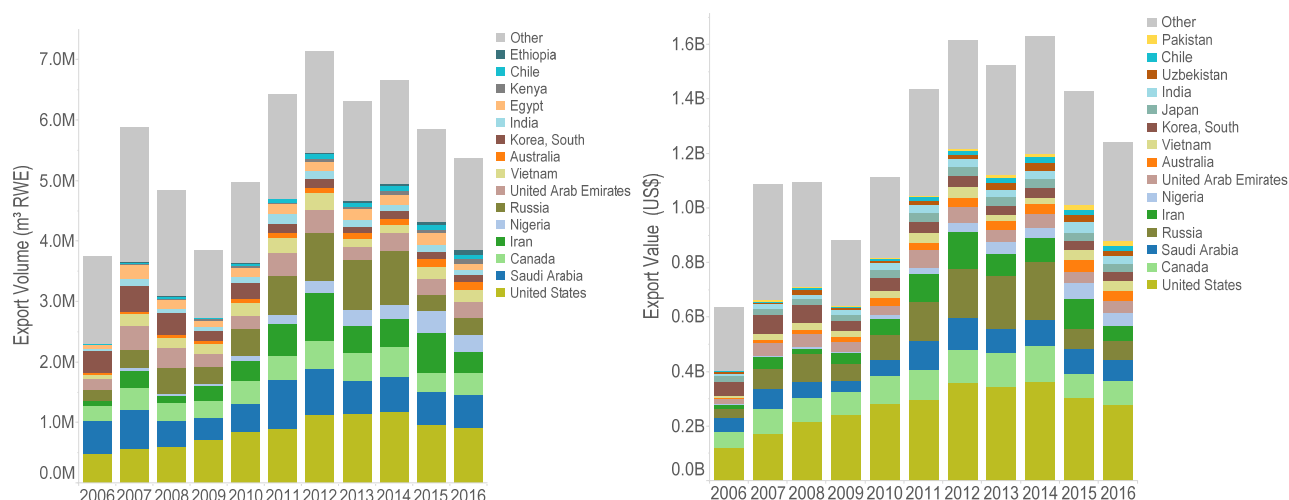
Exports of wood furniture to the EU declined by volume, but not value, in 2016. 19 percent of China's wood furniture exports by volume, and 15 percent by value, were bound for the EU, amounting to 3 million m³ RWE and US\$3.4 billion.

Japan, Hong Kong, Australia, South Korea, and Canada are also major destination countries for China's wood furniture exports. Singapore, which ranks as China's ninth-most destination for wood furniture exports by volume, imported nearly US\$1 billion in wood furniture from China.

In 2016, 12 million m³ RWE (US\$14.3 billion), or 78 percent of China's total furniture exports by volume (68 percent by value), were bound for countries with legislation requiring companies to import legally-harvested timber.

Exports: Fiberboard

Figure 33: Chinese Fiberboard Exports by Destination Country (2006-2016)



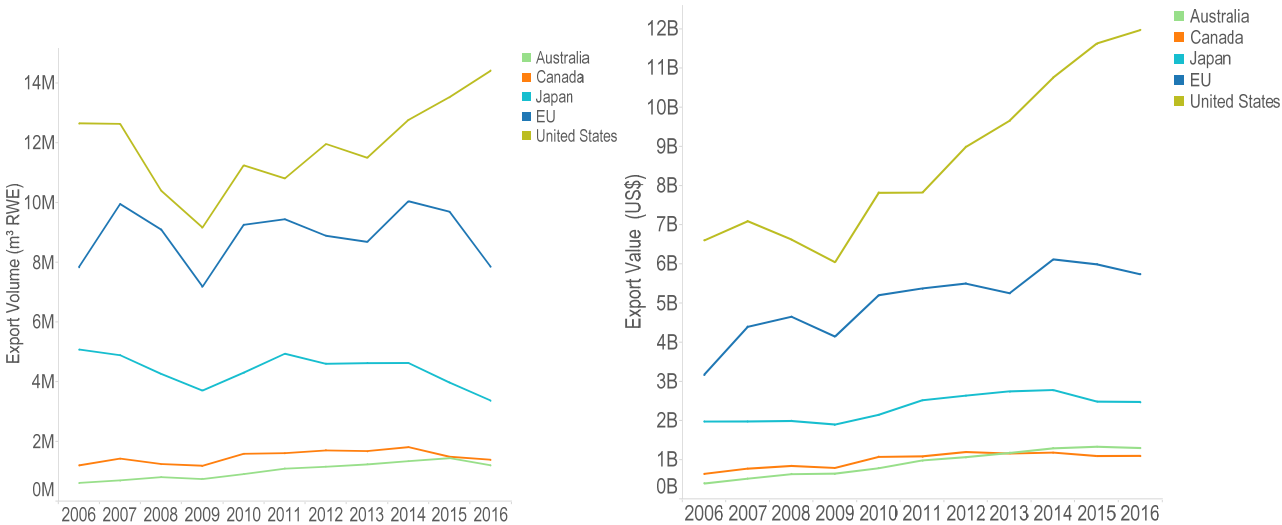
The United States is China's largest destination for fiberboard exports. In 2016, China exported over 900,000 m³ RWE, valued at nearly US\$300 million, to US buyers.

Saudi Arabia ranks as China's second-largest destination country for fiberboard exports by value, and third-largest by volume, while Canada ranks as the third-largest destination country by volume, and second-largest by value. More than 25 percent of China's fiberboard exports by volume are bound for the Middle East.

Fiberboard exports to Russia, previously China's second-largest destination for fiberboard exports, peaked in 2014 before declining precipitously the following year. Russia's 2016 imports of Chinese fiberboard were equal to just 30 percent of 2014 levels.

Exports: “Sensitive Markets”

Figure 34: China Timber Product Exports to Sensitive Markets (2006-2016)



In 2016, 51 percent of China’s timber product exports by volume – and 63 percent by value – were destined for environmentally sensitive markets. These include the US, EU, Australia and, most recently, Canada (which has recently expanded the regulatory scope of CITES implementing legislation) and Japan (whose Clean Wood Act, requiring registered businesses to trade in only legal timber, entered into force in May 2017).

In total, China exported 28 million m3 RWE (valued at US\$23 billion) to sensitive markets. This represents a very slight decline from peak levels in 2014.

China’s timber product exports to the US have increased substantially in recent years, hitting a record high of 14 million m3 RWE in 2016 (valued at US\$12 billion) and representing just over half of China’s timber product exports to environmentally sensitive markets.

Figure 35: China Timber Product Exports to the US in 2016 by Volume

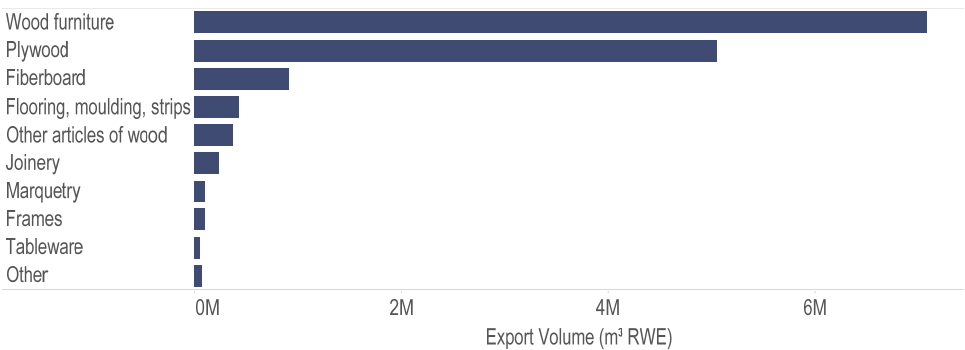
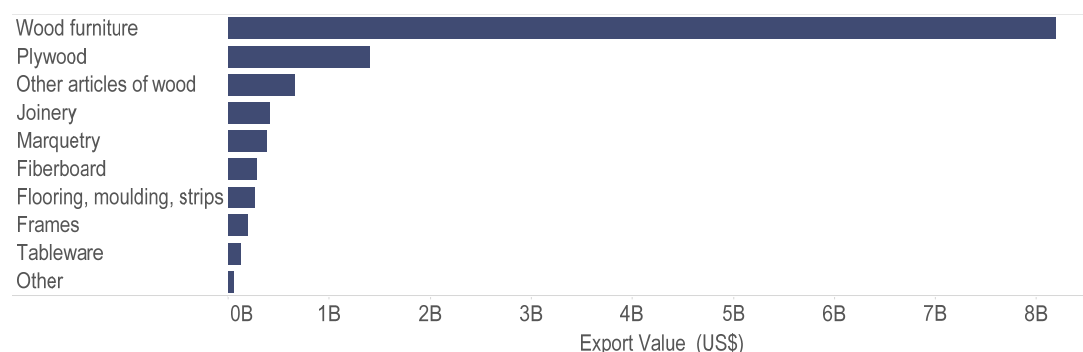


Figure 36: China Timber Products Exported to the US in 2016 by Value



China exported over 10 million m3 RWE of wood furniture to the US in 2016 (valued at US\$12 billion). Wood furniture accounted for half of China's timber product exports to the EU by volume, and 70 percent by value.

Plywood exports from China to the US reached 3 million m3 RWE in 2016, and were valued at over US\$2 billion that year. More than one third of China's timber product exports to the US by value were in plywood form.

Figure 37: China Timber Products Exported to the EU in 2016 by Volume

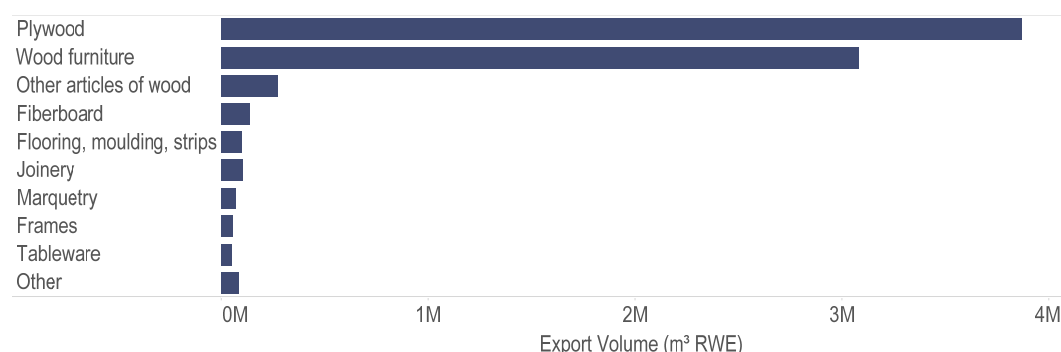
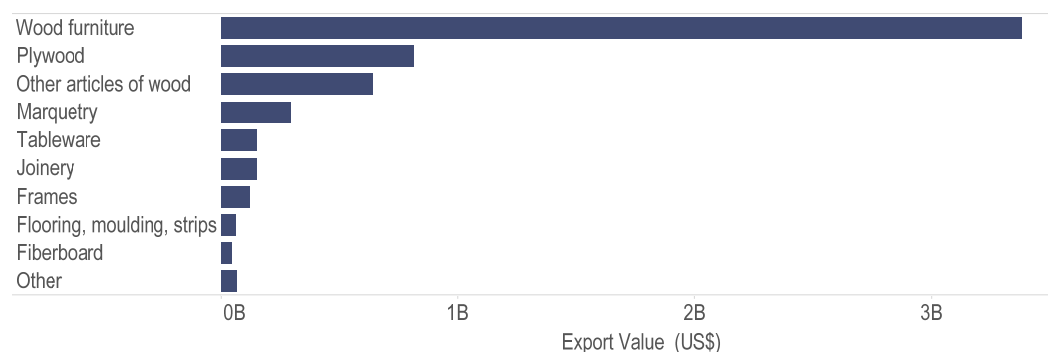


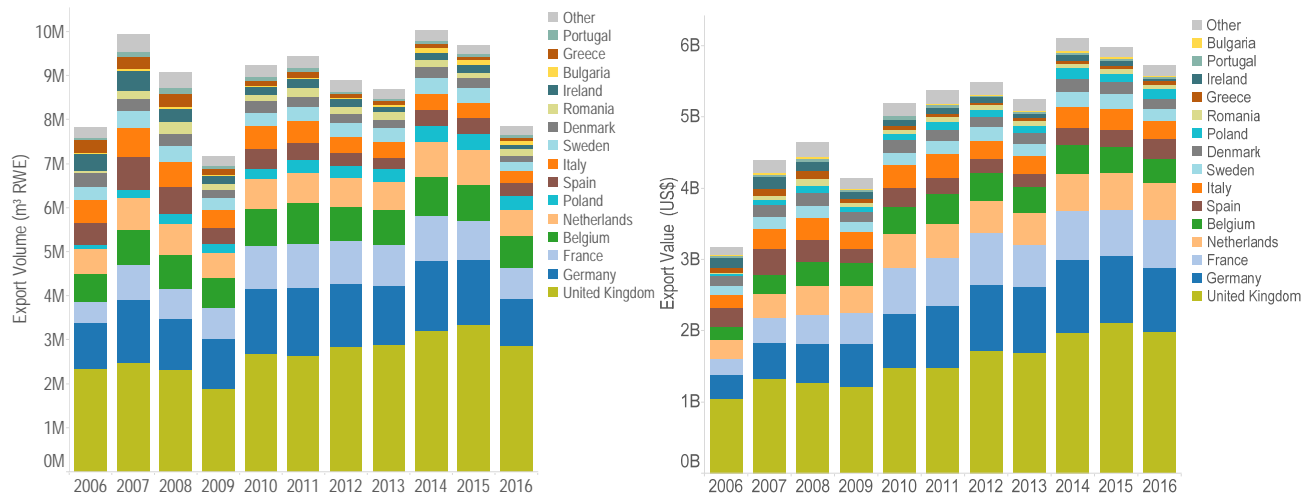
Figure 38: China Timber Products Exported to the EU in 2016 by Value



China exported nearly 4 million m3 RWE of plywood to the EU in 2016 (valued at more than US\$800 million). Plywood accounted for half of China's timber product exports to the EU by volume, but just 15 percent by value.

Wood furniture exports from China to the EU reached 3 million m3 RWE in 2016, and were valued at US\$3.4 billion that year. Nearly 60 percent of China's timber product exports to the EU by value were in furniture form.

Figure 39: Timber Product Exports to EU Member States (2006-2016)



China's timber product exports to the EU have fluctuated in the past decade, but remained between 7 and 10 million m³ RWE annually by volume. By value, exports rose from US\$3.1 in 2006 before peaking at US\$6.1 million in 2014, then declined to US\$5.7 million in 2016.

The UK, Germany, and France are the largest consumers of Chinese timber product exports among EU Member States by both volume and value, together accounting for approximately 60 percent of the market by both volume and value.

Figure 40: Top Timber Products Exported to Australia in 2016 by Volume

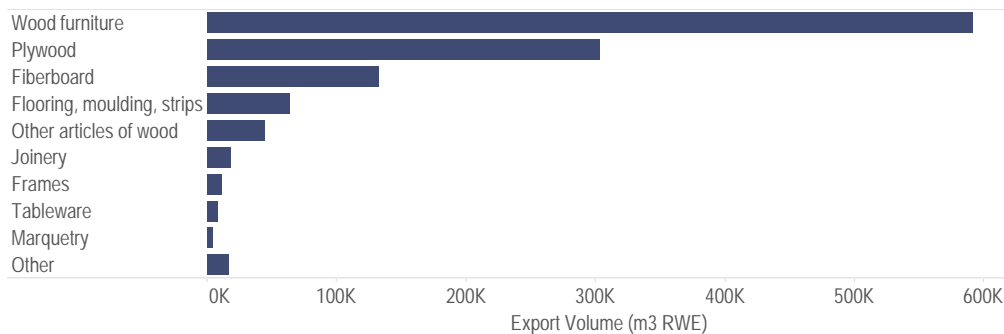
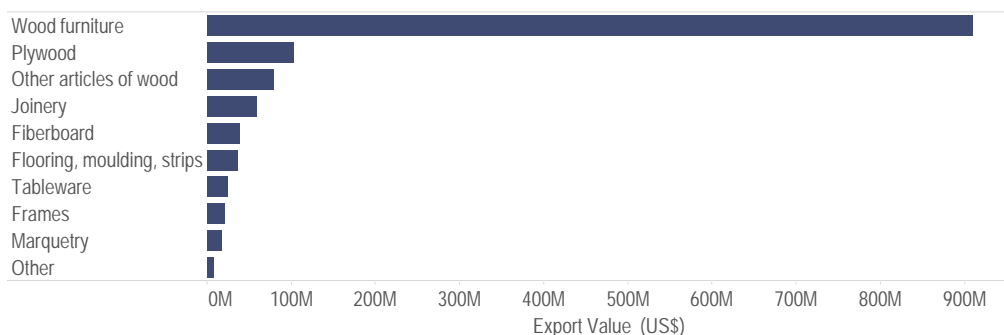


Figure 41: Top Timber Products Exported to Australia in 2016 by Value



China exported nearly 600,000 m³ RWE of wood furniture to Australia in 2016 (valued at US\$900 million). Wood furniture accounted for half of China's timber product exports to Australia by volume, and 70 percent by value.

Plywood exports from China to Australia exceeded 300,000 m3 RWE in 2016, and were valued at US\$100 million that year. Nearly one quarter of China’s timber product exports to Australia by volume – but just eight percent by value – were in plywood form.

Figure 42: Top Timber Products Exported to Japan in 2016 by Volume

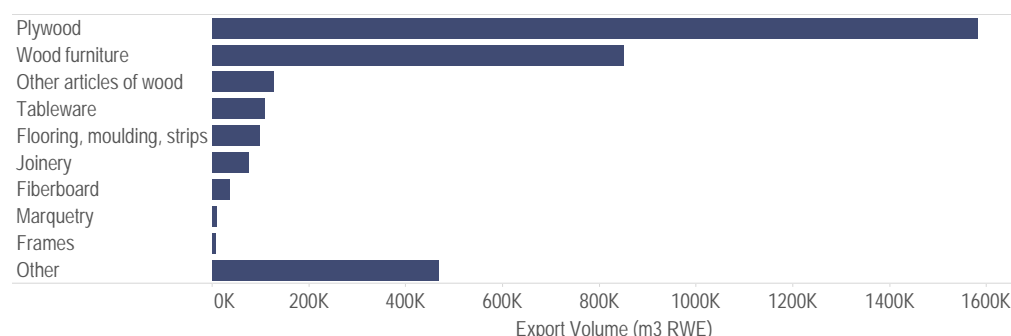
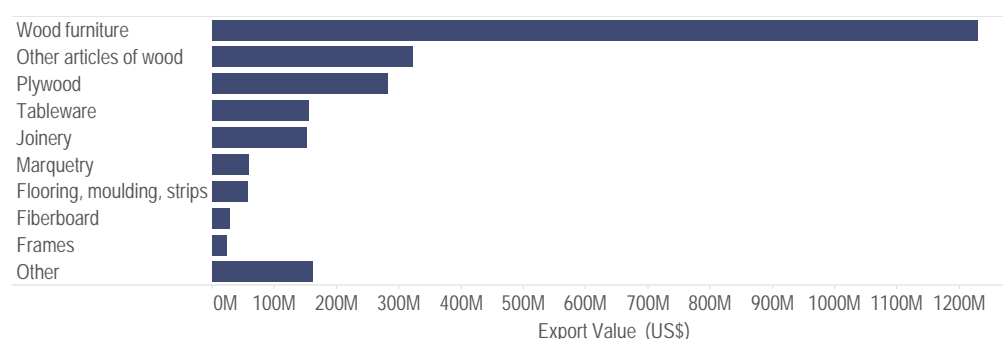


Figure 43: Top Timber Products Exported to Japan in 2016 by Value



Nearly 50 percent of China’s timber product exports to Japan by volume are in plywood form. By value, however, half of timber product exports to Japan are in wood furniture form.

China exported nearly 900,000 m3 RWE of plywood to Japan in 2016, valued at US\$1.2 billion. Wood furniture amounted to just one quarter of China’s total timber product exports to Japan that year. The volume-to-value discrepancy indicates that wood furniture exports from Japan were comprised of high-value timber species.

Plywood exports from China to Japan exceeded 1.5 million m3 RWE in 2016, and were valued at US\$300 million that year. By value, plywood accounted for just 11 percent of China’s total timber product exports to Japan.

Figure 44: Top Timber Products Exported to Canada in 2016 by Volume

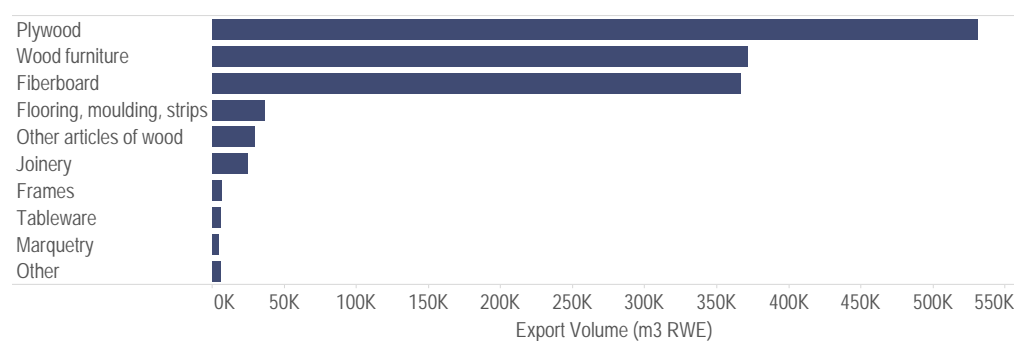
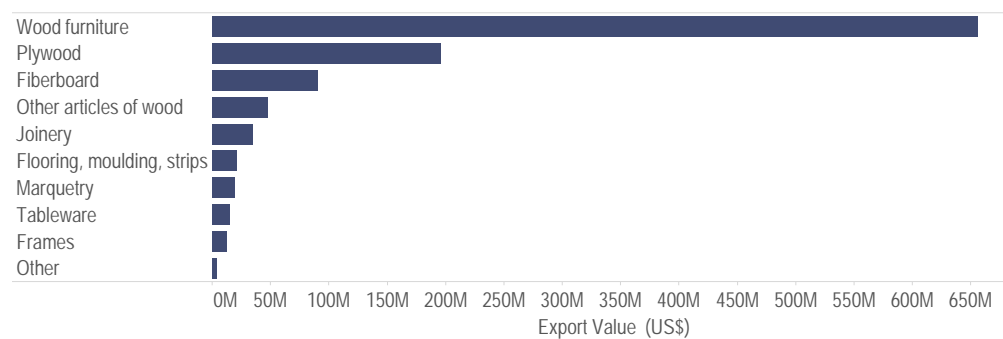


Figure 45: Top Timber Products Exported to Canada in 2016 by Volume

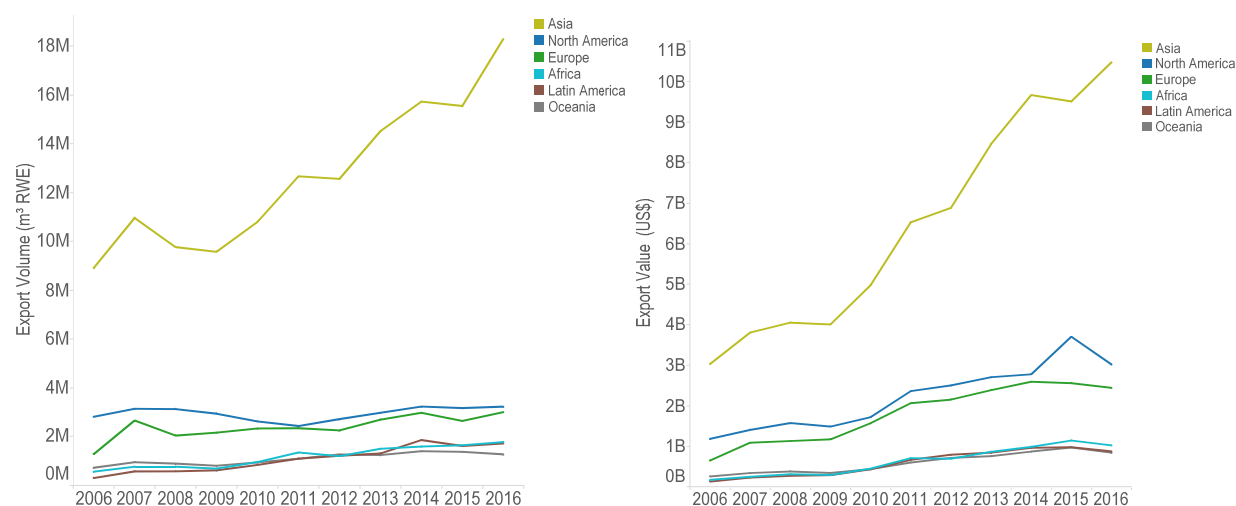


China exported over 500,000 m3 RWE of plywood to Canada in 2016, valued at US\$200 million. Plywood accounted for nearly 40 percent China's timber product exports to Canada by volume, but just 18 percent by value.

China exported just under 400,000 m3 RWE in wood furniture form to Canada in 2016. However, as with the Japanese market, these exports were comprised of high-value species, commanding US\$700 million that year. 27 percent of China's timber product exports to Canada by volume – but 60 percent by value – were in wood furniture form.

Exports: Paper and Paperboard

Figure 46: Paper and Paperboard Exports by Destination Region by Volume (2006-2016)



Of China's 29 million m³ RWE in paper and paperboard exports, 18 million m³ RWE – nearly two thirds – was destined for Asian markets. While the absolute volume of paper and paperboard exports to Asia has doubled since 2006, increasing by 3 million m³ RWE from 2015 to 2016 alone, the proportion of these exports shipped to Asian consumer countries has held relatively steady. A decade earlier, North America was a much larger consumer of Chinese paper and paperboard products, commanding nearly 20 percent of the market in 2006 compared to just 11 percent in 2016.

Value data show a similar trend, with 56 percent of China's US\$10.5 billion in paper and paperboard exports destined for Asian consumer countries. North America consumes 16 percent of China's paper and paperboard exports, and Europe, 12 percent.

Major consumers of China's paper and paperboard exports include Japan, Vietnam, India, South Korea, and the US.



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