

The top banner of the slide features the British Columbia flag waving over a scenic landscape of mountains and a body of water under a sunset sky.

2016 Economic State of the B.C. Forest Sector

May 2018

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Economic Services Branch

*Updated from November version to reflect revisions to
historic manufacturing sales and 2016 lumber exports*

A decorative banner at the top of the slide featuring the British Columbia flag, a landscape with mountains, and a field of yellow grass.

Outline

- ❖ **Overview**
- ❖ **Products**
- ❖ **Markets**
- ❖ **Sector Indicators**
- ❖ **Conclusions and Outlook**
- ❖ **Appendix** *(additional slides for all topics)*

Ministry Economic Reports

- ❖ Weekly Prices: Tracks weekly prices relevant to the B.C. forest sector.
- ❖ Monthly Exports: Export values by major market and product groups, including some quantity information.
- ❖ Annual Mill Report and Quarterly Mills Status Reports: Summary outlining B.C.'s harvest and timber processing activity during the year and of quarterly openings, closings, and investment.
- ❖ Log Exports: Summary of permit information (Permit Report on right side).
- ❖ Economic State of the BC Forest Sector: Year in review for the B.C. forest sector.

A decorative banner at the top of the slide featuring the British Columbia flag waving over a scenic landscape of mountains and a body of water at sunset.

Overview of B.C. Forest Sector

- ❖ **Includes** forest management, harvesting, reforestation, wood product manufacturing, and pulp and paper product manufacturing.
- ❖ **Plays a key role in the provincial economy** with a significant presence in the Lower Mainland, and as an essential contributor to communities outside the Lower Mainland.
- ❖ **Is export-oriented**, depending heavily on global markets and exchange rates, and foreign competition.
- ❖ **Is cyclical**, affected by the global forest commodity markets and general performance of the world economy.

Overview of 2016

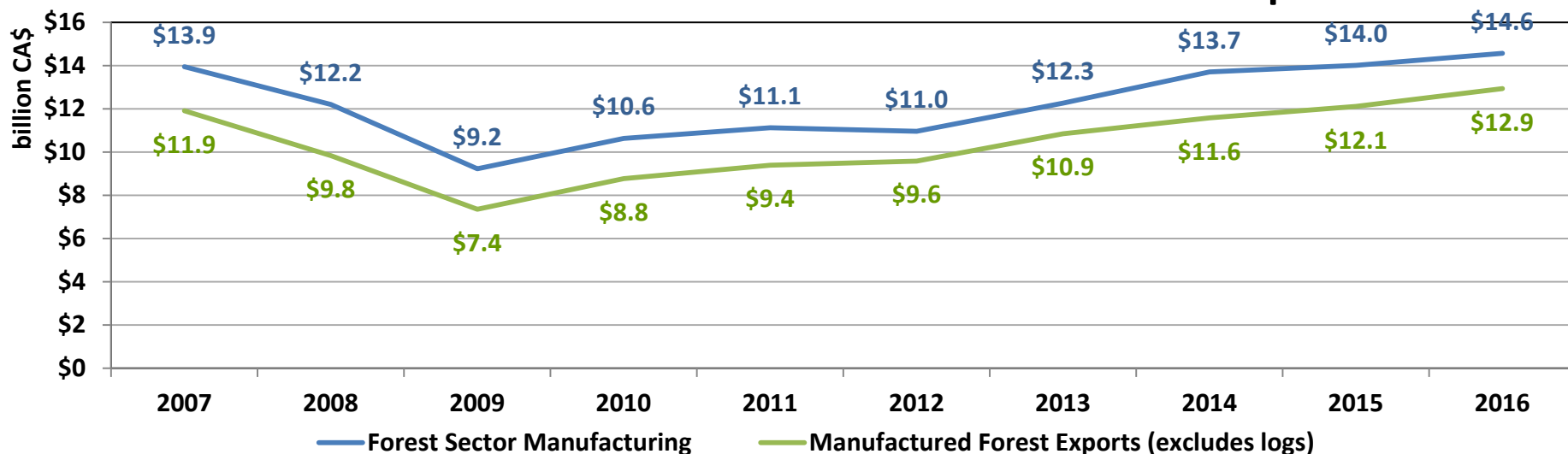
- ❖ **In sales terms, 2016 was an improvement over 2015**, but sales by product varied. Wood products tended to do well (+10%) while paper products saw downward pressure (-7.5%).
- ❖ **B.C.'s forest sector exports increased** substantially in 2016, though export gains were solely from solid wood products.
- ❖ **The U.S. market** continued to gradually improve, as seen in the U.S. housing market and higher B.C. forest sector exports to the U.S.
- ❖ **China*** continued as the second largest export market for B.C.'s forest sector. Most product types saw declines in exports, probably due to the strength of the U.S. market mixed with strong competition from Russia.
- ❖ **Employment decreased** in 2016 according to the Labour Force Survey**.
- ❖ **The B.C. forest sector continues to recover** from 2009, the sector's worst year of the recession, and one of the worst years for B.C. forestry in recent history.

*All references to China in this report include Hong Kong.

**According to the Survey of Employment, Payrolls and Hours employment was relatively unchanged, and the System of National Accounts showed a slight increase. See Appendix.

Note: Numbers may not add properly to totals, or always be the exact same on each slide due to rounding.

B.C. Manufactured Forest Product Sales and Forest Exports

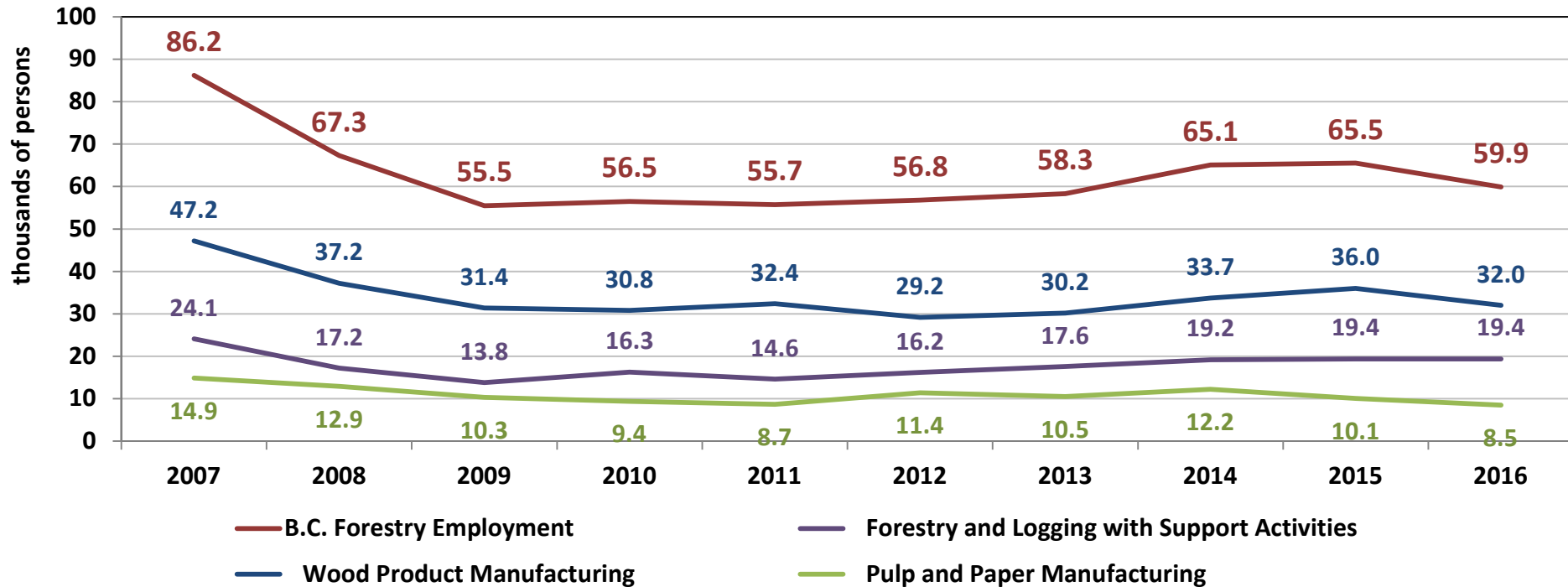


Data source: Statistics Canada; [CANSIM 304-0015](#), and [Canadian International Merchandise Trade Database \(CIMTD\)](#) or via [BC Stats](#). Note historic data is subject to revisions.

Overview Indicator 1 – B.C. forest sector manufacturing sales in 2016 were up 4% from 2015 and accounted for 31% of B.C. total manufacturing sales. Exports were up 7.3% from 2015, accounting for 35% of B.C. total merchandise exports. During the U.S. Housing boom, 2004 was the peak in forest sector manufacturing sales and exports (CA\$18.2 and CA\$15.1 billion). Note: There were two significant revisions to these series. There was a 1.56 million m³ reduction of BC lumber exports to the U.S. in 2016 (-\$252 million). This was very similar to our estimate for a correction, and was a major driver of the narrowing gap between manufacturing and export values in the original 2016 Annual Report.

Additionally, manufacturing sales were revised upwards from 2014-2016 by \$500-800 million. Sawmilling sales went up by \$700-800 million in each year, and converted paper sales were revised downward \$233 million in 2015. This also served to increase the gap between manufacturing and exports in the updated version of this report.

B.C. Forest Sector Direct Employment Estimate



Data source: Statistics Canada via [BC Stats](#); Labour Force Survey. For further discussion of employment estimates please see slide 54 in the appendix.

Overview Indicator 2 – B.C. forest sector direct employment was 59,900 in 2016, down 8.5% from 2015, but up 7.9% from 2009. In 2016 there was a decrease in Wood Product employment (-11%) and in Pulp and Paper (-16%). Forestry and Logging with Support Activities was unchanged.

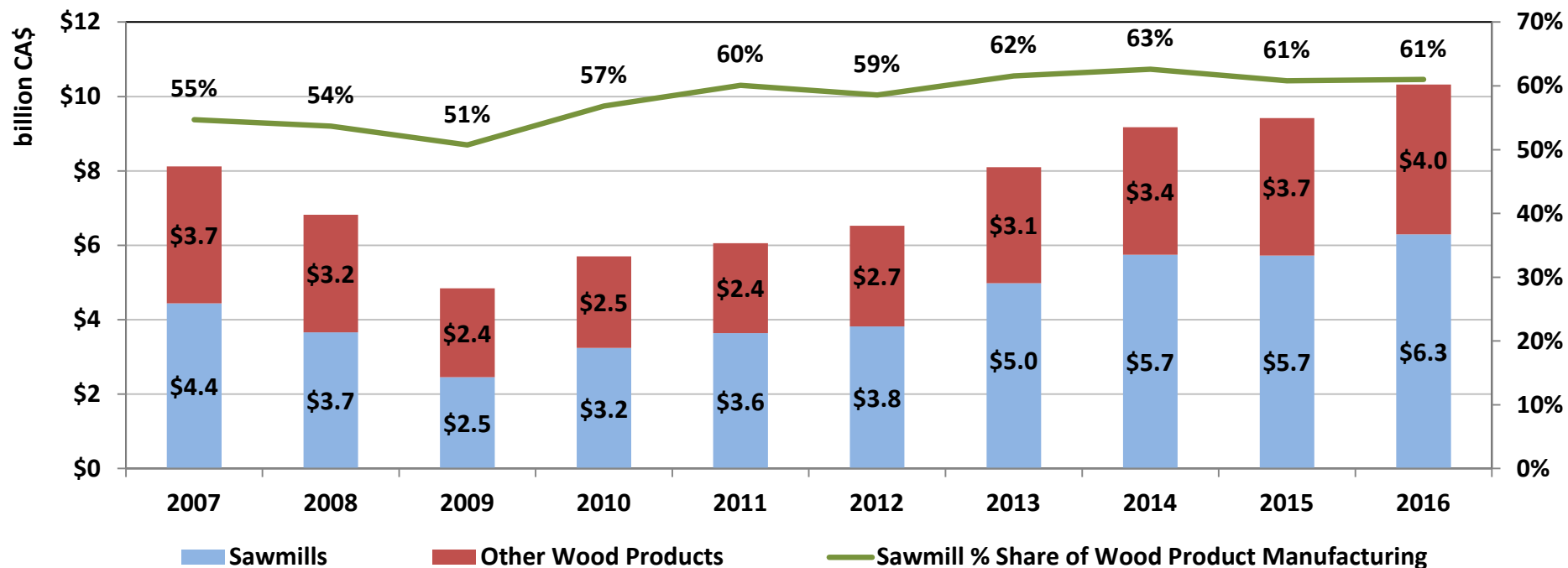
Products Overview

- ❖ **Wood Products, especially Lumber:** In 2016, B.C. produced 31.2 million cubic metres of lumber, or 48% of Canada's total softwood lumber production. B.C. sawmill* sales (primarily lumber) were CA\$6.3 billion in 2016, or 61% of total Wood Product Manufacturing sales in B.C.
- ❖ **Pulp and Paper Products, especially Market Pulp:** B.C. pulp mills** had sales of CA\$2.4 billion in 2016, or 56% of total Paper Manufacturing sales in B.C.
- ❖ **Logs:** In 2016, 65.7 million cubic metres of logs were harvested. Exports of 6.3 million cubic metres (9.6% of harvest), mostly from coastal areas, were worth CA\$771 million.
- ❖ **Wood Products-Pellets:** B.C. exported 1.93 million tonnes of wood pellets worth CA\$319 million. The UK was the primary destination by weight (71%), followed by Japan (14%), Belgium (7.4%), and Italy (3.1%).

*Excludes shake and shingle mill sales. Sawmills are a subcategory of Wood Product Manufacturing.

**Pulp is a subcategory of the Paper Manufacturing NAICS code.

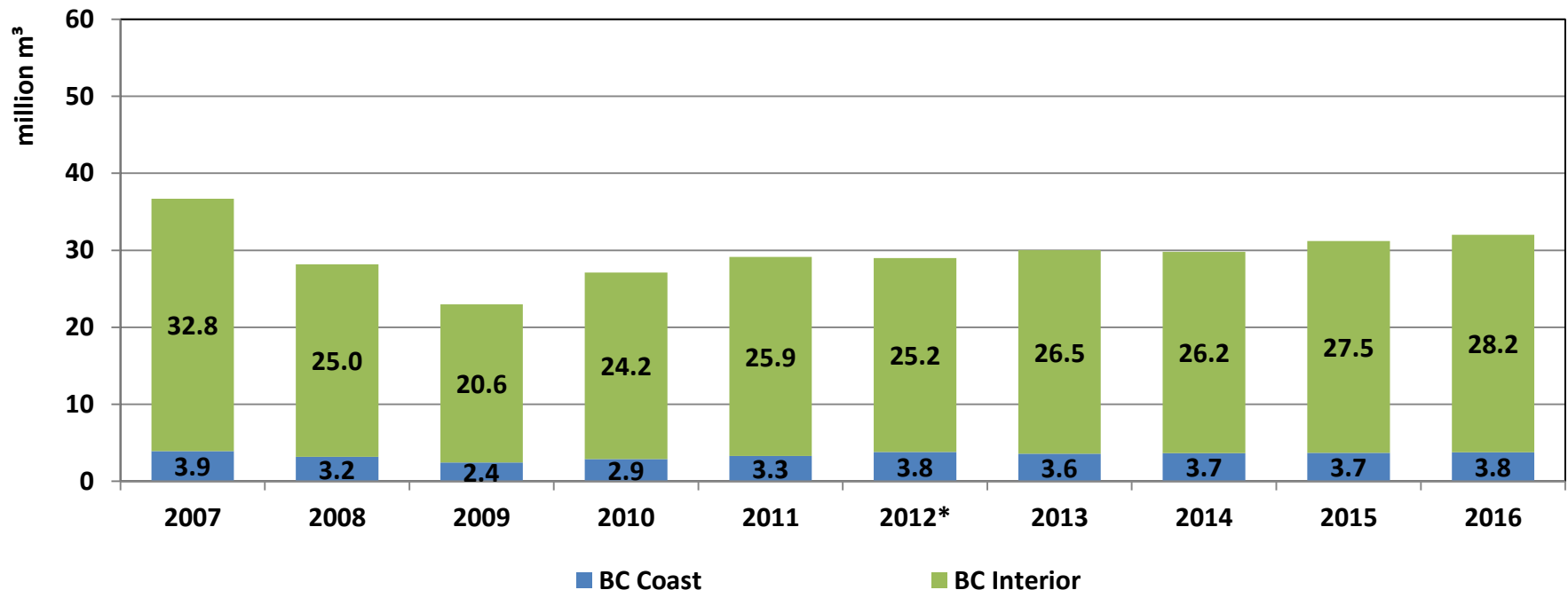
B.C. Wood Product Manufacturing Sales



Data source: Statistics Canada; [CANSIM 304-0015](#). Sawmill sales are primarily lumber, and include chip and sawdust sales. Other wood products include veneer, plywood, oriented strand board, shake and shingles, wood pellets, and most other products of wood such as cabinets, bowels, tool handles, fencing, etc.

Products – Wood Products – Wood Product Manufacturing sales totaled CA\$10.3 billion in 2016. Sawmill sales accounted for 61% of Wood Product Manufacturing sales. From 2015 to 2016, Sawmill sales increased 10%, and Other Wood Products increased 9%.

B.C. Softwood Lumber Production



*Interior and Coast totals are Estimates. In all years the Interior includes production from Yukon, Northwest Territories, and Nunavut, though the volume is negligible

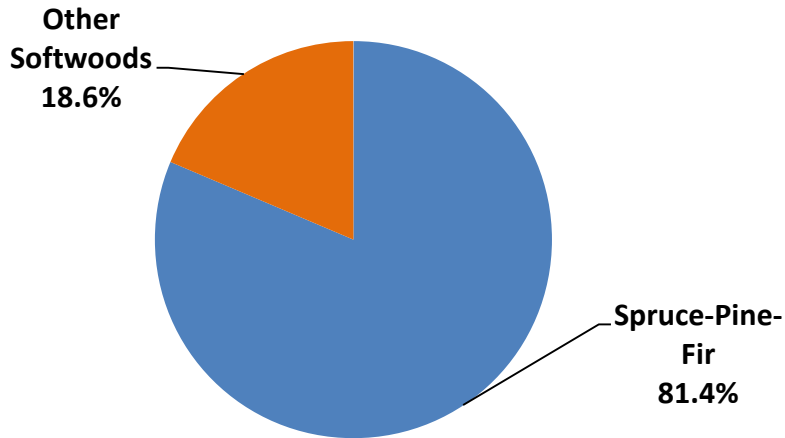
Data source: Statistics Canada; [CANSIM 303-0064](#).

Products – Softwood Lumber – Softwood lumber production volume increased 2.6% in 2016. The Coast accounted for 12% of B.C. production. Lumber production in the past several years is comparable to the production in 1995-1999 when U.S. housing starts averaged around 1.5 million, yet housing starts are currently only 1.18 million.

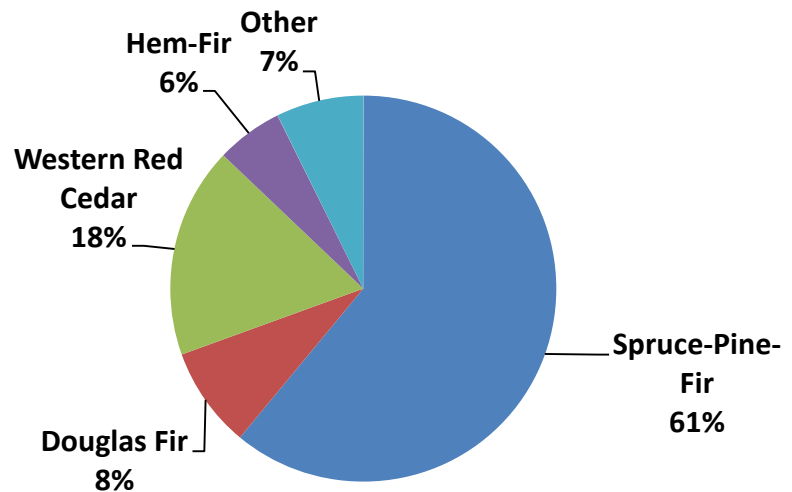


B.C. Softwood Lumber Production and Export Value Share by Species, 2016

B.C. Softwood Lumber Production
(32.0 million m³)
Share by Species, 2016



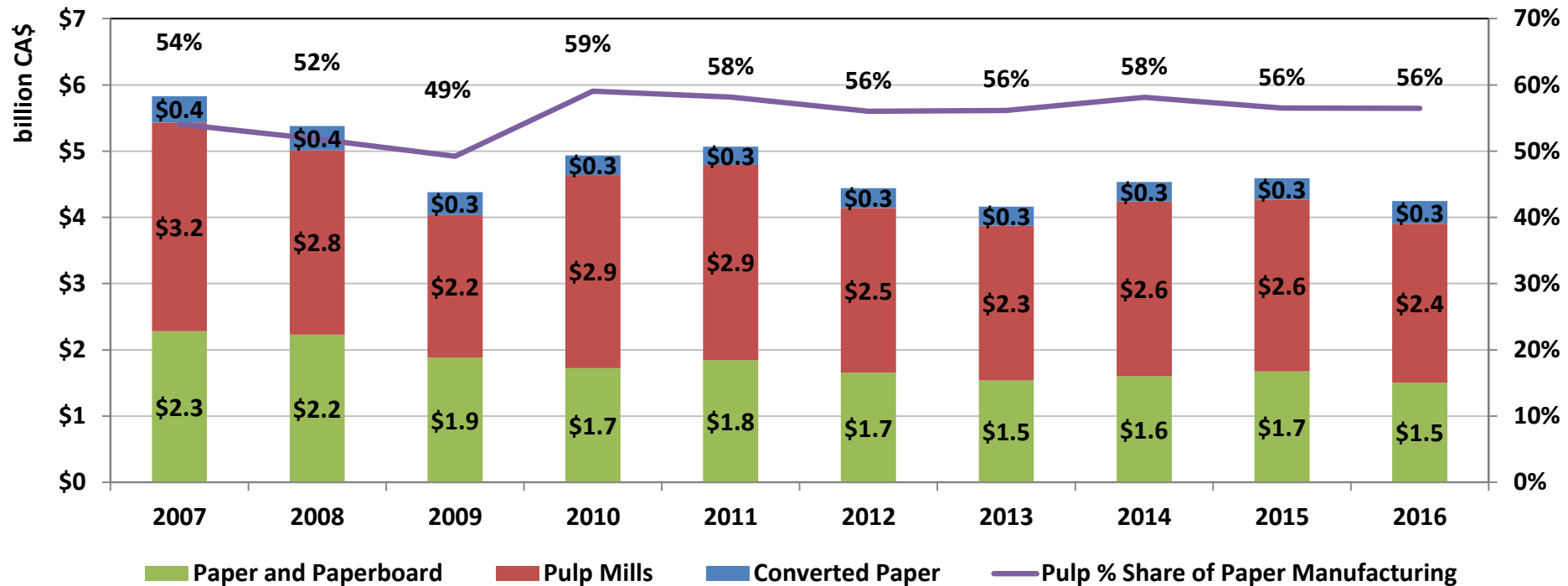
B.C. Softwood Lumber Export Value
Share by Species, 2016



Data source: Statistics Canada; [CANSIM 303-0064](#) and [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Based on volume in cubic metres. SPF's share of export volume was 75% in 2016. Note historic data is subject to revisions. Lumber exports in 2016 may decline (see slide 5).

Products – Softwood Lumber – In 2016, 81.4% of softwood lumber production volume was spruce, pine or fir (SPF), and 18.6% was from other species such as cedar, Douglas fir, and hemlock. For comparison, in terms of export value SPF was 61% of the total, while other species made up 39%. This demonstrates non-SPF species on average have a higher value per m³ than SPF.

B.C. Paper Manufacturing Sales

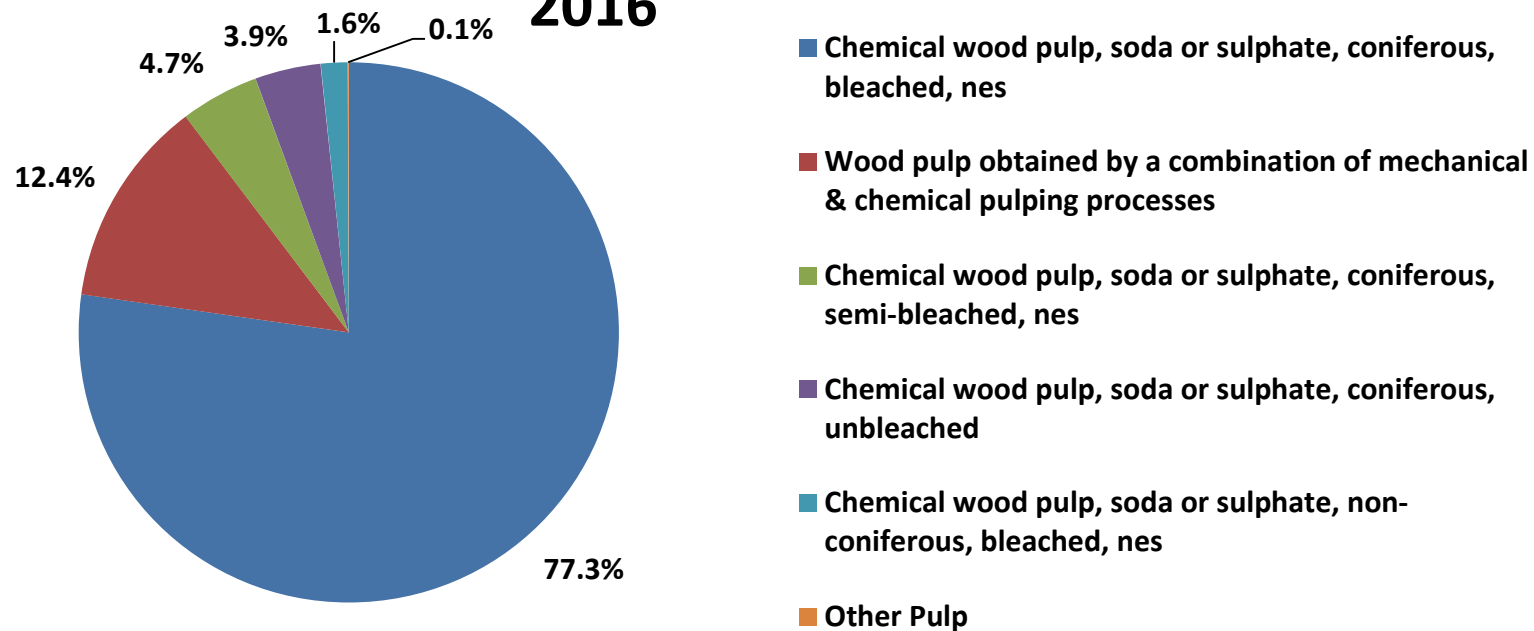


Data source: Statistics Canada; [CANSIM 304-0015](#). Converted paper includes products created from purchased paper and paperboard.

Products – Pulp and Paper – Total Paper Manufacturing sales were CA\$4.2 billion in 2016, decreasing by 7.5%. Pulp Mills declined 7.5% from 2015 to 2016, and accounted for 56% of total sales. Paper and Paperboard sales were down 10%, and Converted Paper was up 6.8%.



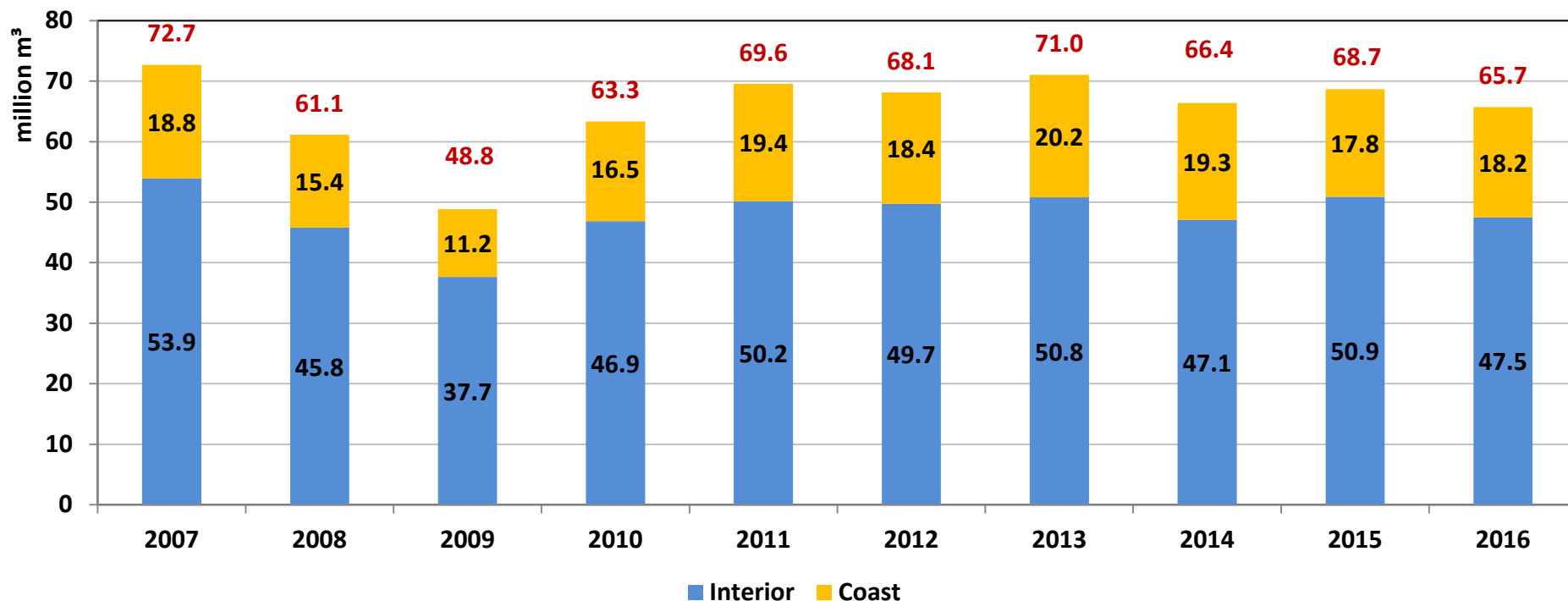
B.C. Pulp Export Share (4.0 million tonnes) by Product, 2016



Data source: Statistics Canada via BC Stats; CIMTD. Based on air dry tonnes. NES stands for "not elsewhere specified". Note historic data is subject to revisions.

Products – Pulp – Bleached sulphate (kraft) pulp dominates B.C.'s pulp exports.

B.C. Timber Harvest Volume

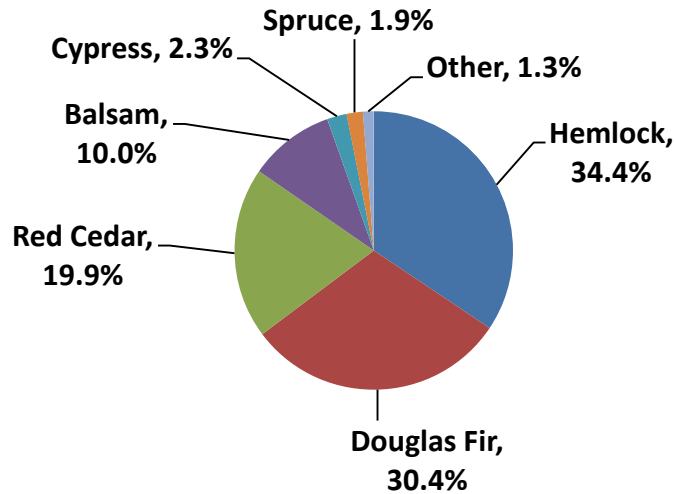


Data source: B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNR) [Harvest Billing System](#). All logs, special forest products, species and grades billed excluding waste, reject and Christmas trees, data run on May 1, 2017. Includes both Crown and private lands.

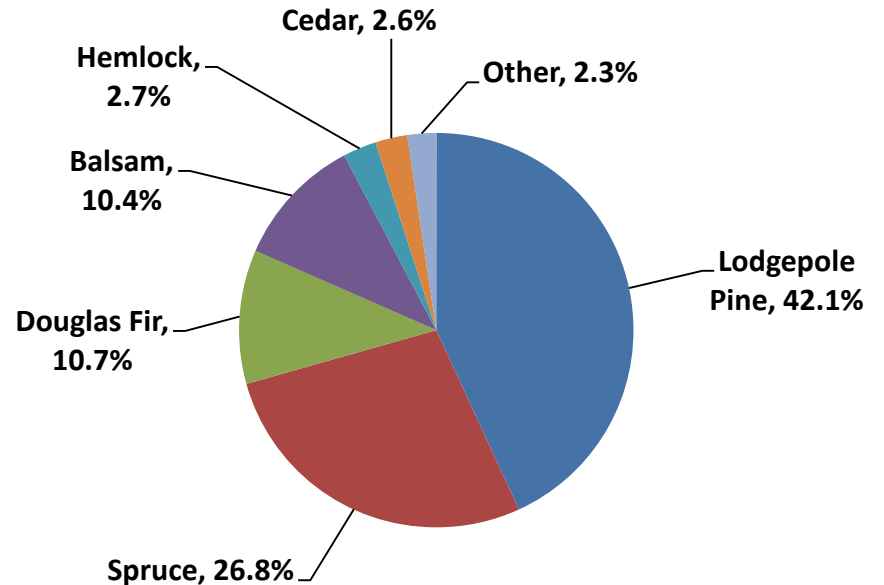
Products – Logs – Total harvest volume (65.7 million m³) was down 4.3% from 2015, and up 35% from 2009. The Interior accounted for 72% of the harvest, and the Coast for 28%. The last few years of harvest are close to pre-beetle harvest uplift, pre-housing boom levels.



Coast Harvest Volume Share by Species (18.2 million m³), 2016



Interior Harvest Volume Share by Species (47.5 million m³), 2016



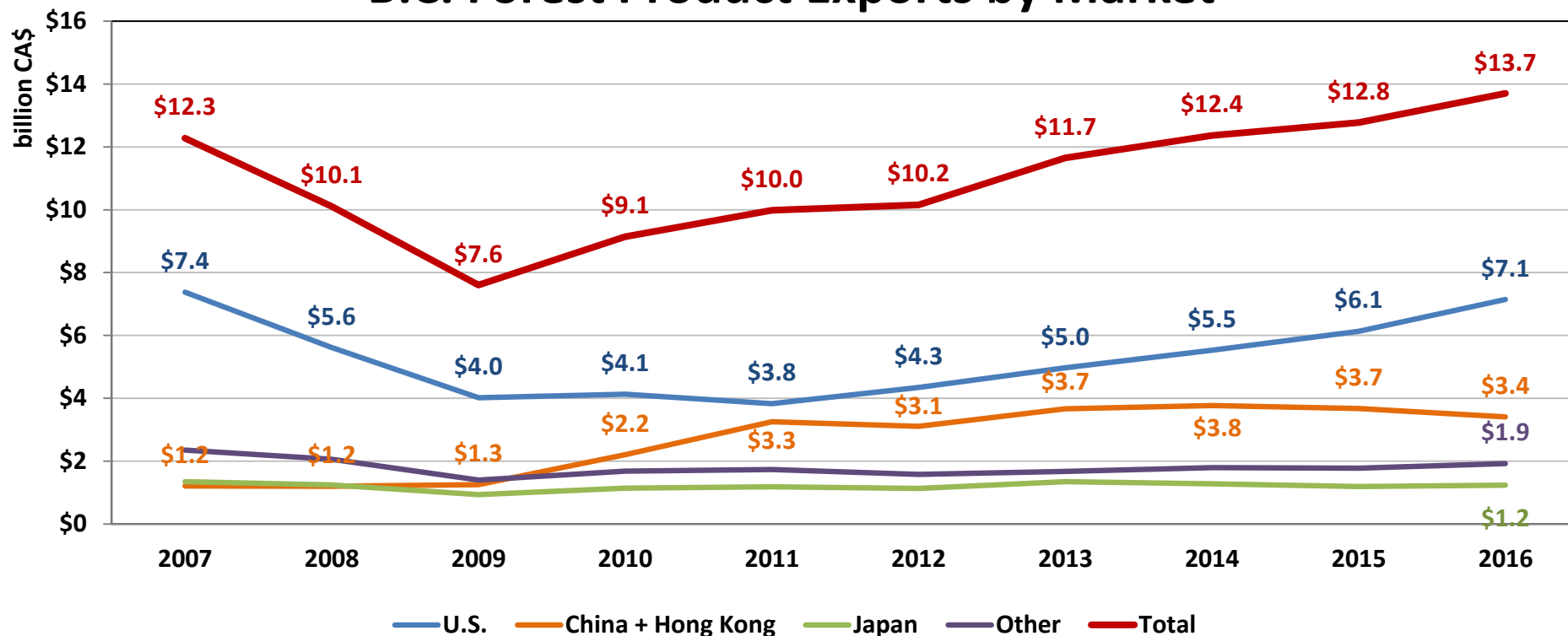
Data source: B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNR) [Harvest Billing System](#). All logs, special forest products, species and grades billed excluding waste, reject and Christmas trees, data run on May 1, 2017. Includes both Crown and Private lands.

Products – Logs – Hemlock and Douglas fir make up roughly 2/3 of the harvest on the Coast. In the Interior the main species is lodgepole pine, followed by spruce.

Markets Overview

- ❖ **The U.S., China, and Japan** are the top three export markets for the B.C. forest sector.
- ❖ **The U.S. is the largest market** and has improved substantially since 2009. It still has significantly less share of B.C. forest exports compared to pre-2009, but its value has increased steadily, with a large increase in 2016 (+\$1.0 billion).
- ❖ **China has increased** substantially over the last decade and is now in a strong second place. China's share had remained around 30% until 2016 when it decreased to 25%.
- ❖ **Japan has decreased** compared to the late 1990s, but value has been steady lately. In terms of share Japan remains in third place since 2009. Value was up \$37 million in 2016.
- ❖ **Other export markets** made up 14% of total forest sector exports in 2016, with notable destinations being South Korea, the U.K., Taiwan, and Indonesia.

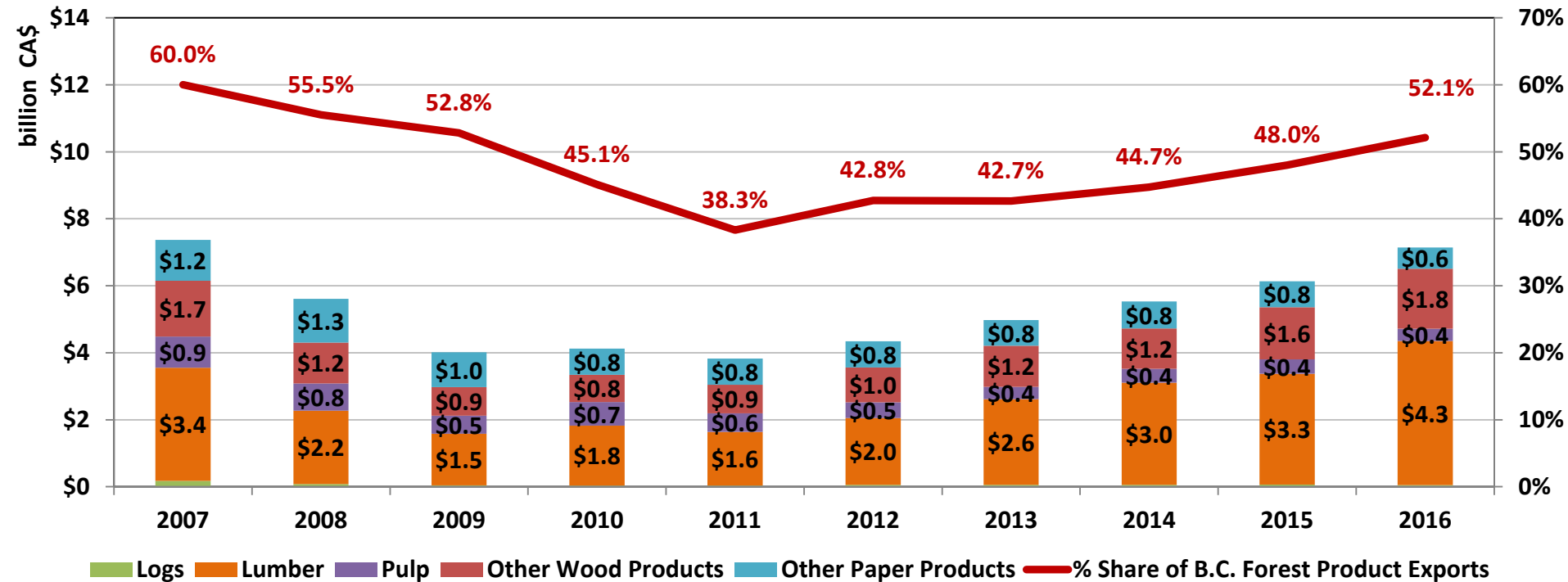
B.C. Forest Product Exports by Market



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions

Markets – The U.S. was the #1 export market by value, and has been increasing steadily since the housing crash. China became the #2 market in 2009 and has been a key driver of the forest sector’s recovery since then. Japan was #2 for many years, until 2009, and is now #3.

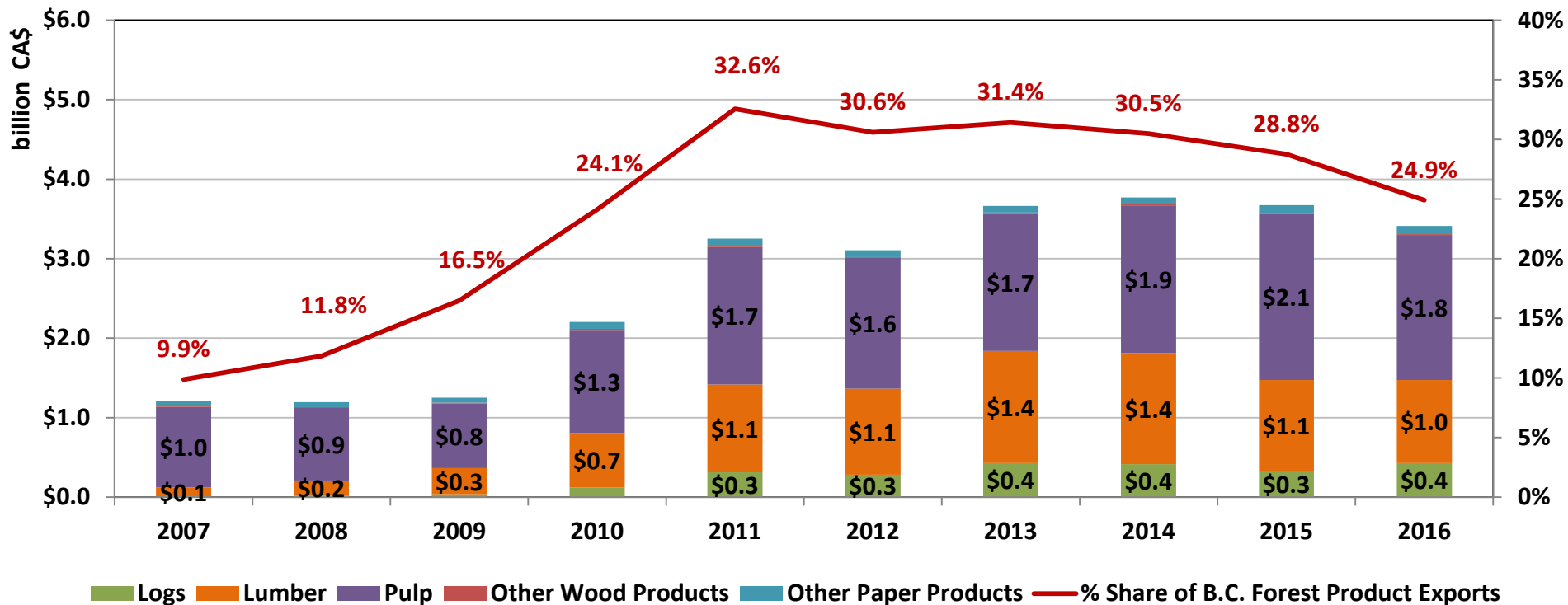
B.C. Forest Product Exports to the United States



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – U.S. – The U.S. was B.C.’s largest market in 2016 at CA\$7.1 billion, an increase of 16% over 2015. The U.S.’s share of B.C.’s forest product exports increased to 52.1%. The top 5 Other Wood Products were OSB, Veneer and Plywood (Douglas fir), Shakes, Shingles, and Siding.

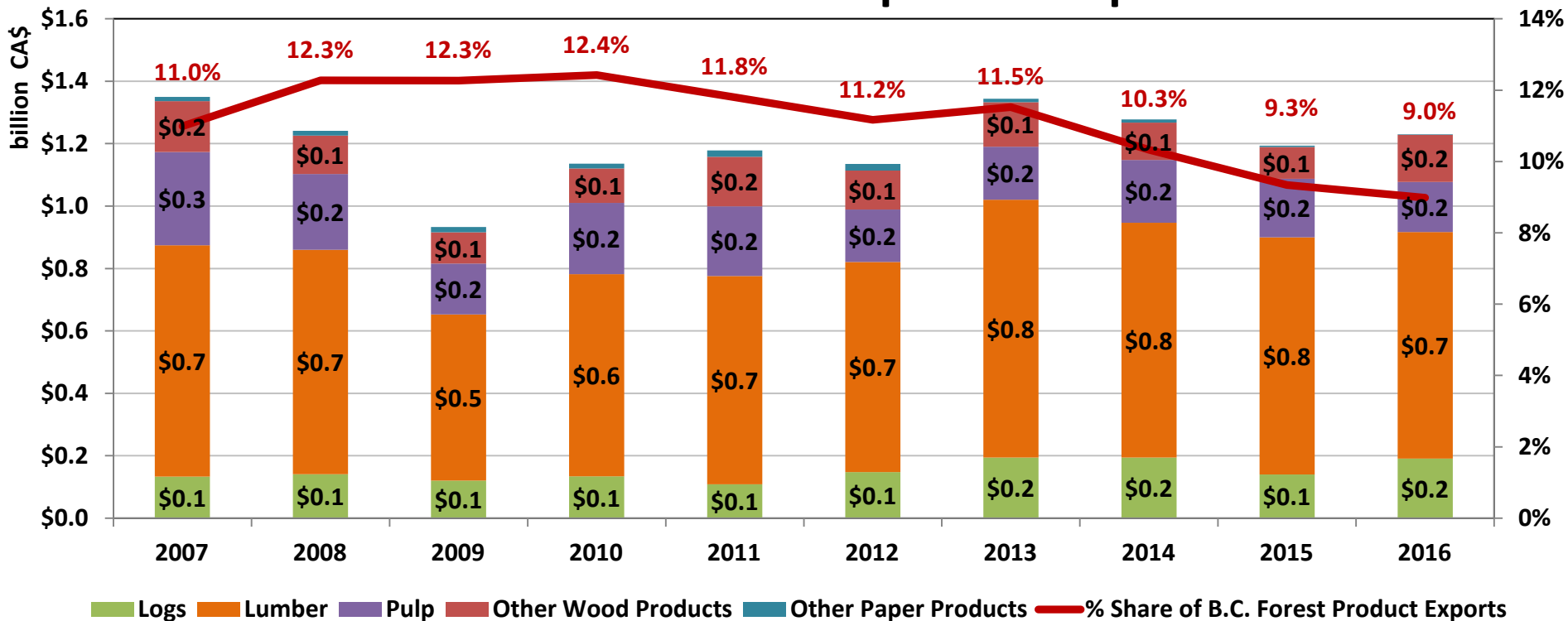
B.C. Forest Product Exports to China



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – China – B.C. forest product exports to China as a share of total B.C. forest exports fell to 24.9% of B.C.'s forest exports. The value in 2016 was CA\$3.3 billion, a decrease of 7.1% from 2015. Pulp is the dominant export product (53%).

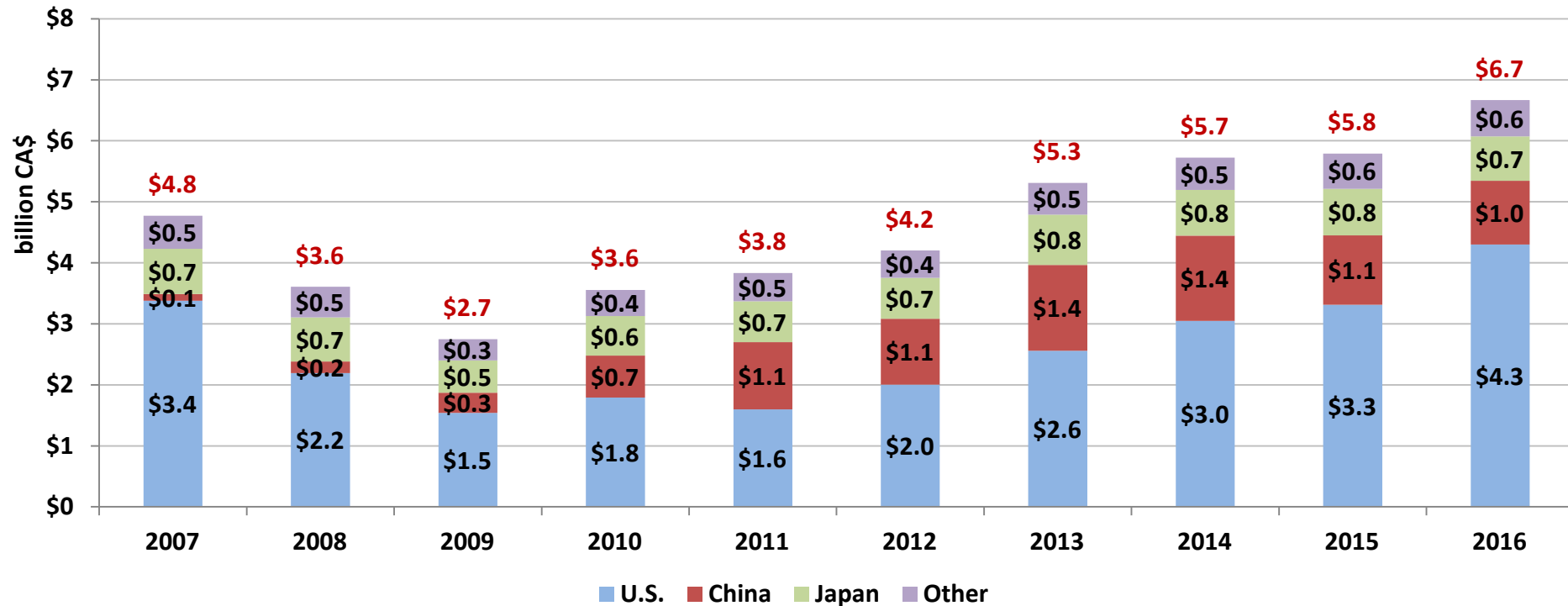
B.C. Forest Product Exports to Japan



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – Japan – B.C.’s exports to Japan have decreased about 75% from peak years in the mid-1990s, but exports have been relatively steady in recent years. Exports were valued at CA\$1.23 billion in 2016, an increase of 3.1% from 2015. Lumber had the highest share of value with 60% in 2016.

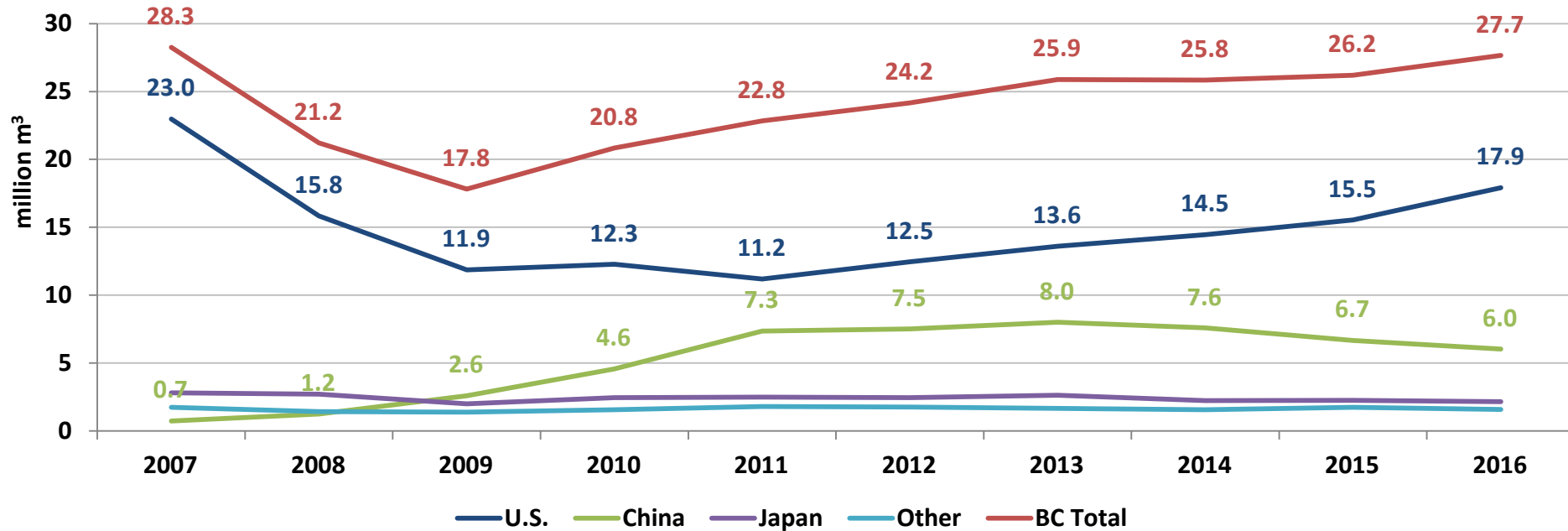
B.C. Softwood Lumber Exports by Market



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – Softwood Lumber – Prior to the U.S. housing crash B.C.’s lumber export market was heavily reliant on the U.S. Now other destinations, primarily China, have reduced the share of the U.S., though the U.S. still makes up the majority of B.C.’s lumber export value. 2016 saw a large increase in the value being shipped to the U.S. (+30%).

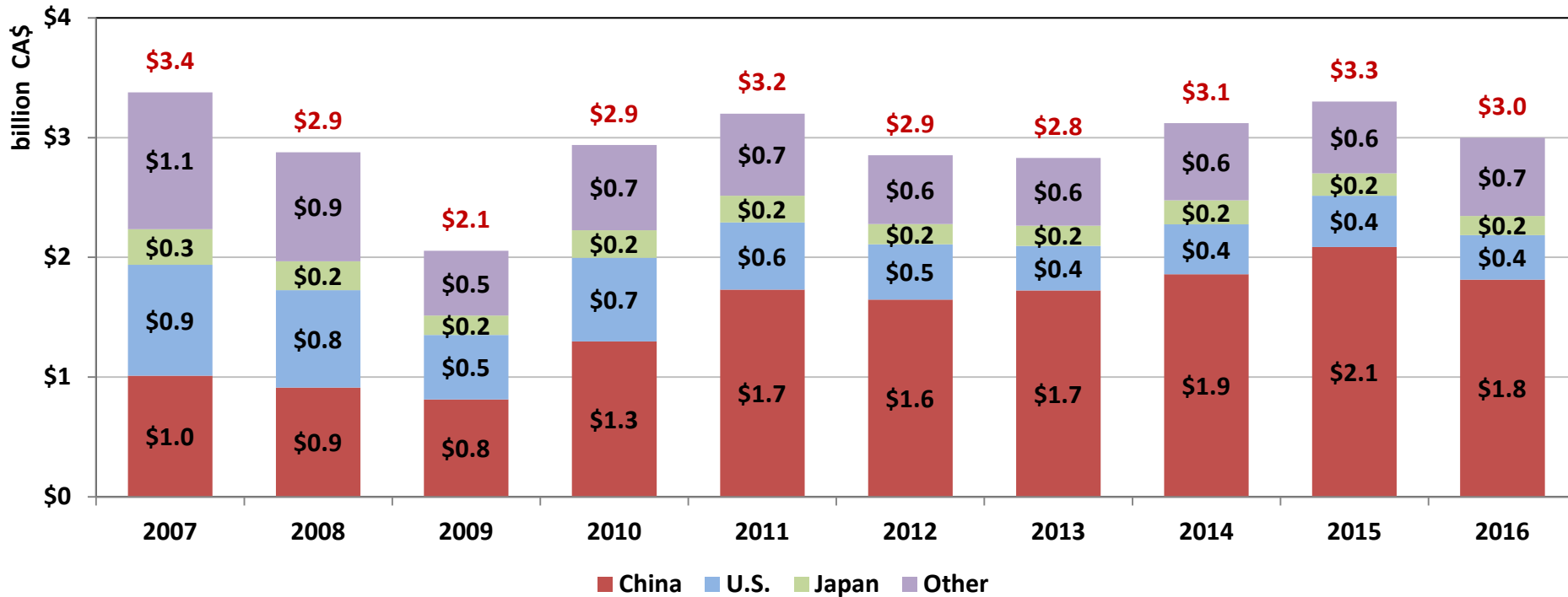
B.C. Softwood Lumber Export Volume by Market



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – Softwood Lumber – Prior to the U.S. housing crash B.C.’s lumber export market was heavily reliant on the U.S. Now other destinations, primarily China, have reduced the share of the U.S., though the U.S. had a major increase from 2015 to 2016 (+15%). Note: There was a 1.56 million m³ reduction of BC lumber exports to the U.S. in 2016 (-\$252 million). This was very similar to our estimate for a correction, and a major driver of the narrowing gap between manufacturing and export values in the original 2016 Annual Report.

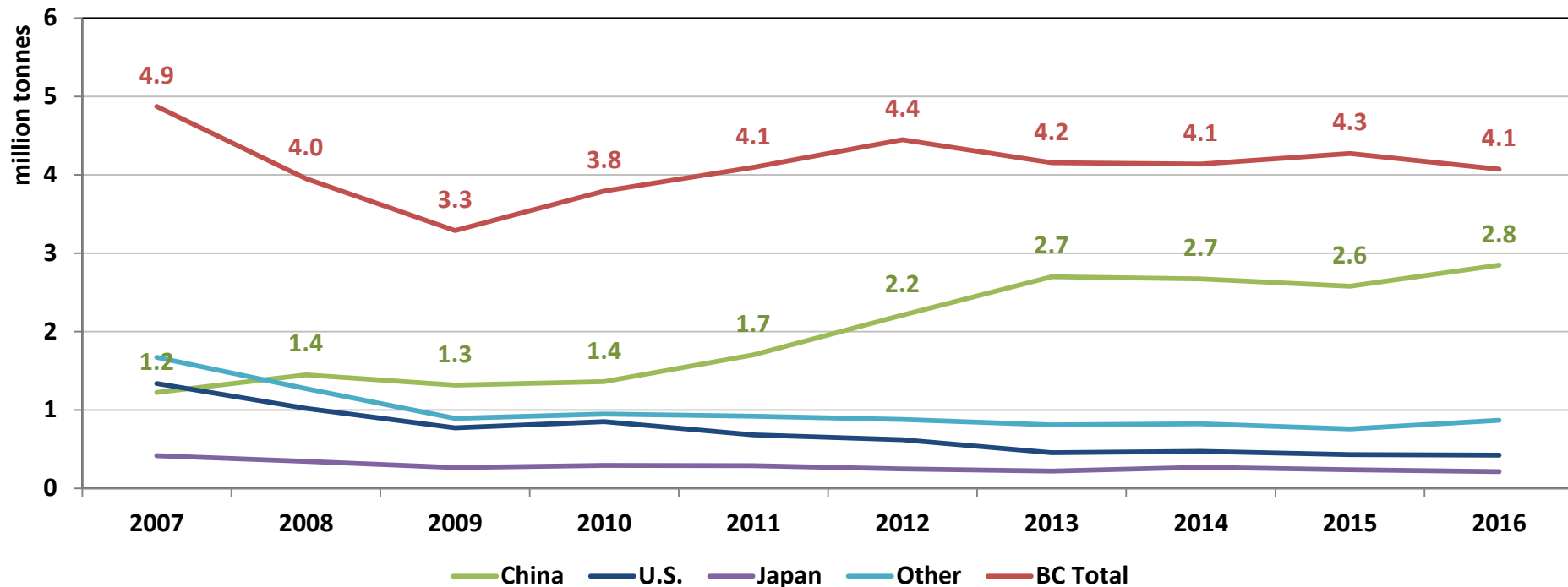
B.C. Pulp Export Value by Market



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – Pulp – China had a dominant 61% share of B.C. pulp exports in 2016, followed by the U.S. (12%), Japan (5%) and other destinations (22%).

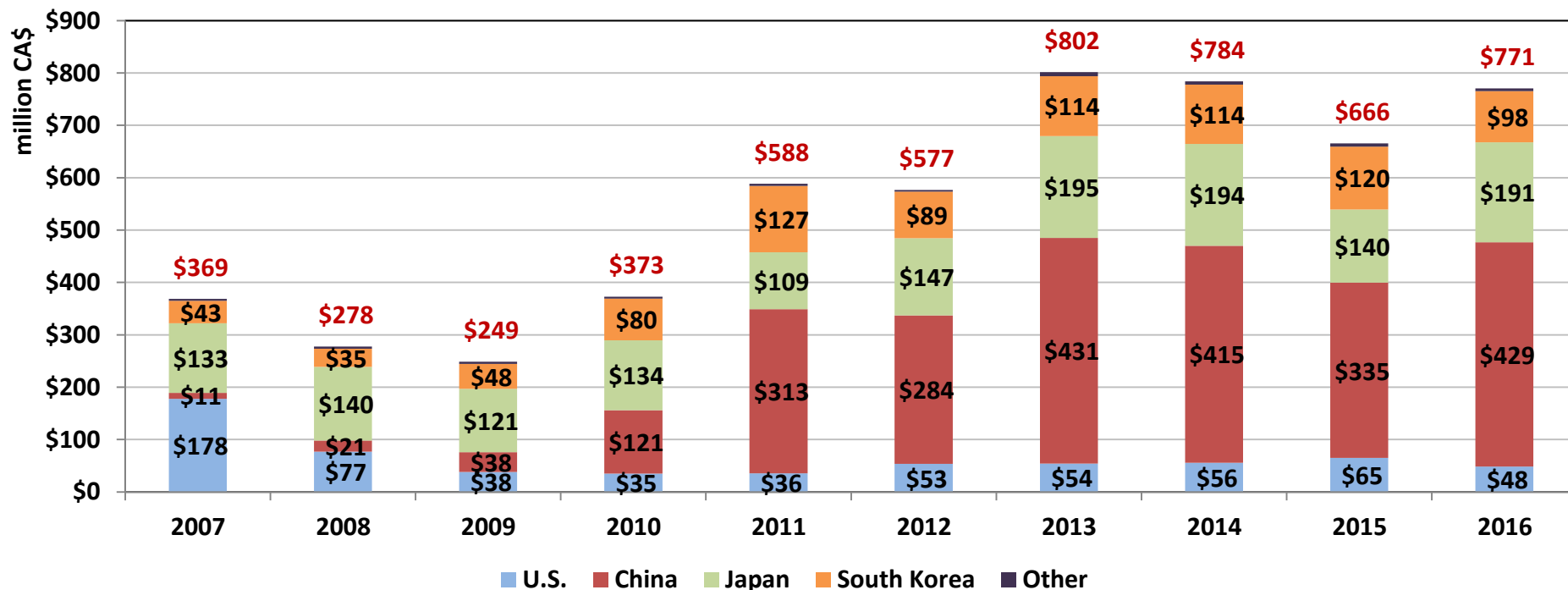
B.C. Pulp Export Tonnage by Market



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – Pulp – China had a dominant share of B.C. pulp exports in 2016. Over the past decade, exports to China have more than doubled.

B.C. Log Exports by Market

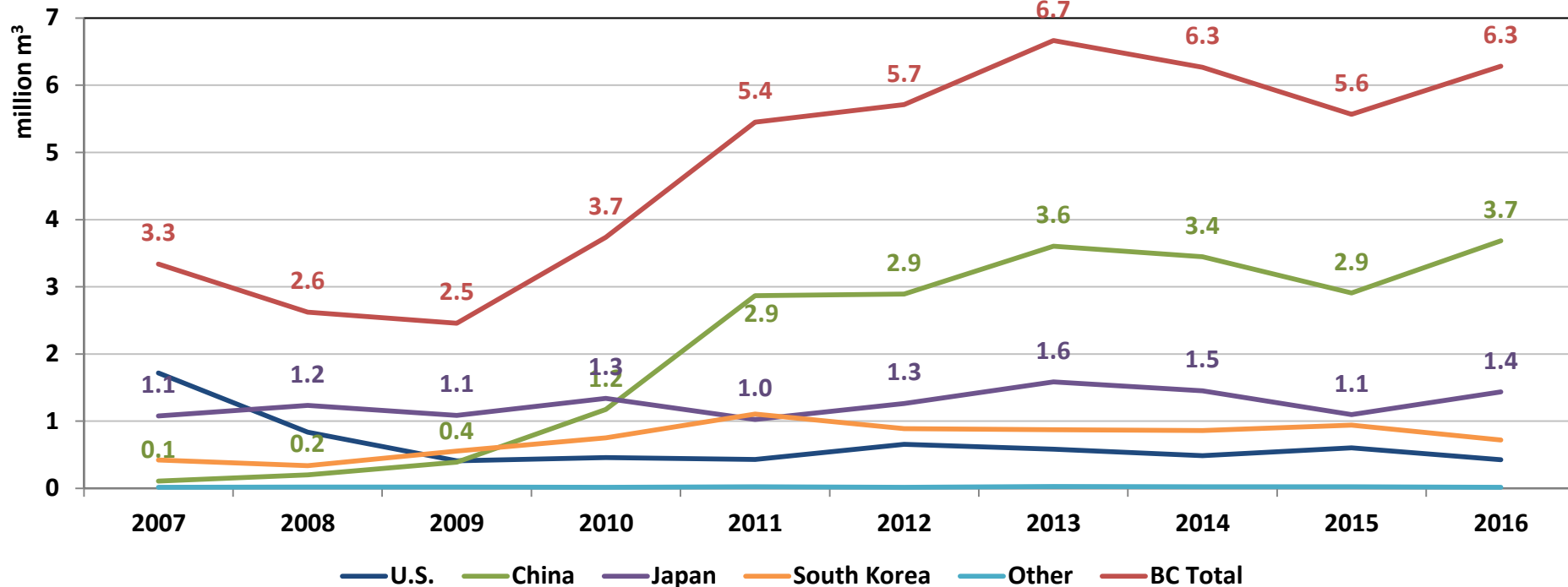


Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – Logs – The value of log exports increased by 16% in 2016. China (56%) remained the largest destination. South Korea (13%) and the U.S. (6%) decreased. Japan (25%) increased in 2016 over 2015. Over the past decade China replaced the U.S. as the main log export market.



B.C. Log Export Volume by Market



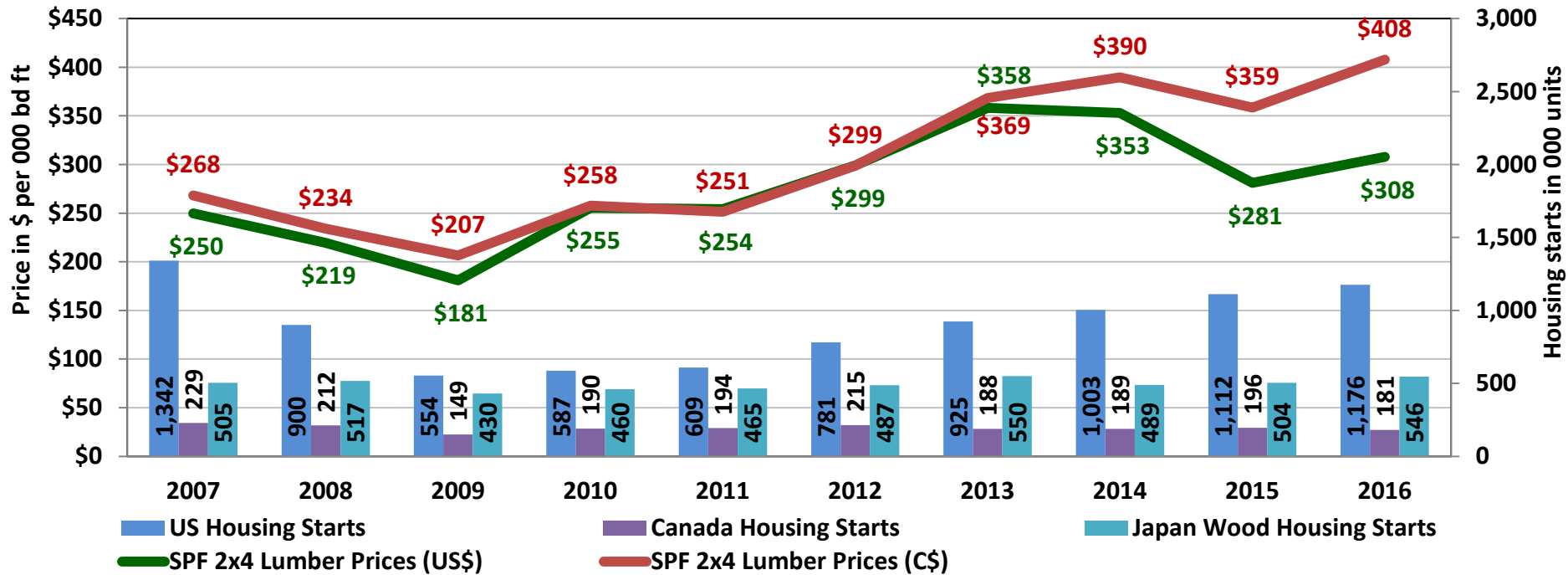
Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – Logs – The volume of log exports increased in 2016. China increased roughly 0.8 million m³. South Korea (11%) and the U.S. (7%) decreased. Japan (23%) increased in 2016 over 2015. Over the past decade China replaced the U.S. as the main log export market.

Overview of Sector Indicators

- ❖ **Prices and Costs:** Prices changes were a real mix from 2015 to 2016. Some products saw increases and others decreases. B.C. Interior sawmilling costs declined in 2016.
- ❖ **U.S. Housing Market:** U.S. housing starts were 1.2 million in 2016, the seventh year of gains since the 0.55 million start low in 2009. The share of multi-family starts is high, which reduces wood consumption compared to similar levels of starts in the past.
- ❖ **B.C.'s Share of Canadian Forest Export Value:** B.C.'s share increased slightly from 2015 to 2016, now accounting for 37% of Canadian forest product export value.
- ❖ **Government Revenues:** Direct forestry revenues to government increased 6.8% in fiscal year 2016/17 compared to 2015/16.

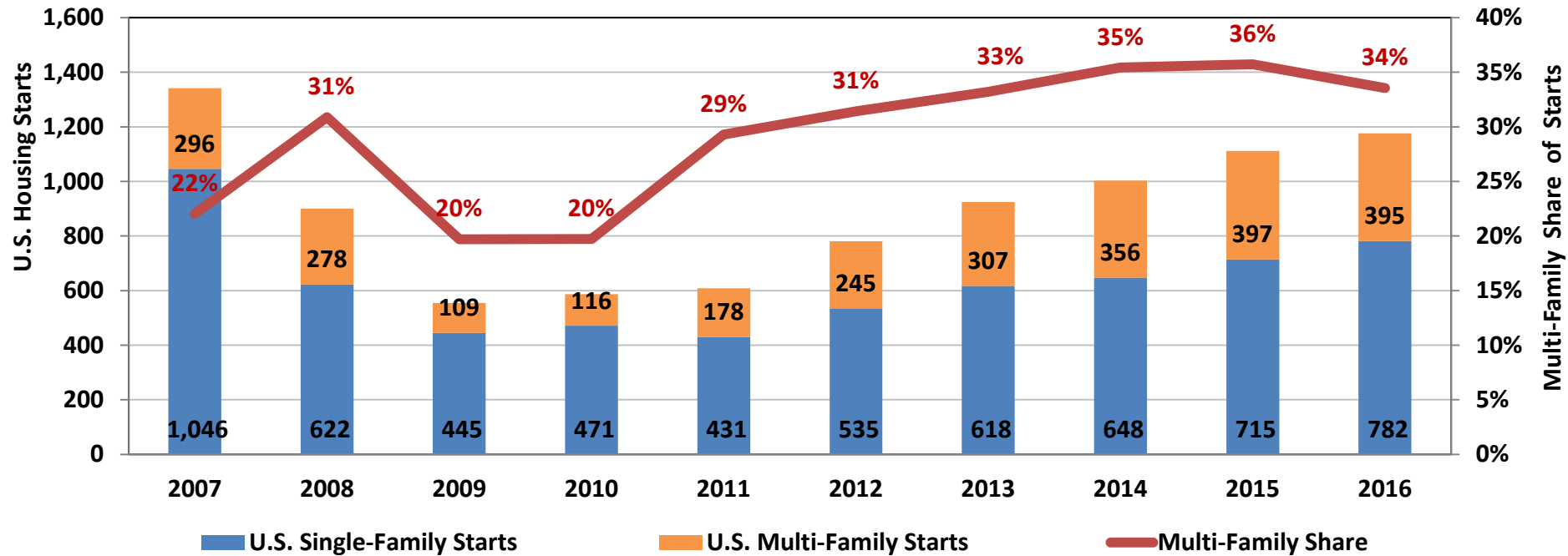
SPF 2x4 Lumber Prices and Housing Starts



Data sources: [Madison's Lumber Reporter](#) (SPF), [U.S. Census Bureau](#), [JAWIC](#) and [Statistics Canada](#).

Prices and Costs – North American and Japanese housing markets improved in 2016, but housing starts were still low compared to the early/mid 2000's. Average SPF 2x4 lumber prices rose slightly in 2016. The Canadian dollar also depreciated slightly which boosted the price in Canadian dollars.

U.S. Housing Starts: Single vs. Multi-Family Units

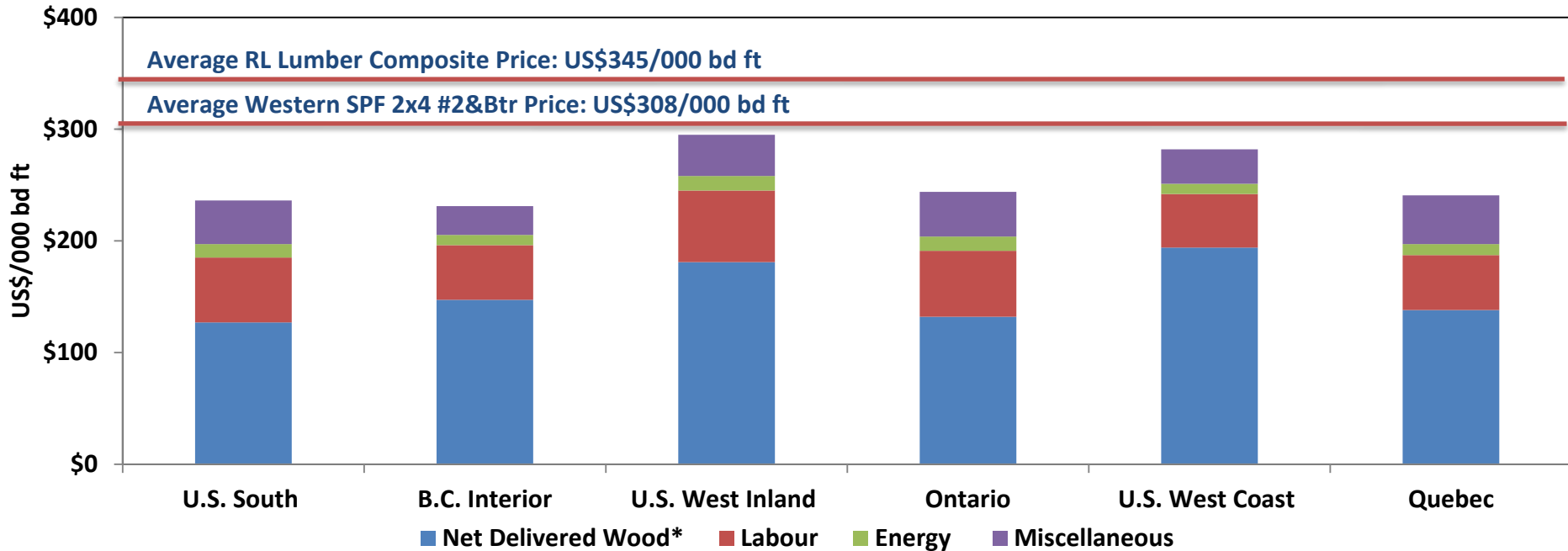


Data sources: [U.S. Census Bureau](#).

Prices and Costs – The share of multi-family starts has been increasing since 2010, and 2016 was the first year the share fell. The last time the share was this high was in the 1980s. Multi-family units use roughly 66-75% of the wood that a single family unit does.



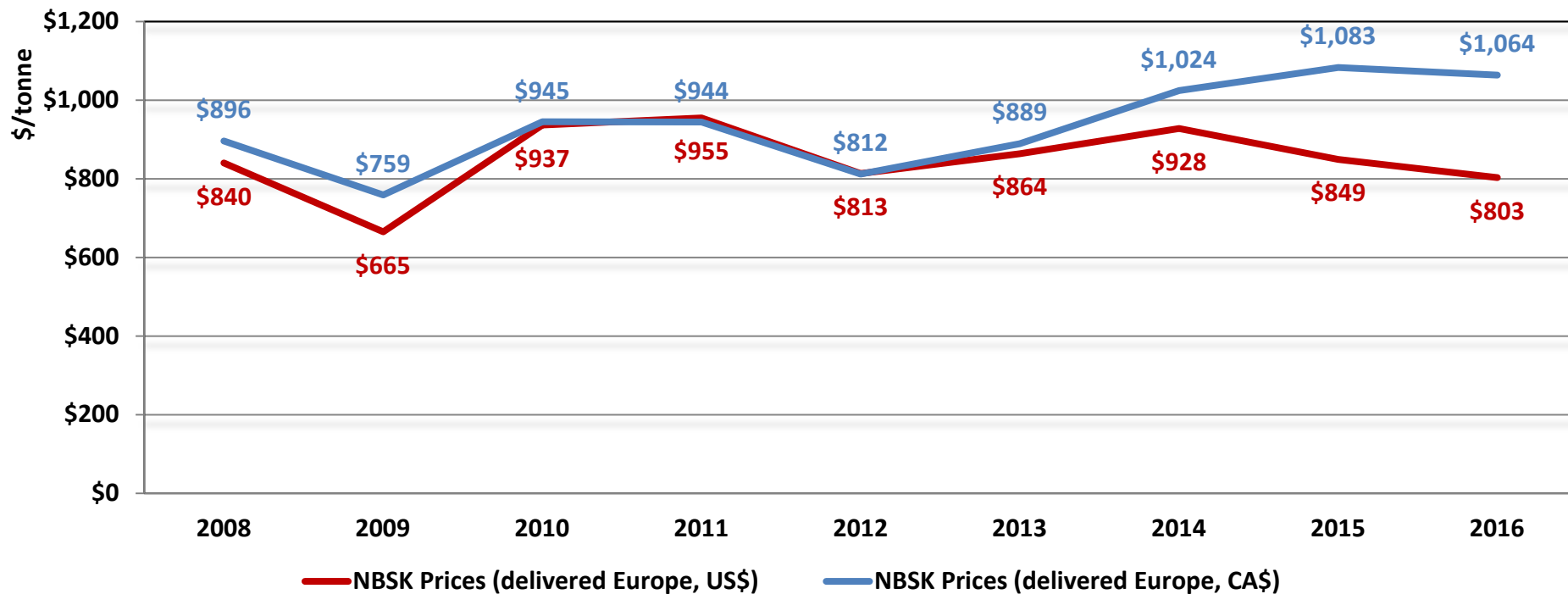
Softwood Lumber Mills' Variable Costs (2016)



Data source: Costs are from [Forest Economic Advisors \(FEA\)](#), composite from [Random Lengths](#), and SPF 2x4 from [Madison's Lumber Reporter](#).

Prices and Costs – In 2016, B.C. Interior softwood lumber mills had the lowest variable costs across the U.S. and Canada. The Interior is just barely below the U.S. The South was the lowest cost producer for several years prior to 2016.

Market Pulp Prices



Data source: [Equity Research Associates \(ERA\)](#).

Prices and Costs – Pulp prices declined in 2016. Pricing of pulp in U.S. dollars protected B.C. producers from some of the price decline.



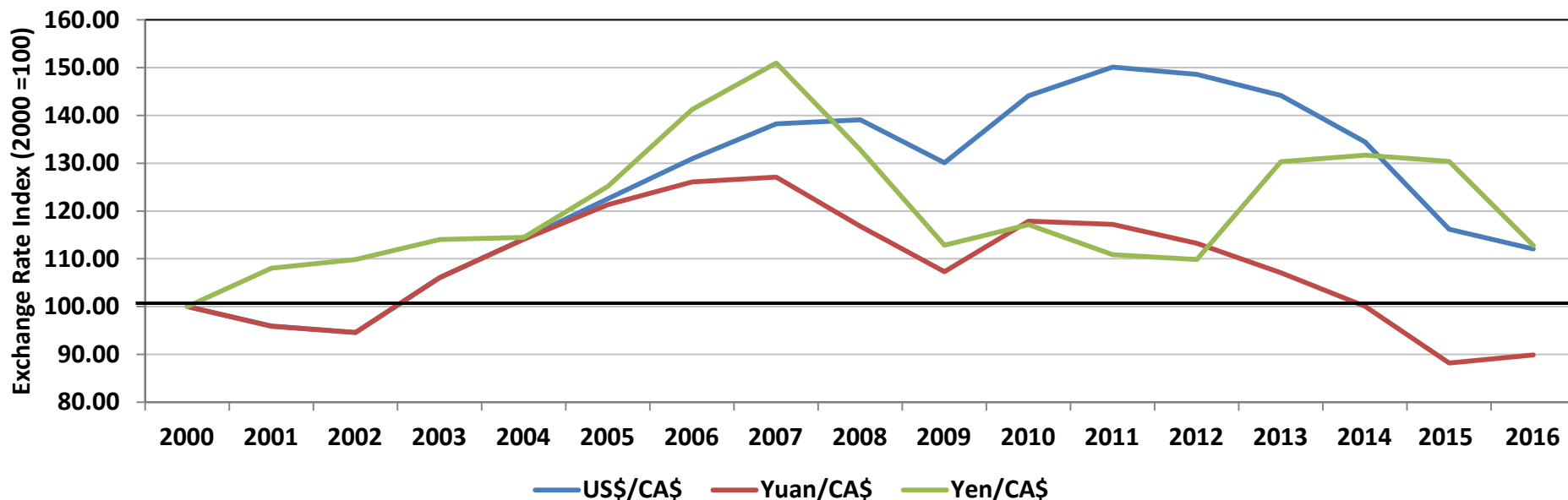
2000 Exchange Rates

0.67 US\$/CA\$
5.58 Yuan/CA\$
72.62 Yen/CA\$

2016 Exchange Rates

0.75 US\$/CA\$
5.01 Yuan/CA\$
81.90 Yen/CA\$

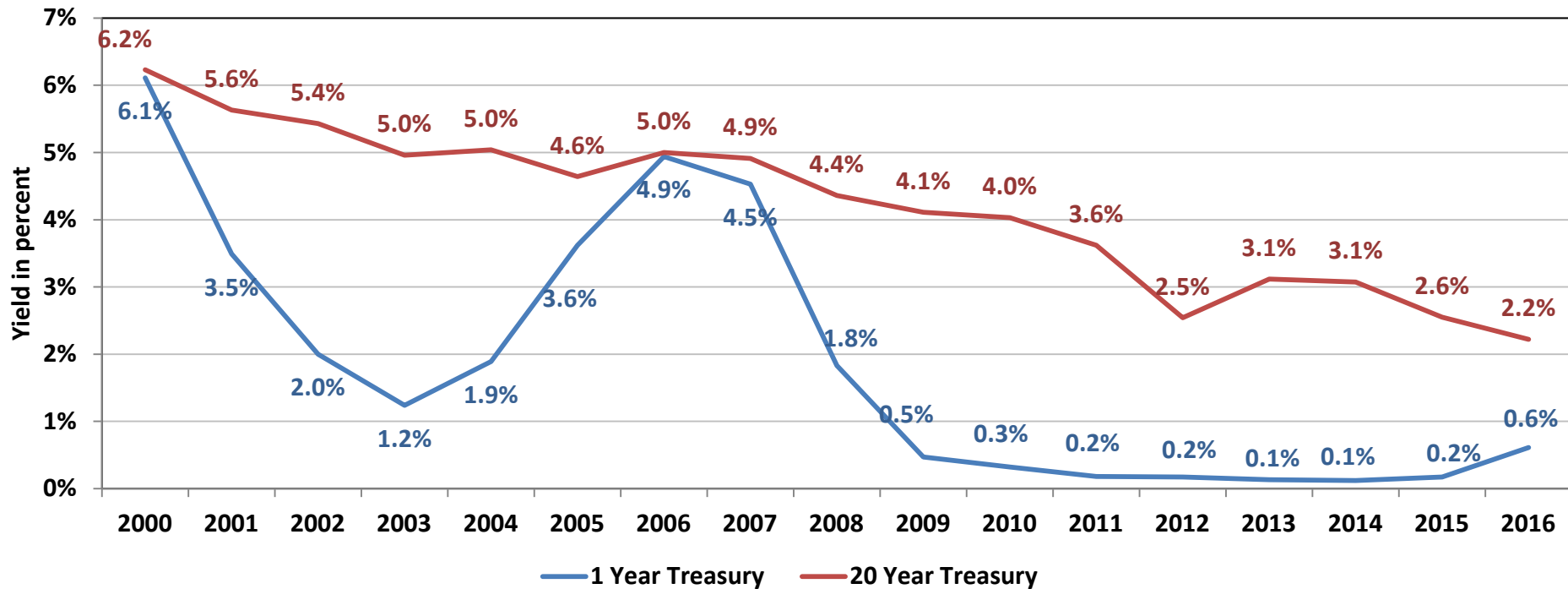
Indexed Foreign Exchange Rates Relative to CA\$



Data source: 2000-2006, [OANDA](#). 2007-2016, [Bank of Canada](#).

Prices and Costs – This shows the percent change in CA\$ exchange rates compared to 2000. Increases indicate appreciation of the CA\$ and make Canadian exports less competitive. By the end of 2016 the CA\$ depreciated against the US\$ and Yen compared to 2015, but both are still above the rates in 2000. The CA\$ appreciated slightly against the Yuan, the first appreciation since 2010.

U.S. Treasury Bill Yields

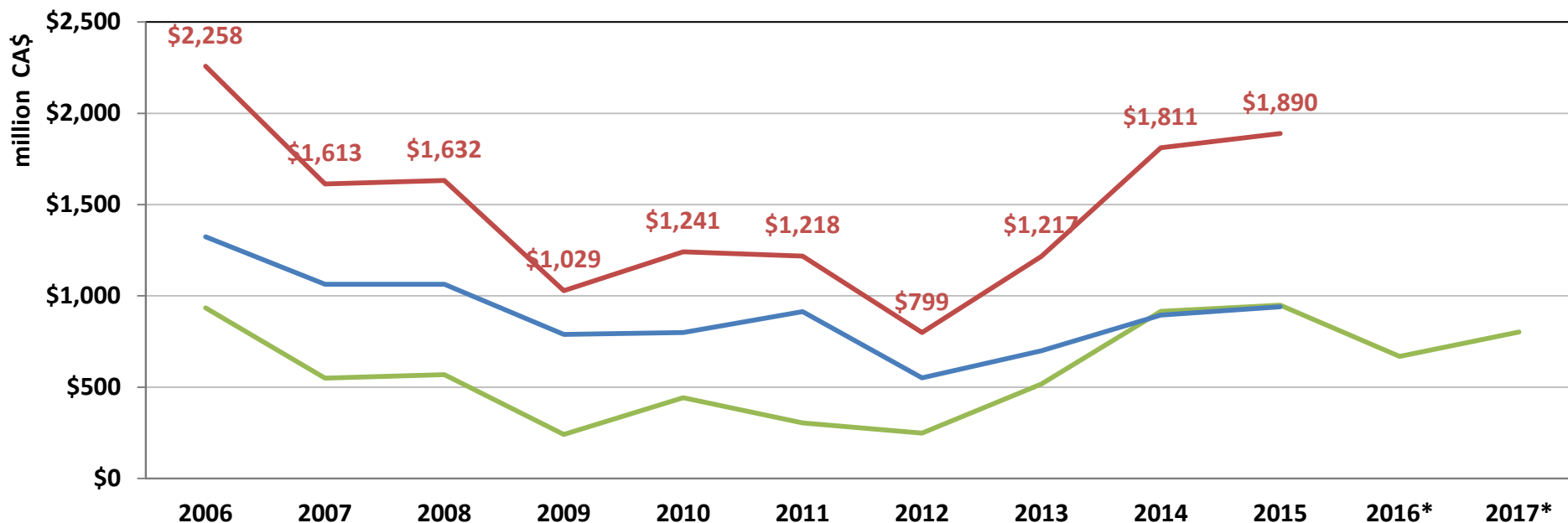


Data source: [U.S. Department of the Treasury](http://www.treasury.gov).

Prices and Costs – The cost of short-term borrowing increased in 2016, but long-term borrowing rates fell again. After the financial crisis of 2008, rates were lowered to stimulate the economy, and they continue to remain low.



B.C. Forest Sector Capital and Repair Expenditures



Data quality grade is often "Use with caution".

*Preliminary and intentions, subject to change.

— Capital Expenditure

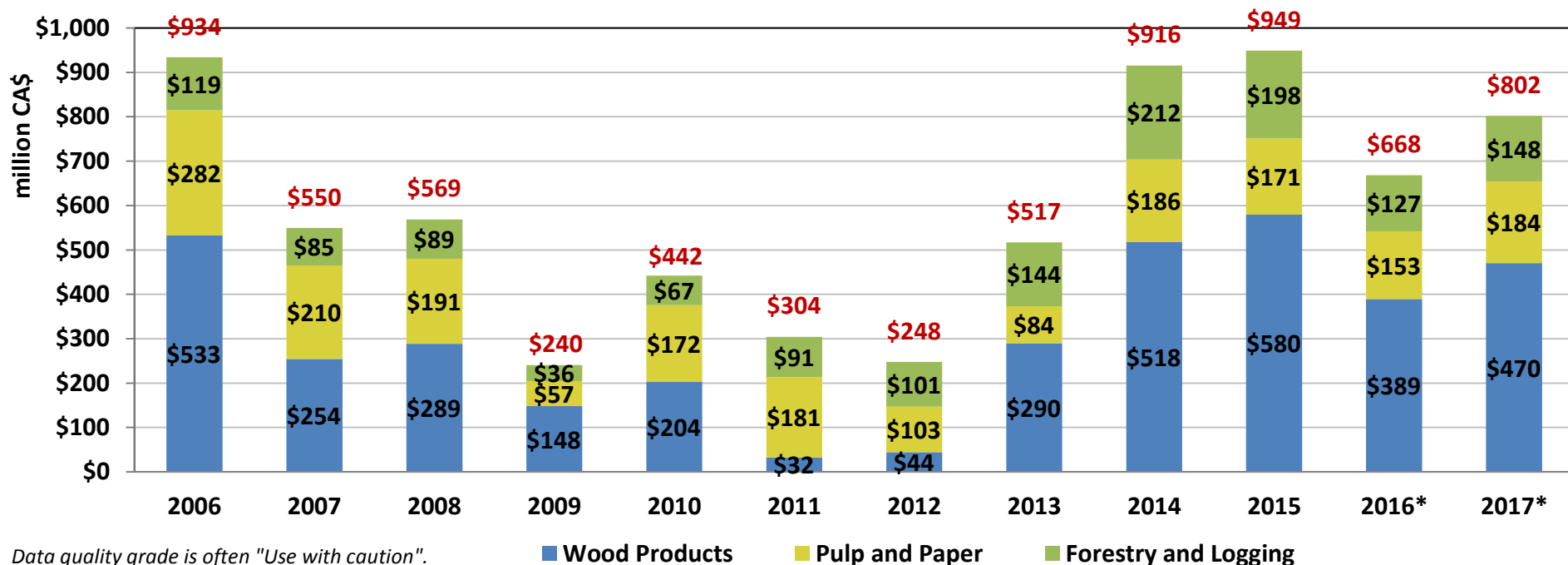
— Repair Expenditure

— Total Forestry Expenditure

Data source: Statistics Canada; [CANSIM 029-0045](https://www150.commodity.cansim.ca/cansim/029-0045).

Investment – B.C. forest sector investment (CA\$1,890 million) increased 4.3% from 2014 to 2015. Expenditure includes investment in construction (e.g. buildings and land improvements) and in machinery and equipment. 2015 is the latest year for repair expenditure.

B.C. Forest Sector Capital Expenditure



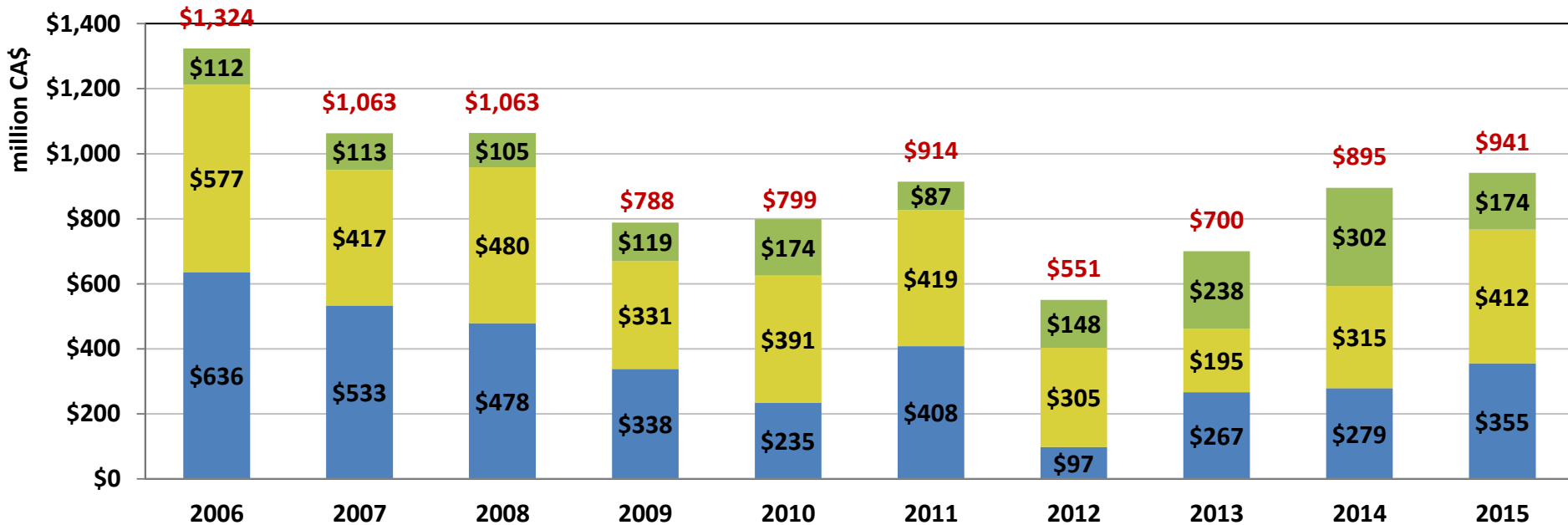
Data quality grade is often "Use with caution".

*Preliminary and intentions, subject to change.

Data source: Statistics Canada; [CANSIM 029-0045](https://www150.statcan.gc.ca/n1/pub/29-0045).

Investment – From 2014 to 2015 capital expenditure increased 3.6%, 2016 preliminary results indicate a 3.6% increase from 2014 to 2015, and 2016 intention a decrease of 30% from 2015. Capital expenditure includes investment in construction (e.g. buildings and land improvements) and in machinery and equipment.

B.C. Forest Sector Repair Expenditure

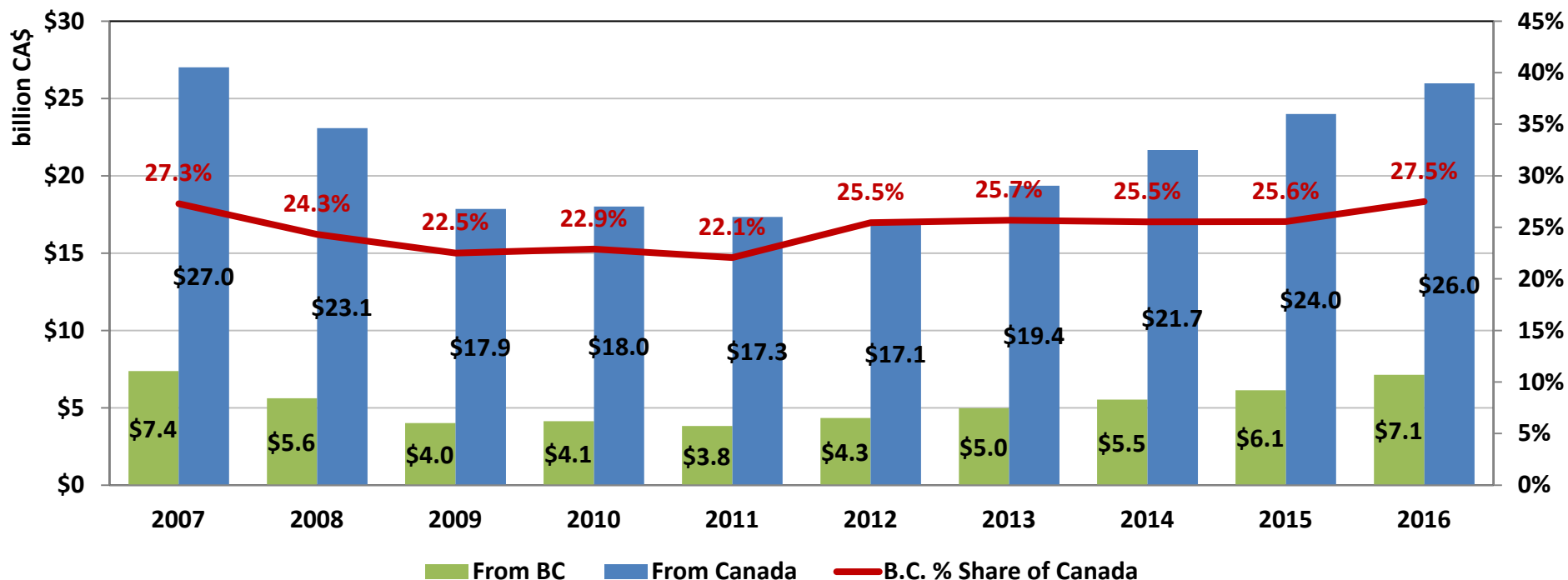


Data quality grade is often "Use with caution". ■ Wood Products ■ Pulp and Paper ■ Forestry and Logging

Data source: Statistics Canada; [CANSIM 029-0045](#).

Investment – 2015's results indicate B.C. forest sector repair expenditures increased 5.1% from 2014. Repair expenditure includes investment in construction (e.g. buildings and land improvements) and in machinery and equipment. 2015 is the latest data for repair expenditure.

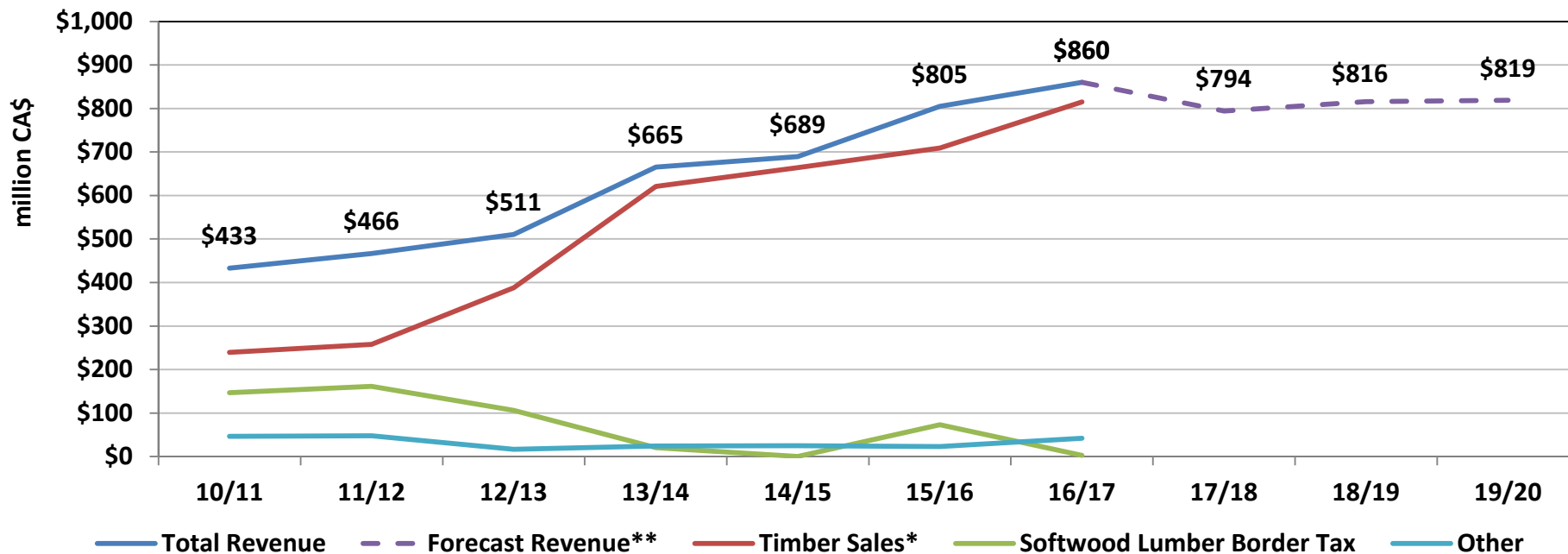
Forest Product Exports to U.S.: B.C. and Canada



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note sources may differ slightly and historic data is subject to revisions.

B.C.'s Share – B.C.'s share of Canadian forest exports increased in 2016. Both B.C. and Canada saw the total value of forest exports rise in 2016.

B.C. Government Forest Sector Revenue, by Fiscal Year



*Timber Sales includes BCTS sales. **Excludes Recoveries, and Logging Tax.

Data source: B.C. FLNR. Corporate and personal income taxes are not included in these figures. While not identical, similar numbers can be viewed in the B.C. Ministry of Finance [Budget and Fiscal Plan](#), page 118. Forecasts are from the 2017/18 to 2019/20 Budget and Fiscal Plan dated February 21, 2017.

Government Revenues – In 2016/17, the B.C. government received direct forest revenues of CA\$860 million, an increase of roughly CA\$55 million over the previous year. Revenue from timber sales increased by CA\$160 million in 2016/17.

Conclusions

- ❖ **B.C.'s forest sector showed improvement in manufacturing sales and exports in 2016. Pulp and Paper products declined, but this was offset by strong wood products performance. Harvest declined roughly 3 million m³.**
- ❖ **Chinese demand for logs, lumber, and pulp continued to be a key market for the B.C. forest sector. Russia continued to increase market share and volumes in China as China's total lumber imports rose again. Canada's lumber export volume to China declined, though the decline to China was offset by strong lumber exports to the US.**
- ❖ **Compared to pre-recession, B.C.'s forest sector has better diversity in export destinations. China has a major share, and the U.S. and Japan continue as major markets. The B.C. forest sector is trying to further this diversification by promoting sales to India, and expanding into new products such as engineered lumber and wood pellets.**

Outlook

- ❖ Stronger demand (mainly from a recovering U.S. market) and weaker B.C. timber supply are expected to have a positive influence on prices. So far in 2017 lumber prices have been strong, but it's difficult to tell how much has been driven by B.C. wildfires and the U.S.' preliminary-tariffs on lumber (CVD 19.88%, AD 6.87% averages) vs. changing consumer demand.
- ❖ China continued as the world's largest importer of logs and lumber in 2016, with large increases in log and lumber imports. This demonstrates China is continuing as a strong market, but Russia's continued increase in supply to China may harm B.C. exporters.
- ❖ The softwood lumber dispute adds additional uncertainty to the U.S. lumber market. Negotiations are ongoing and so are the U.S.'s investigations for final countervailing duty and anti-dumping duty rates by late 2017 or early 2018.

Outlook - Continued

- ❖ Foreign demand for wood pellets has been strong and B.C. exports increased roughly 50% in 2016. The U.K. is the number one destination. Japan and Belgium also took large volumes in 2016.
- ❖ Innovations and investments in markets, products and technologies will make the sector more competitive. Changing building codes to allow tall wood buildings, such as [UBC's 18 storey residence](#), and encouraging wood use over other building materials in general, are just two examples of programs that could grow the forest sector.
 - ❖ UBC's brock residence used an estimated 2,233 m³ of Cross-Laminated-Timber or Glulam, which is equivalent to the amount of lumber used in 60 single-family houses in Canada*.

Appendix

❖ Overview (43-54)

- ❖ Manufacturing sales, exports, GDP, Employment

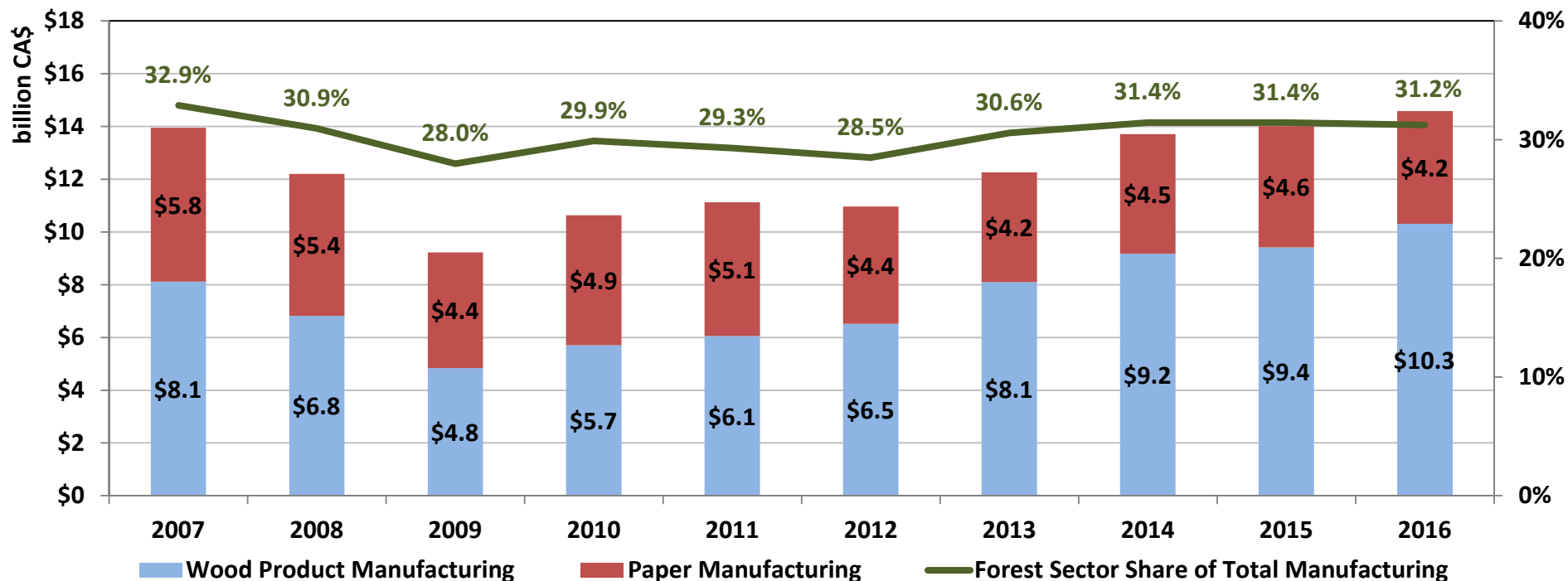
❖ Products (55-65)

❖ Markets (66-73)

❖ Competitiveness (74-82)

❖ Additional Sources (83)

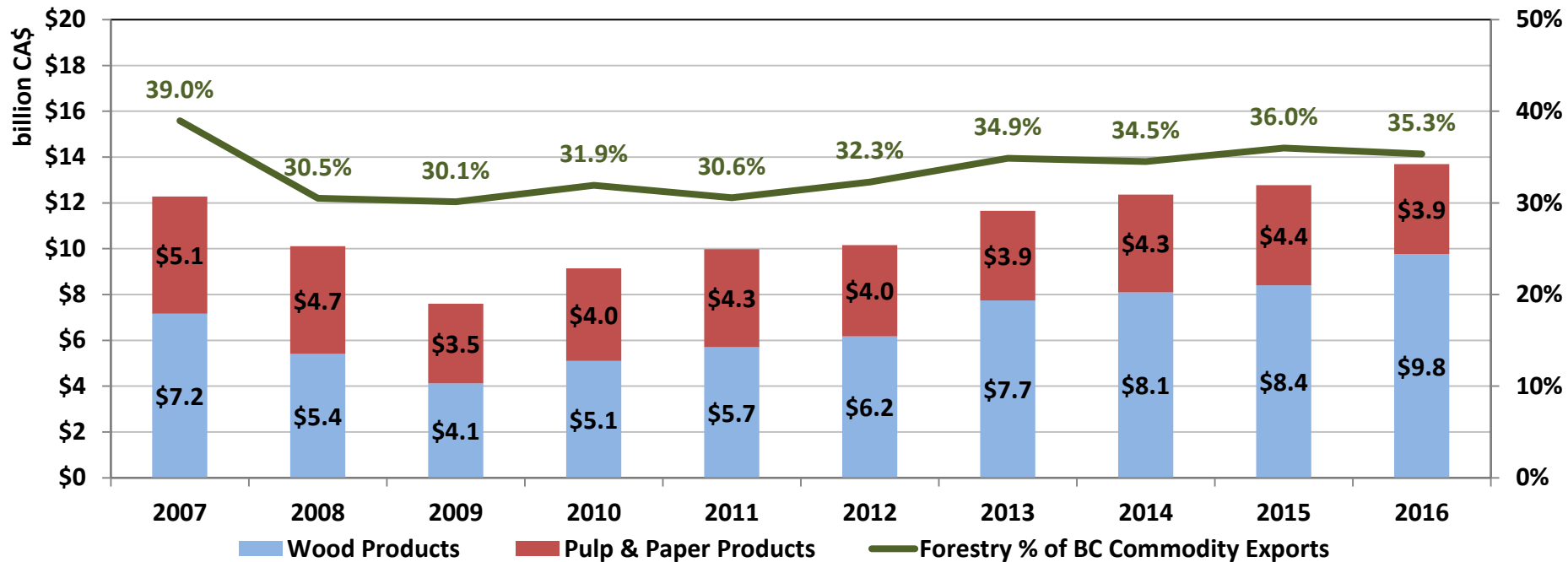
B.C. Forest Sector Manufacturing Sales



Data source: Statistics Canada; [CANSIM 304-0015](#).

Overview Indicator 1a – B.C. forest sector manufacturing sales (CA\$14.6 billion) increased 4.0% from 2015. The forest sector accounted for 31% of B.C. manufacturing sales.

B.C. Forest Sector Exports

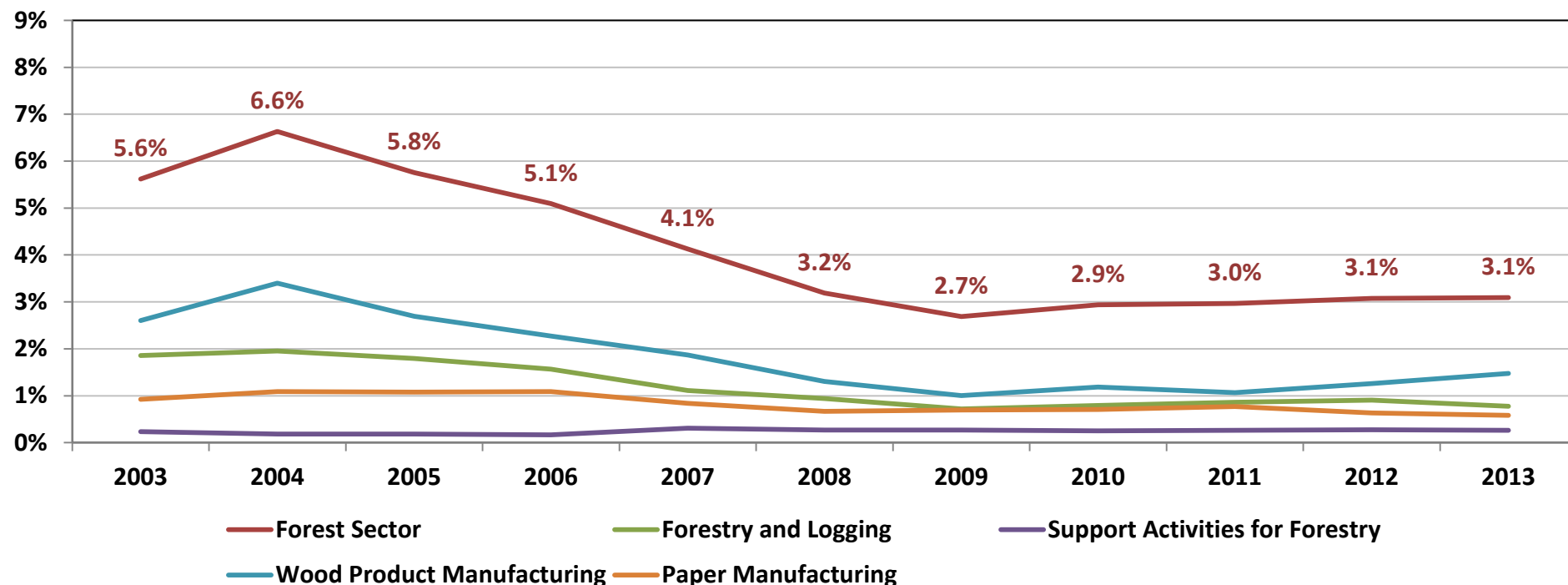


Data source: [B.C. Stats](#) extract from Statistics Canada data. Does not include products shipped to other regions of Canada. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Overview Indicator 1b – B.C. forest product exports (CA\$13.7 billion) increased 7.3% from 2015, and 80% from 2009. The forest sector’s share of total B.C. export value trended down from 2000 to 2008, was relatively constant from 2008 to 2011, and has since increased about 5 percentage points.



Forest Sector's Share of B.C. GDP, in Current Dollars

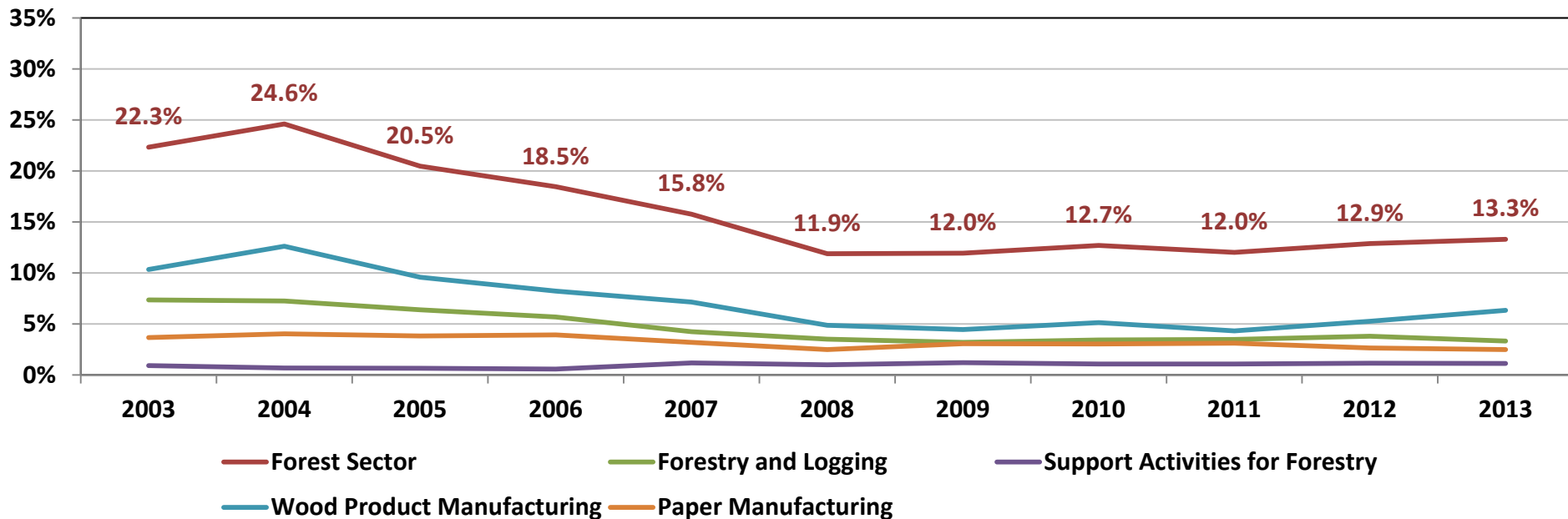


Data source: Statistics Canada. Source prior to 2007: [CANSIM 381-0015](#). For 2007 onwards: [CANSIM 379-0030](#). Based on current dollar data with 2013 being the latest available data.

Overview Indicator 2a – GDP in current dollars allows comparisons between sectors, industries (subsectors) and the provincial economy as a whole in a given year. It does not adjust for inflation. The decline in forestry's share over time is largely due to GDP growth of the B.C. economy as a whole (notably the service industry and real estate). Since 2009 the share has been fairly stable.



Forest Sector's Share of B.C. Goods Manufacturing GDP, in Current Dollars



Data source: Statistics Canada. Source prior to 2007: [CANSIM 381-0015](#). For 2007 onwards: [CANSIM 379-0030](#). Based on current dollar data with 2012 being the latest available data.

Overview Indicator 2b – GDP in current dollars allows comparisons between sectors, industries (subsectors) and other sectors, such as the Goods Manufacturing sector, in a given year. It does not adjust for inflation. Since 2008 the Forest Sector has made up 12-13% of Goods Manufacturing GDP.

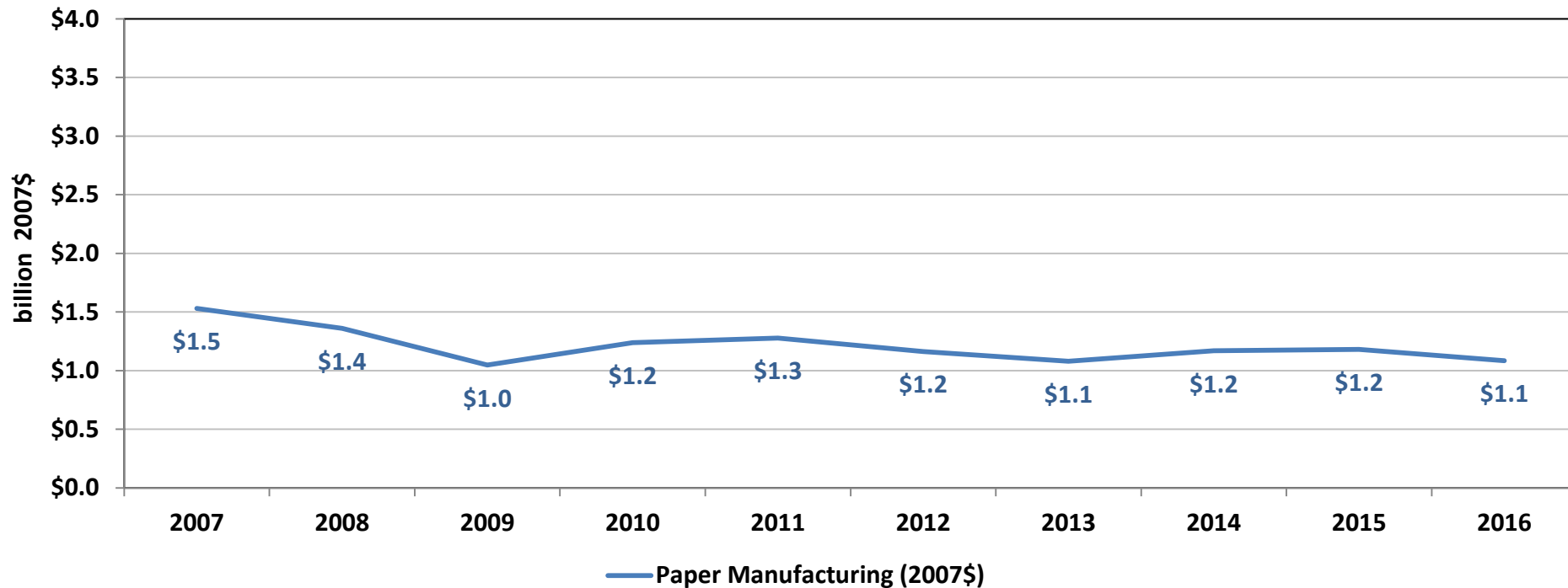
B.C. Wood Products Manufacturing GDP, in Chained Dollars



Data source: Statistics Canada; [CANSIM 379-0030](#).

Overview Indicator 2c – Wood Product Manufacturing GDP has been climbing steadily since the low of 2009. Chained dollar GDP adjusts for changes in prices and quantities, and shouldn't be compared across sectors, nor added across sectors.

B.C. Paper Manufacturing GDP, in Chained Dollars

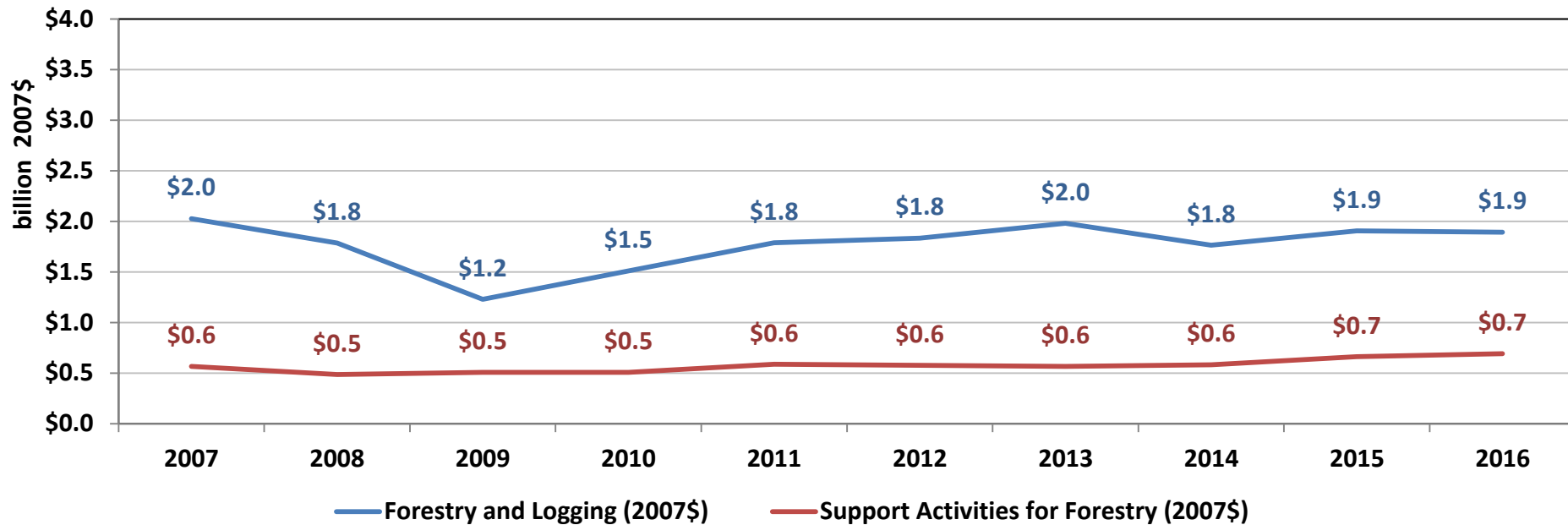


Data source: Statistics Canada; [CANSIM 379-0030](#). Paper Manufacturing includes the Pulp industry.

Overview Indicator 2d – This chart shows the **GDP** of the Paper Manufacturing industry decreased since 2007, and has been relatively stable the last few years. Chained dollar GDP adjusts for changes in prices and quantities, and shouldn't be compared across sectors, nor added across sectors.



B.C. Forestry and Logging and Support Activities GDP, in Chained Dollars

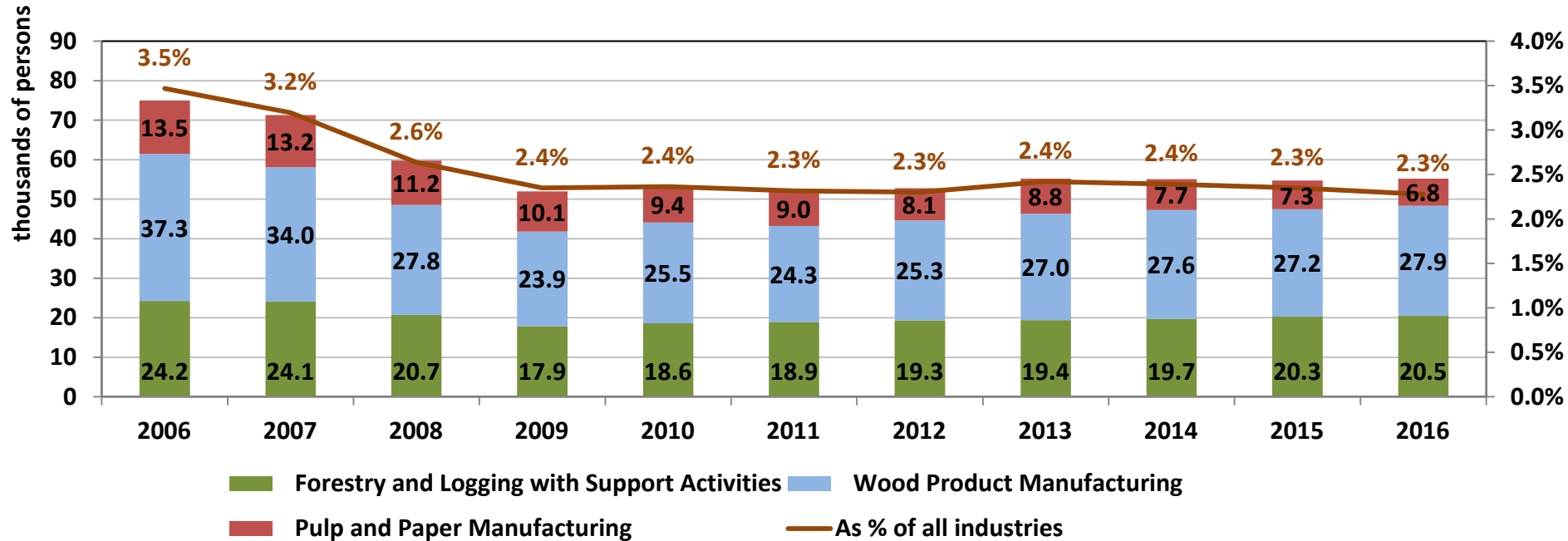


Data source: Statistics Canada; [CANSIM 379-0030](#). [Examples of Support Activities](#) are cruising timber, hauling, pest control, firefighting, and reforestation.

Overview Indicator 2e – The past few years GDP from Support Activities for Forestry has been relatively steady, and so has GDP from Forestry and Logging. Both industries have increased from their levels in 2009. Chained dollar GDP adjusts for changes in prices and quantities, and shouldn't be compared across sectors, nor added across sectors.



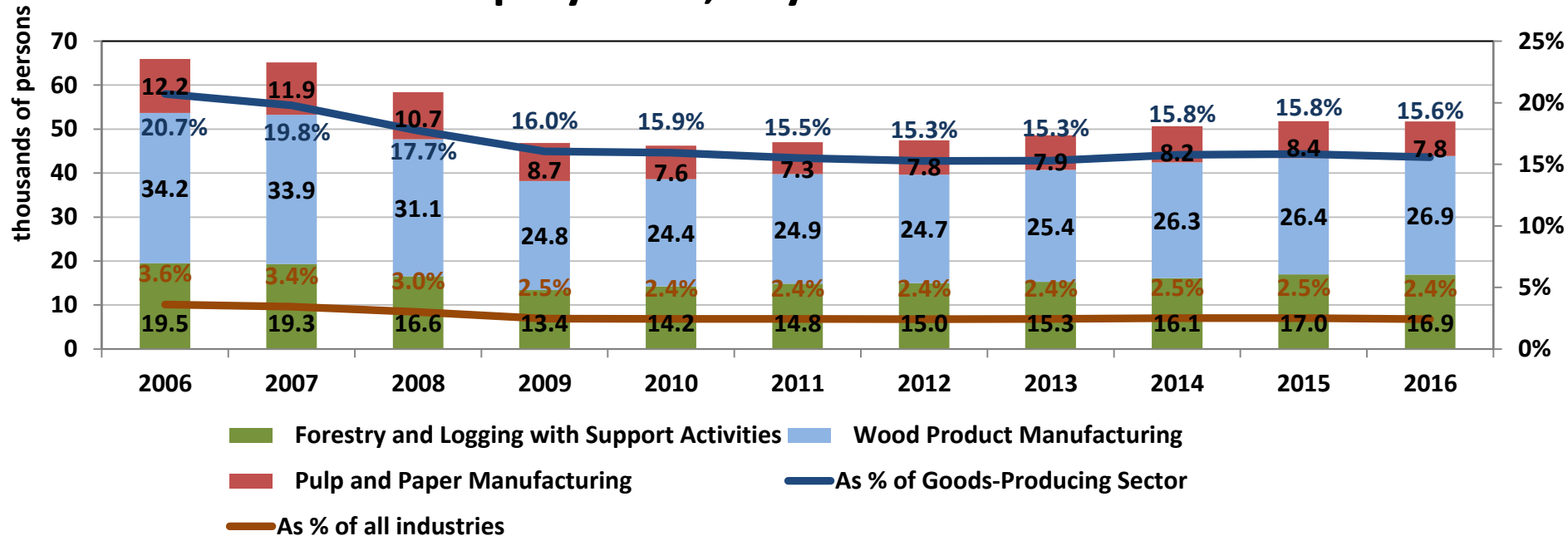
B.C. Forest Sector Direct Employment: System of National Accounts



Data source: Statistics Canada Survey of Employment, Payrolls and Hours (SEPH): [CANSIM 383-0031](https://www150.statcan.gc.ca/n1/pub/2838001/2016001/article/1486111-eng.htm).

Overview Indicator 3d – The System of National Accounts (SNA) offers another estimate of employment. According to this data B.C. forest sector direct employment increased slightly to 55,212 in 2016. The employment in the System of National Accounts combines data from numerous sources.

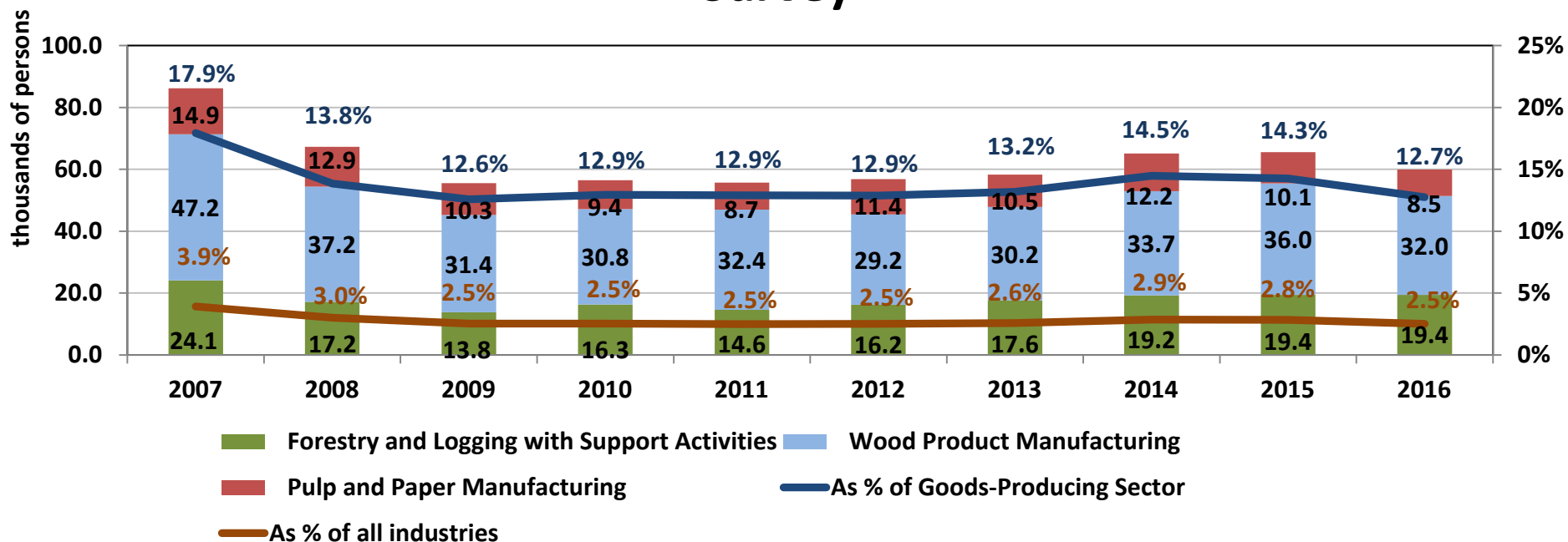
B.C. Forest Sector Direct Employment: Survey of Employment, Payrolls and Hours



Data source: Statistics Canada Survey of Employment, Payrolls and Hours (SEPH): [CANSIM 281-0024](https://www150.statcan.gc.ca/n1/pub/281-0024).

Overview Indicator 3c – The Survey of Employment, Payrolls and Hours (SEPH) offers another estimate of employment. According to this survey B.C. forest sector direct employment increased to 51,717 in 2016. There was little change from 2015. The SEPH survey only covers employees on payrolls, and so omits self-employed people. This means the estimate will be lower than the LFS.

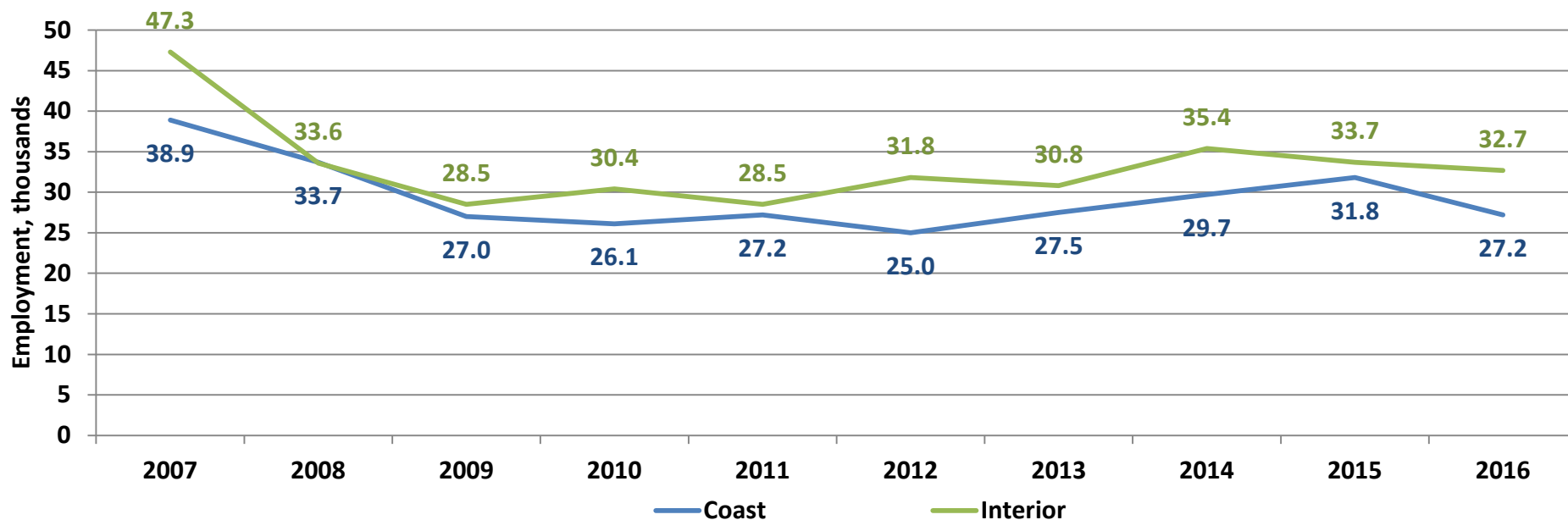
B.C. Forest Sector Direct Employment: Labour Force Survey



Data source: Statistics Canada Labour Force Survey (LFS) data via [B.C. Stats](#) (British Columbia Employment by Detailed NAICS Industry).

Overview Indicator 3a – According to the Labour Force Survey (LFS) B.C. forest sector direct employment decreased to 59,900 in 2016, a 8.5% decrease over 2015. All industries have expanded employment since 2009, especially Forestry and Logging with Support Activities.

Forest Sector Employment by Coast and Interior: Labour Force Survey



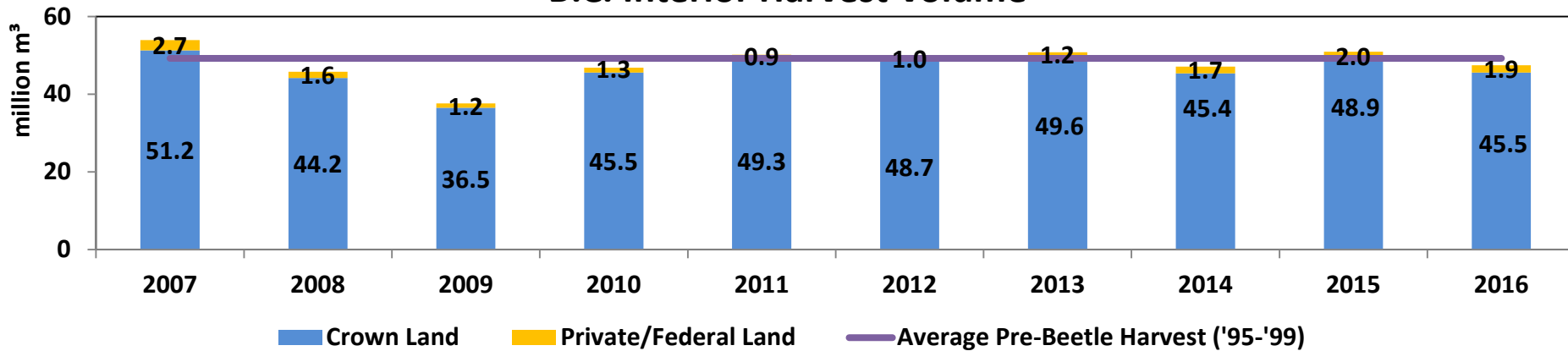
Data source: Statistics Canada Labour Force Survey (LFS) data via [B.C. Stats](#) (Employment and Unemployment by [Development Region](#)). In this data North Coast is combined with Nechako, and in this chart North Coast-Nechako is included in the Interior.

Overview Indicator 3b – According to the Labour Force Survey (LFS) B.C. forest sector direct employment declined in the Interior and on the Coast.

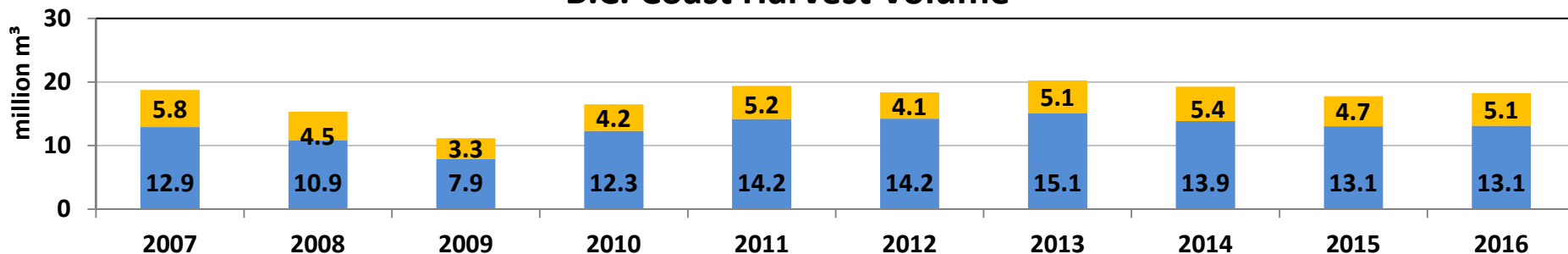
Employment Estimates

- ❖ **System of National Accounts (SNA):** Estimates based on multiple employment sources, including the LFS and SEPH. Part of the Canadian System of Macroeconomic Accounts (CSMA). Estimates are annual and released in the following year (2016 in 2017) making them the least timely.
 - ❖ “Because these accounts [CSMA] all use a common set of definitions, concepts and classifications, and are explicitly related to each other, they form an integrated system. As a result, the economic stories assembled from the CSMA statistics are coherent and credible. The latter reflects the enhanced quality inherent in an integrated system” ([Source](#)).
 - ❖ This is the data source that forms the foundation of Input-Output Models, including [BC’s model](#).
- ❖ **Survey of Employment Payrolls and Hours (SEPH):** Another monthly survey. Not as timely as LFS, SEPH is delayed roughly two months in comparison.
 - ❖ “The payroll survey (SEPH) provides a highly reliable gauge of monthly change in non-farm payroll employment”. This survey does not have sampling error since it includes all payroll employees” ([Source](#)).
 - ❖ Excludes self employed and agriculture. Potentially a major setback for forestry and logging estimates, but probably less of an issue for most forest product manufacturing. SEPH is usually the lowest estimate
- ❖ **Labour Force Survey (LFS):** A monthly survey of roughly 6,500 B.C. households. It’s released near the start of each month.
 - ❖ “The household survey (LFS) provides a broader picture of employment, including employment in agriculture and the number of self employed” ([Source](#)). It also measures unemployment.
 - ❖ Since it is the most timely release on employment it tends to be most widely quoted. This also makes it a useful leading indicator.
 - ❖ The LFS offers employment by Development Region and employment by industry, but the more detailed they become by Region and industry the less reliable they become.
 - ❖ LFS tends to be the upper estimate of the three employment estimates as it reflects all employment.

B.C. Interior Harvest Volume



B.C. Coast Harvest Volume



Data source: [B.C. FLNR Harvest Billing System](#). All logs, special forest products, species and grades billed, excluding waste, reject and Christmas trees. Data extracted May 1, 2017. Volumes may not add to total harvest (slide 14) due to rounding.

Products – Logs – Total harvest volume (65.7 million m³) was down 4.3% from 2015. The Interior accounted for 72% of the harvest. Most of the harvest from private and federal lands comes from the Coast. Recent harvest is near pre-beetle, pre-housing boom levels (49.2 million m³, '95-'99).



Figure 1: Estimated British Columbia Primary Log Use - 2015

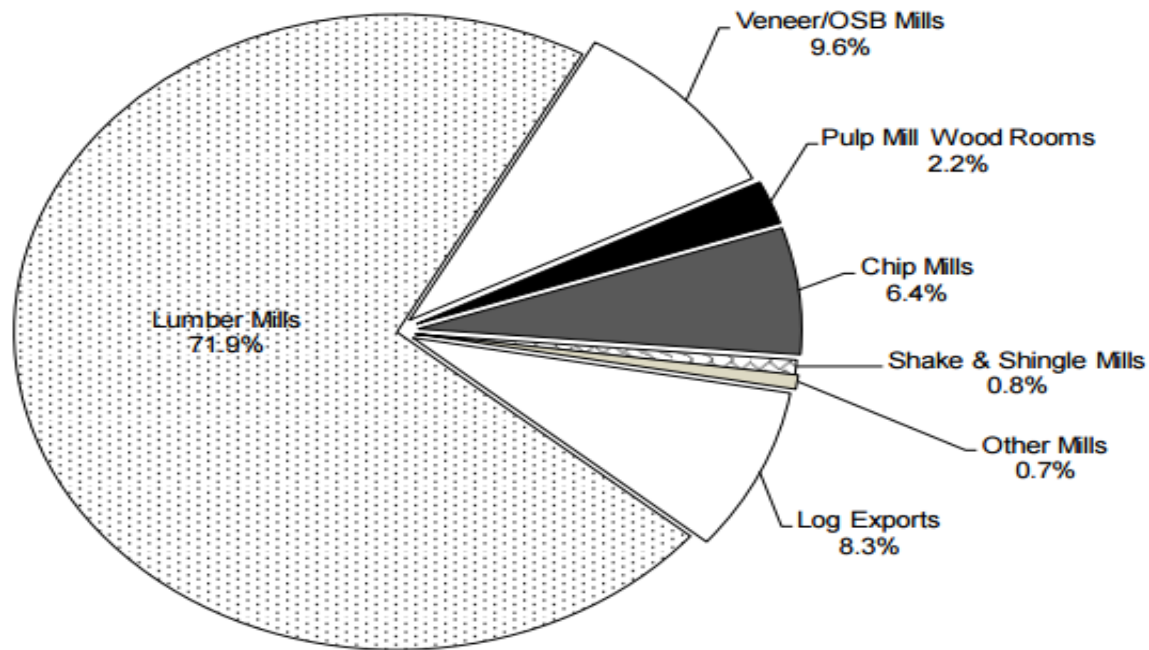
	Coast			Interior			Province		
	Number of Mills	Est. Volume Used (000 m ³)	Per Cent	Number of Mills	Est. Volume Used (000 m ³)	Per Cent	Number of Mills	Est. Volume Used (000 m ³)	Per Cent
Primary Log Use									
Lumber Mills	44	7,642	43.2%	92	40,155	82.4%	136	47,797	71.9%
Veneer/OSB Mills	5	2,035	11.5%	11	4,340	8.9%	16	6,375	9.6%
Pulp Mill Wood Rooms	3	784	4.4%	4	691	1.4%	7	1,475	2.2%
Chip Mills	10	1,743	9.9%	10	2,534	5.2%	20	4,277	6.4%
Shake & Shingle Mills	26	491	2.8%	7	22	0.0%	33	513	0.8%
Other Mills	11	107	0.6%	30	373	0.8%	41	480	0.7%
Log Exports		4,892	27.6%		641	1.3%		5,534	8.3%
TOTAL	99	17,694	100%	154	48,756	100%	253	66,451	100%
Log Availability									
Total Harvest		17,780			50,629			68,410	
Log Imports								23	
TOTAL		17,780			50,629			68,433	
Difference		86	0.5%		1,873	3.7%		1,982	2.9%

*Total harvest includes all logs, special forest products, species and grades billed to crown, private and federal land. Waste, reject and Xmas trees were excluded.

Data source: [B.C. Mill Report](#). 2015 is the latest year available. See page 9 for additional breakdown.

Products – Log use by Mill Type – This table shows estimated log use by mill type based on results from the B.C. Mill Survey. The vast majority of logs initially wind up at lumber mills (72%), then roughly 55% of that fibre goes to pulp and pellet mills as chips and sawdust. Note, the annual survey captures about 97% of the log use in 2015.

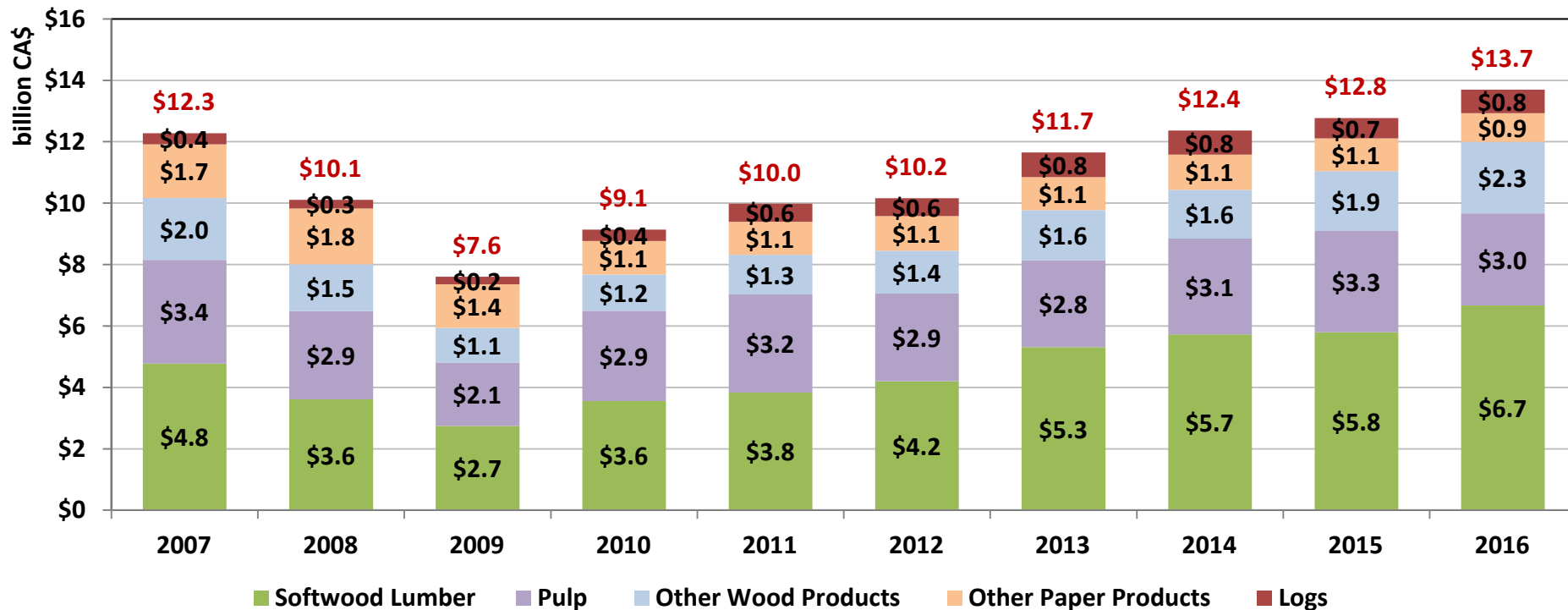
Total Primary Log Use 2015 - 66.451 million m3



Data source: [B.C. Mill Report](#). 2015 is the latest year available. See page 9 for additional breakdown.

Products – Log use by Mill Type – This is a summary of some of the data on the previous page.

B.C. Forest Product Exports by Main Product

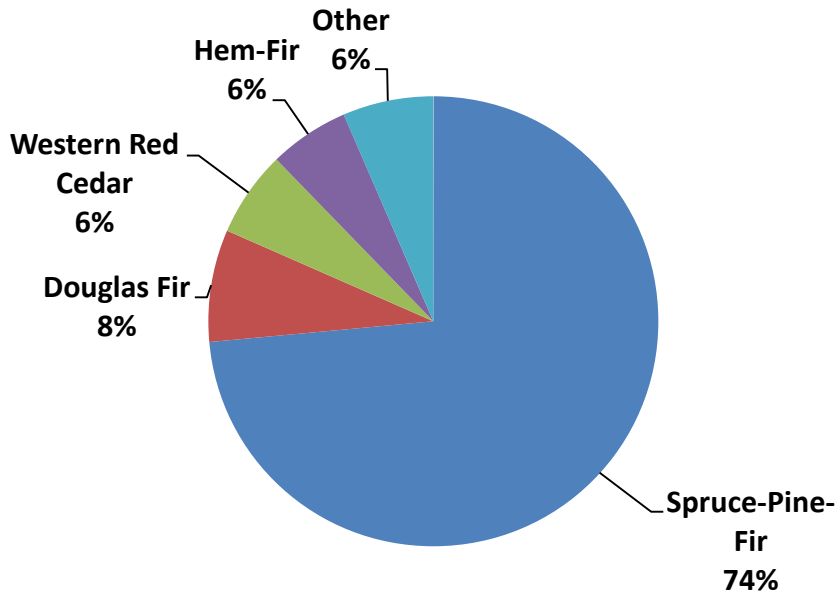


Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

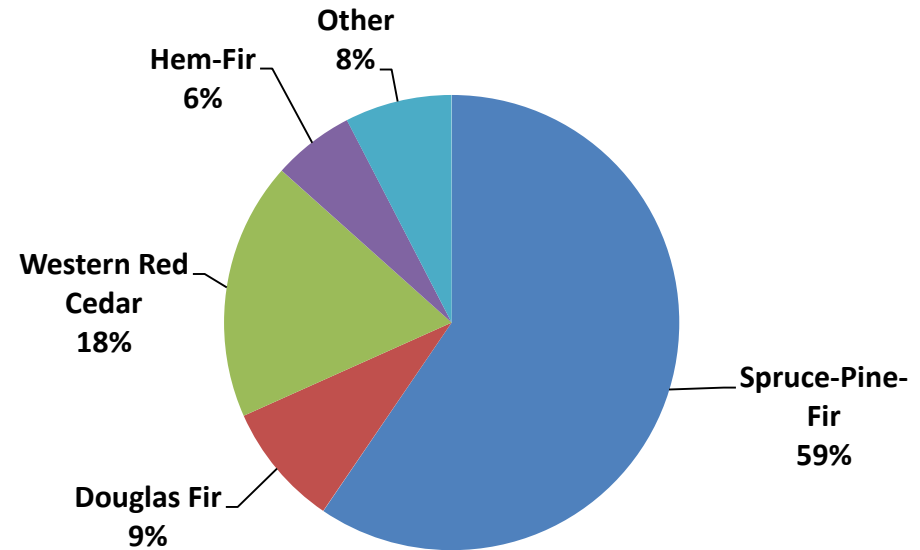
Products – Exports – Share of B.C. forest product export value by main product in 2016: Logs (5.6%), Softwood Lumber (48.7%), Other Wood Products (17.0%), Pulp (21.9%), and Other Paper Products (6.8%).



**B.C. Softwood Lumber Export Volume
(27.7 million m³) Share by Species,
2016**



**B.C. Softwood Lumber Export Value
Share by Species, 2016**

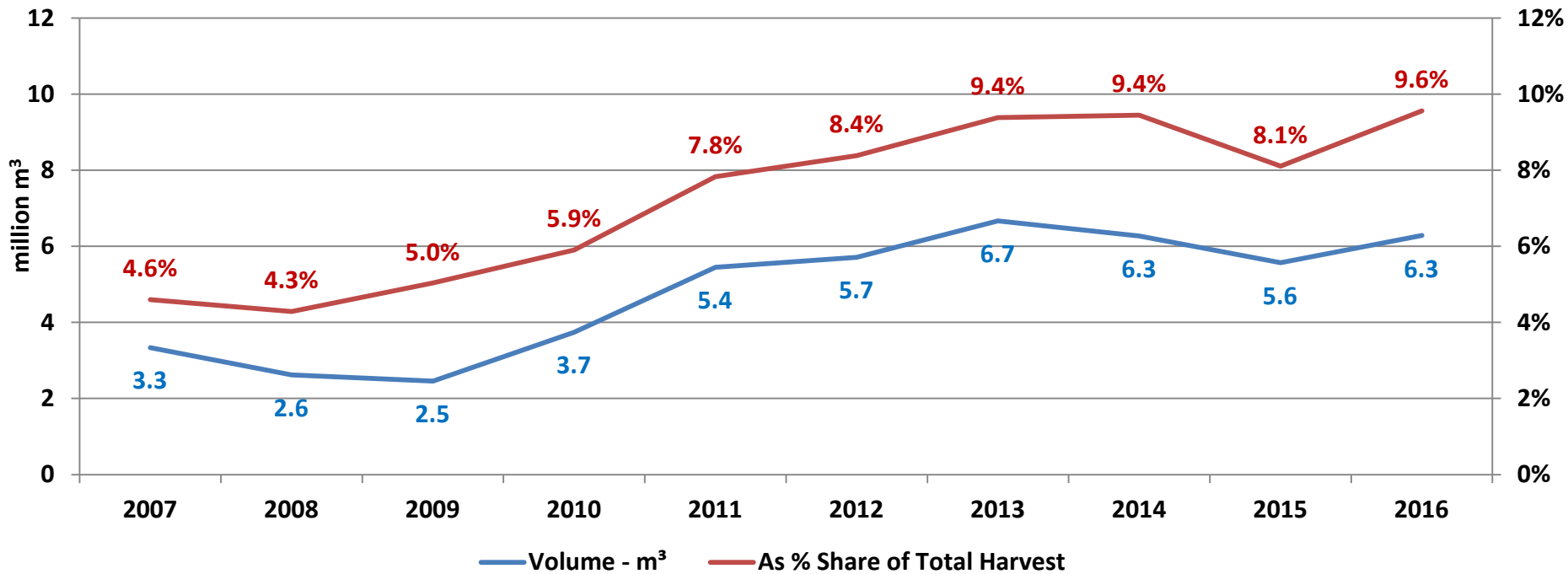


Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Products – Exports – Softwood Lumber – Spruce-Pine-Fir (SPF) lumber is by far the highest-volume lumber product exported from B.C., followed by Douglas Fir, Western Red Cedar, and hemlock-fir (balsam). Non-SPF species tend to have higher lumber prices than SPF, as seen by their export value share being higher than their volume share.



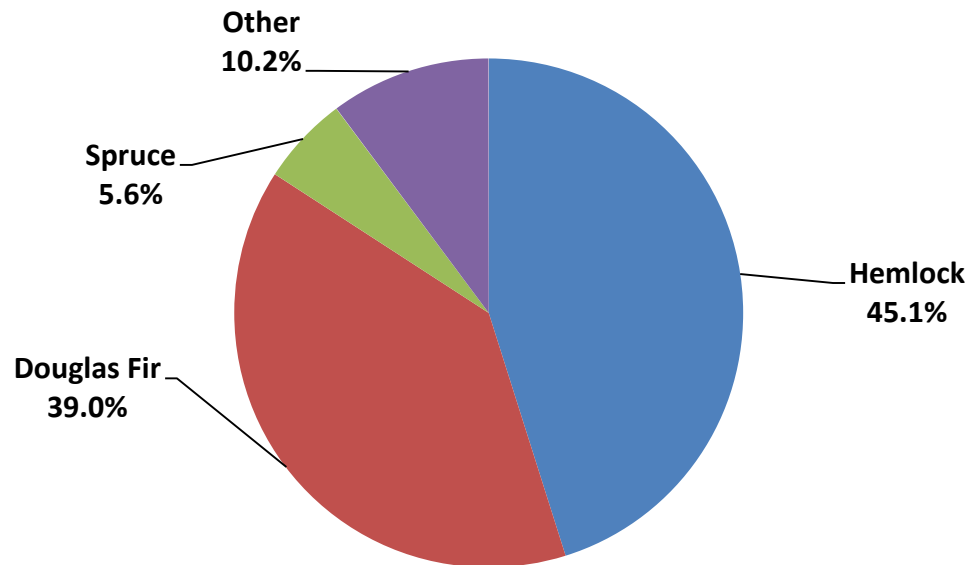
B.C. Log Export Volume and Share of Harvest



Data source: B.C. FLNRO Harvest Billing System, and [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Products – Exports – Logs – Log export volume rose by 12.9% in 2016. The vast majority of log exports came from the Coast, rather than the Interior.

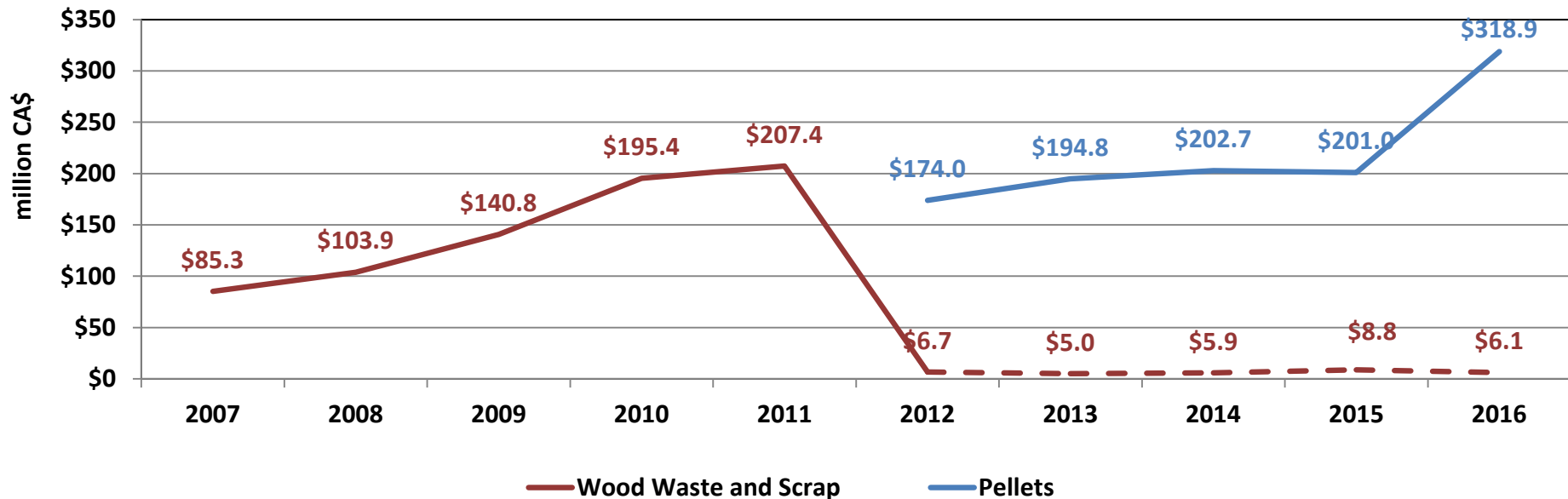
B.C. Log Export Volume (6.3 million m³) Share by Species, 2015



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Other includes pulp logs of all species, plus saw logs of other softwoods and hardwoods. Note historic data is subject to revisions.

Products – Exports – Logs – Hemlock sawlogs accounted for around 45% of log exports in 2015, followed by Douglas Fir with 39%. Most of the hemlock went to China which is one of the few markets where the species is in strong demand.

B.C. Exports of Wood Waste and Scrap, and Pellets

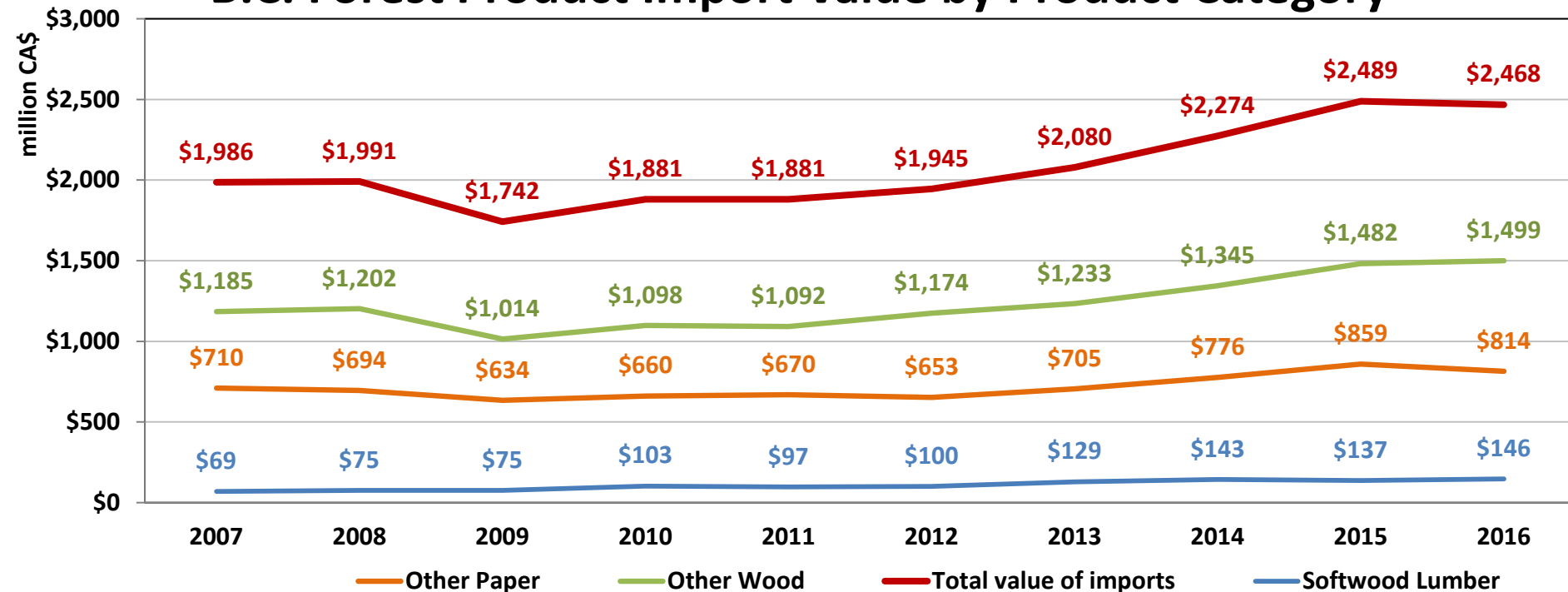


*Pellets were included in Wood Waste and Scrap until 2012. Now pellets are separate.

Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Products – Exports – Pellets – Exports of Wood Waste and Scrap grew rapidly up to 2011, probably almost entirely due to growth in Pellet exports. Pellet export value jumped over \$100 million from 2015 to 2016. 2012 was the first year pellets were given their own product category in the export data.

B.C. Forest Product Import Value by Product Category



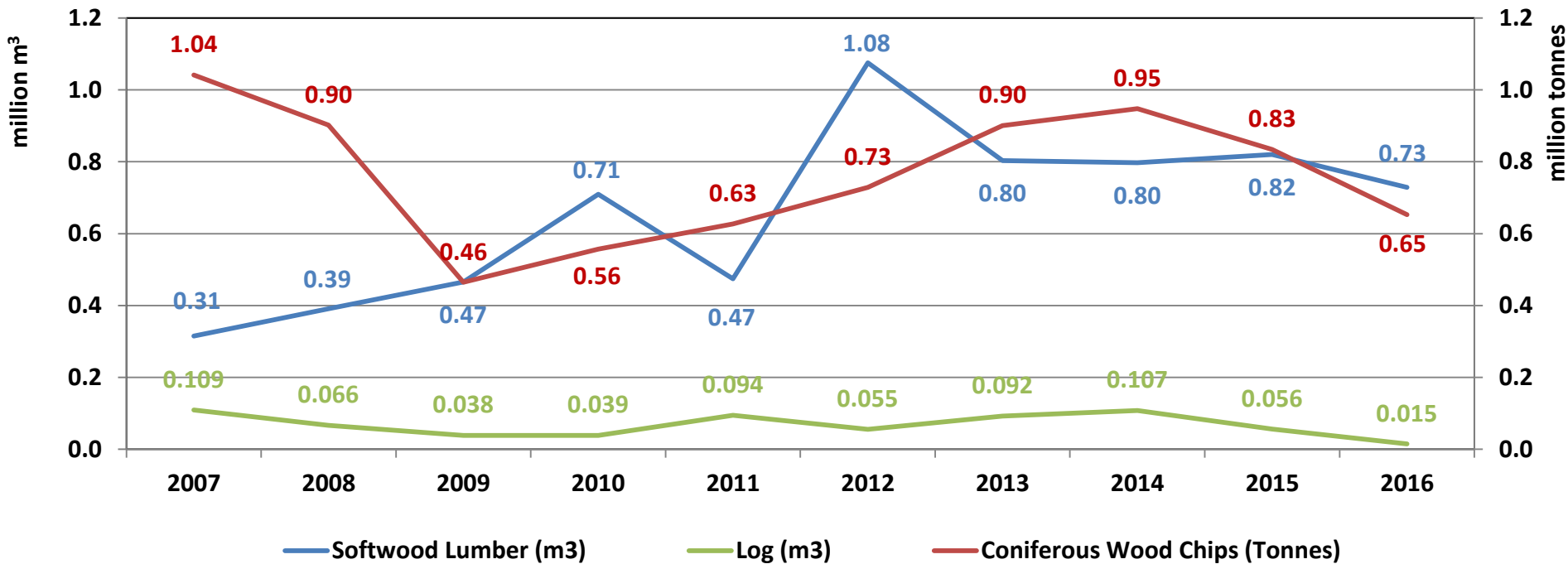
*Pulp and Log import value is minimal, so they don't have their own series, but are included in the total.

Data source: Special run of Statistics Canada data via BC Stats. Similar data can be viewed on [NRCAN's website](#). Note historic data is subject to revisions.

Products – Imports – Value – Total value of imported forest products was fairly consistent from 2015 to 2016. Most the Other Wood product value is furniture and panels (particle board, plywood, etc.) Note the final destination of these imports may have been other provinces. Pulp and log imports are included in the total, but not given their own line due to the low overall value. Top imports of Other Wood products include furniture (especially chairs), particle board, Siding and plywood. Top imports of Other Paper products include corrugated packaging, toilet paper, and paper towels.



Select B.C. Forest Product Imports by Quantity



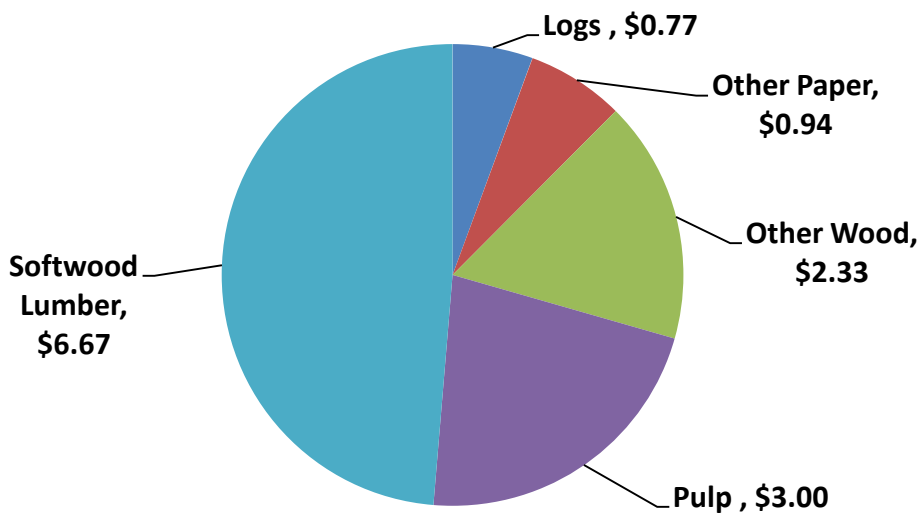
Data source: Special run of Statistics Canada data via BC Stats. Similar data can be viewed on [NRCAN's website](#). Note there were errors for 2014 and 2015 lumber imports in the 2015 version of this report, and historic data is subject to revisions.

Products – Imports – Quantity – Imports of softwood lumber declined from 2015 to 2016. Comparing import volume to B.C. production it is only about 4.5%. Coniferous wood chip imports declined again in 2016. Note the final destination of these imports may have been beyond B.C.

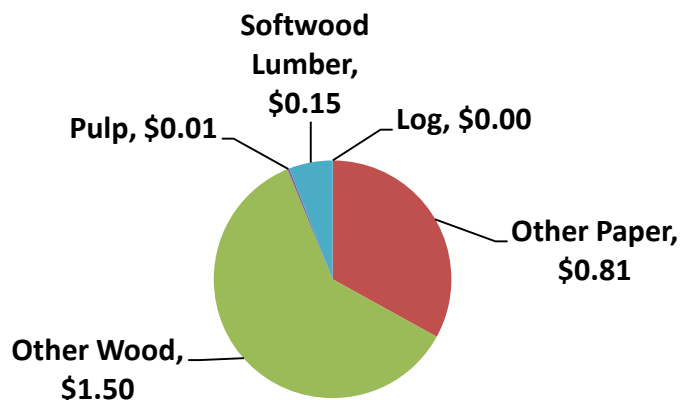


Comparison of BC Forest Product Exports and Imports

2016 Forest Product Exports - \$13.7 billion



Imports - \$2.5 billion

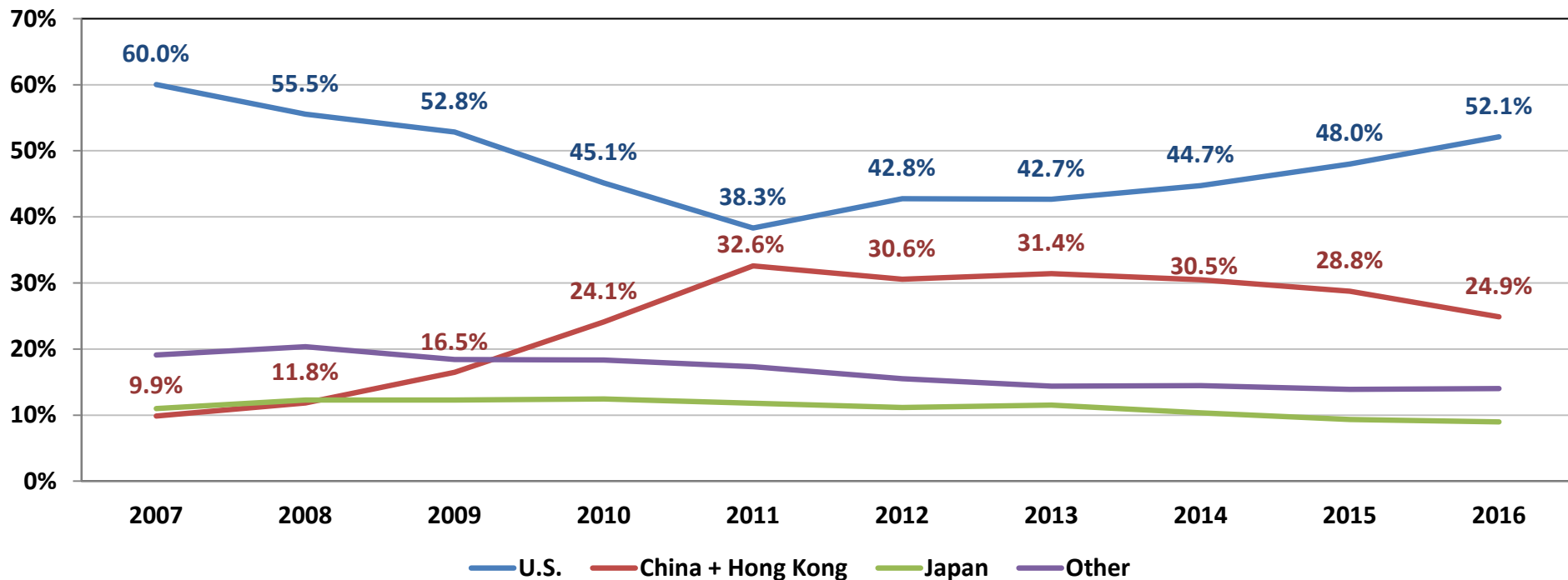


Data source: Special run of Statistics Canada data via BC Stats. Similar data can be viewed on [NRCAN's website](#). Note historic data is subject to revisions.

Products – Import vs. Export Value – Other wood and other paper are the largest imports to B.C. Import value is about 18% the size of export value. Note the final destination of these imports may have been beyond B.C.



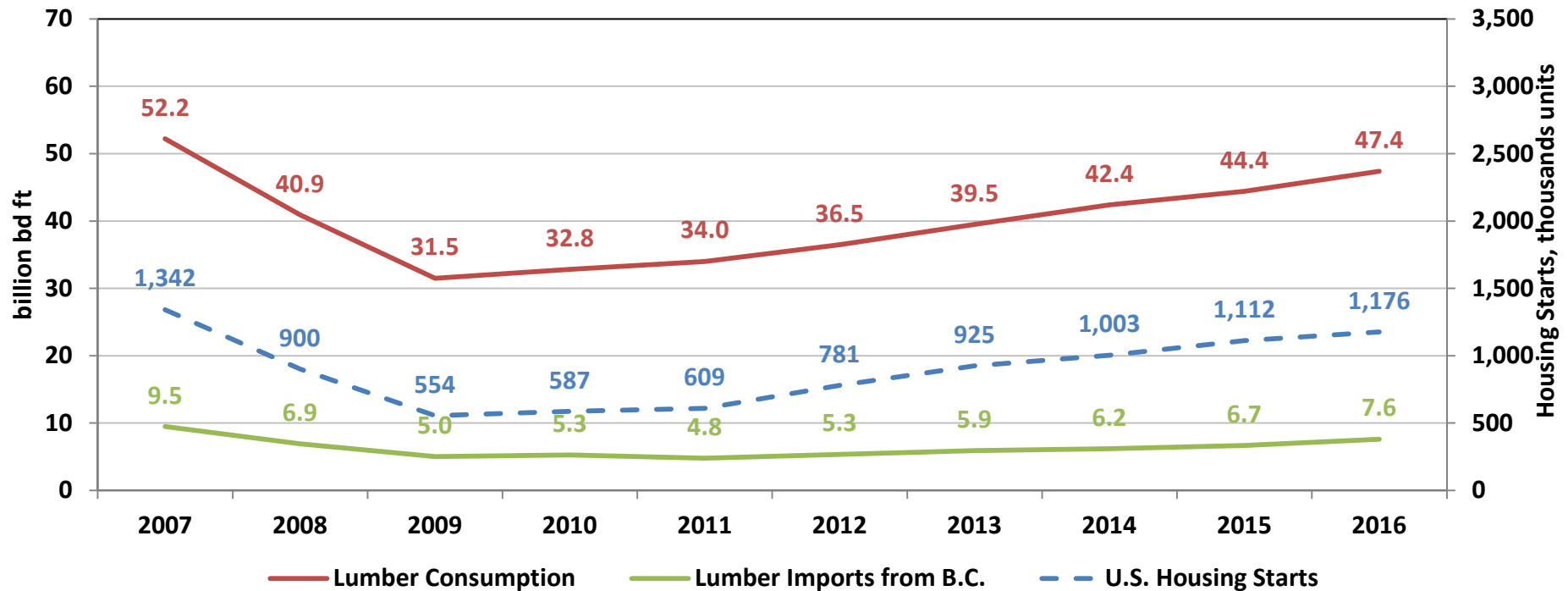
B.C. Forest Product Export Value Share by Market



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Markets – Starting in 2005 the U.S. share of export value fell dramatically and China’s share grew rapidly. This trend ended in 2012 and their shares slowly diverged after that. In 2016 the U.S. gained substantial share at the cost of China.

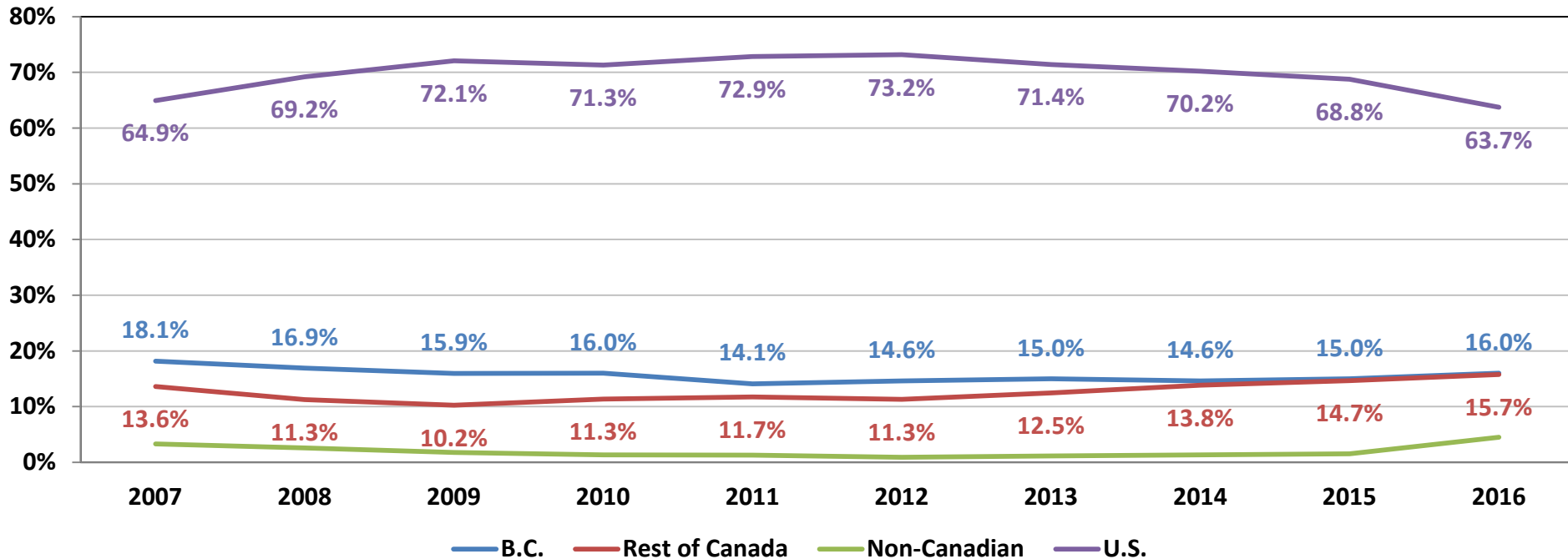
U.S. Softwood Lumber Consumption vs. Housing Starts



Data source: [Western Wood Products Association](#) and [U.S. Census Bureau](#).

Markets – U.S. – U.S. softwood lumber consumption and U.S. housing starts have increased steadily from the low in 2009, but both are still far from the peak level in 2005.

Supplier Share of U.S. Softwood Lumber Consumption



Data source: [Western Wood Products Association](#). The supply share from B.C. in 2016 was altered to match revised Statistics Canada data (no longer matches WWPA data).

Markets – U.S. – U.S. softwood lumber consumption relies primarily on U.S. domestic supply. The U.S. is still supplying a higher level of their consumption than during the housing boom, largely due to lower lumber demand resulting in less need for imports. Canada provided 31.7% of total U.S. consumption in 2016.



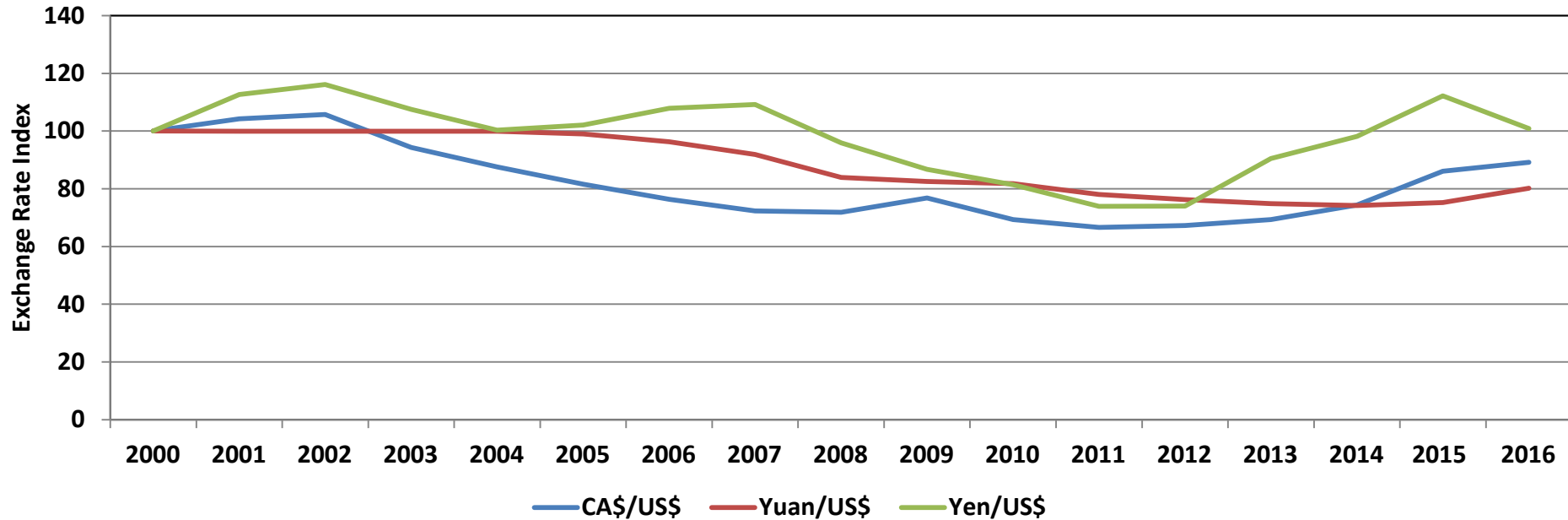
2000 Exchange Rates

1.48 CA\$/US\$
8.28 Yuan/US\$
107.82 Yen/US\$

US\$ Exchange Rates Indexed to 2000

2016 Exchange Rates

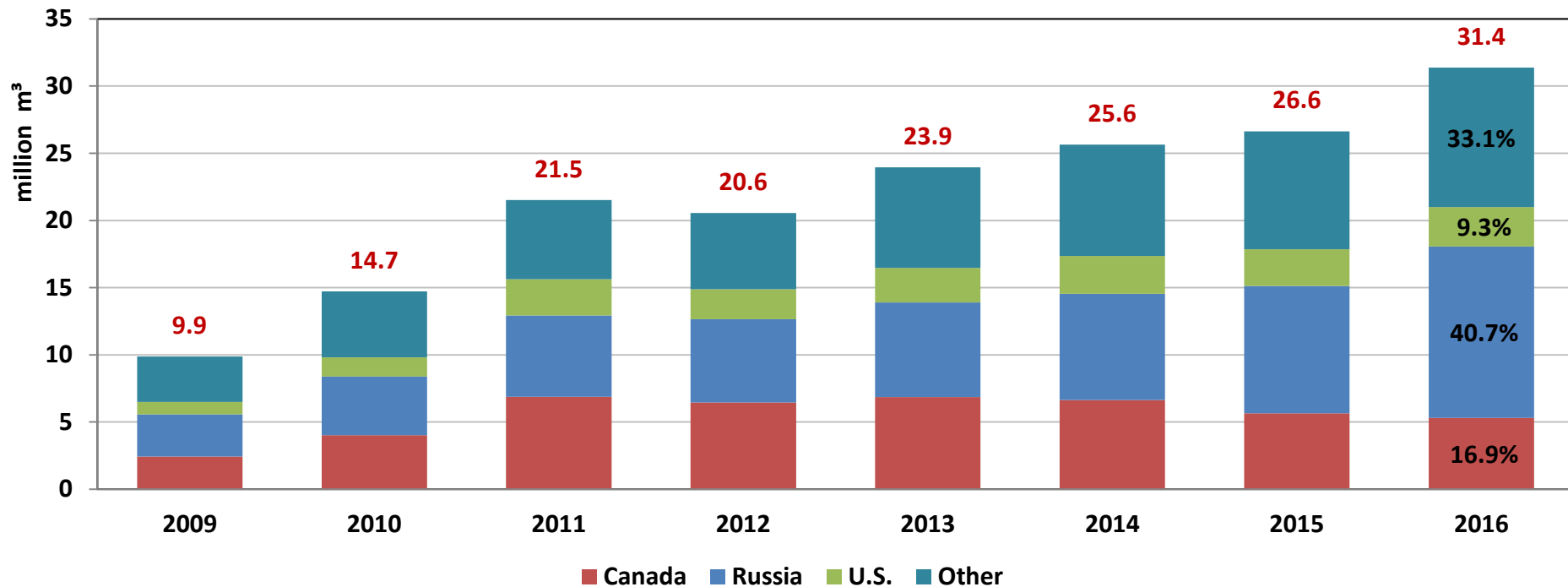
1.33 CA\$/US\$
6.64 Yuan/US\$
108.80 Yen/US\$



Data source: Organization for Economic Co-operation and Development ([OECD](http://www.oecd.org)).

Prices and Costs – From 2002 to 2011 the US\$ depreciated about 33% relative to the Canadian dollar. Since 2011 the US\$ has appreciated against the CA\$, and this has continued in 2016 when compared to the exchange rate in 2000. The exchange rate impacts product prices and mill revenue.

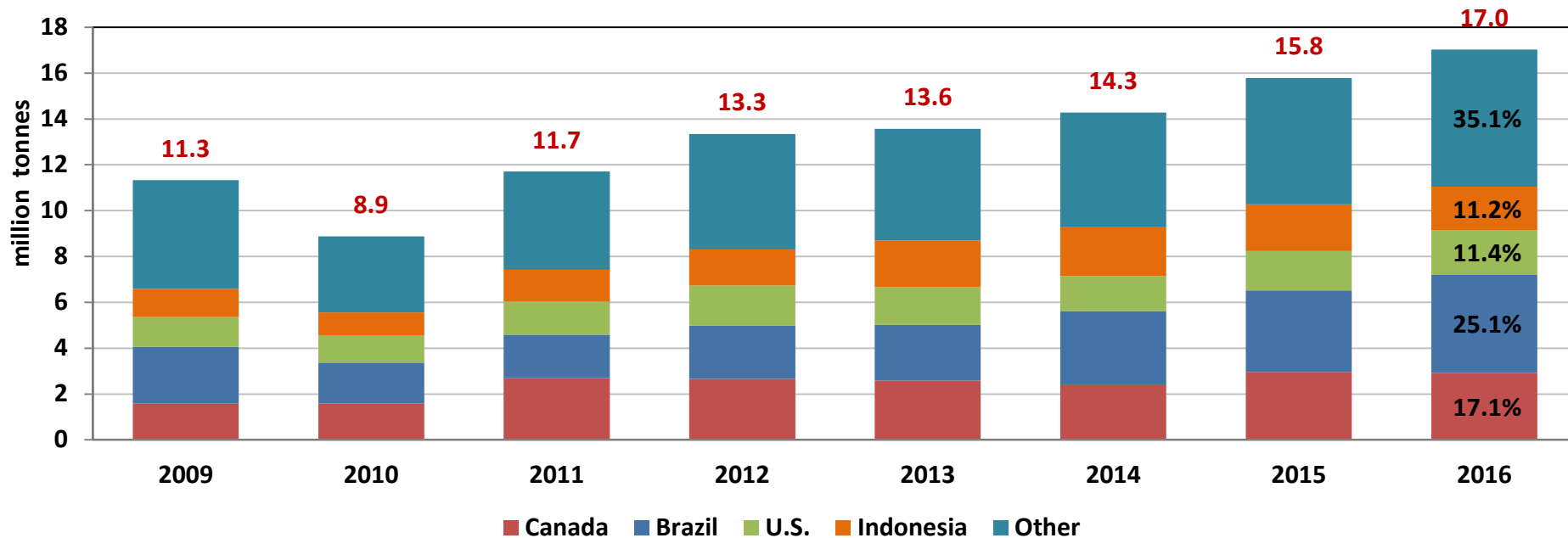
China Lumber Imports by Supply Country



Data source: [WOOD MARKETS China Bulletin](#). All species, including hardwoods.

Markets – China – In 2016, Russia’s share increased to 40.7% while Canada’s became 16.9%. Despite a large increase in lumber imports the volume from Canada declined. This reduction to China was offset in B.C. by an increase in lumber exports to the US.

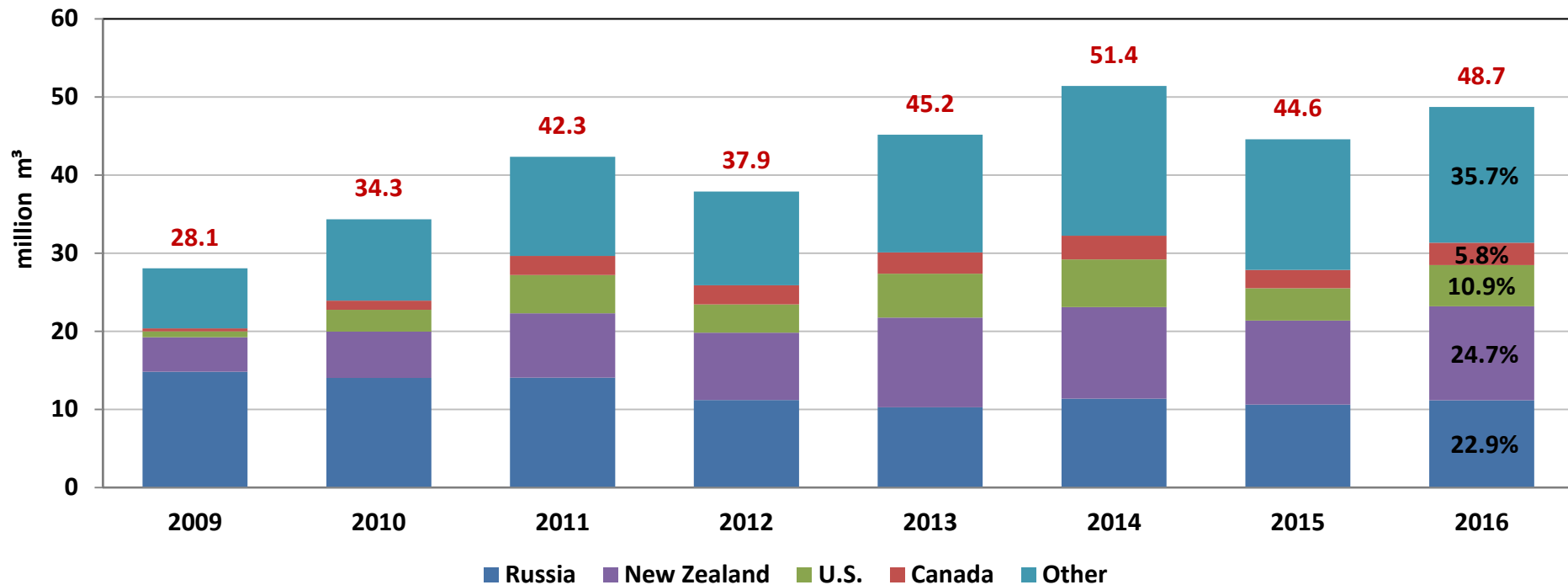
China Sulfate (Kraft) Wood Pulp Imports by Supply Country



Data source: [WOOD MARKETS China Bulletin](#).

Markets – China – In 2016 Canada (17.1%) was second behind Brazil (25.1%) as the leading supplier of China’s kraft market pulp imports. They were followed by the U.S. (11.4%), Indonesia (11.2%), and other countries (35.1%). China’s sulfate kraft pulp imports increased substantially in 2016.

China Log Imports by Supply Country

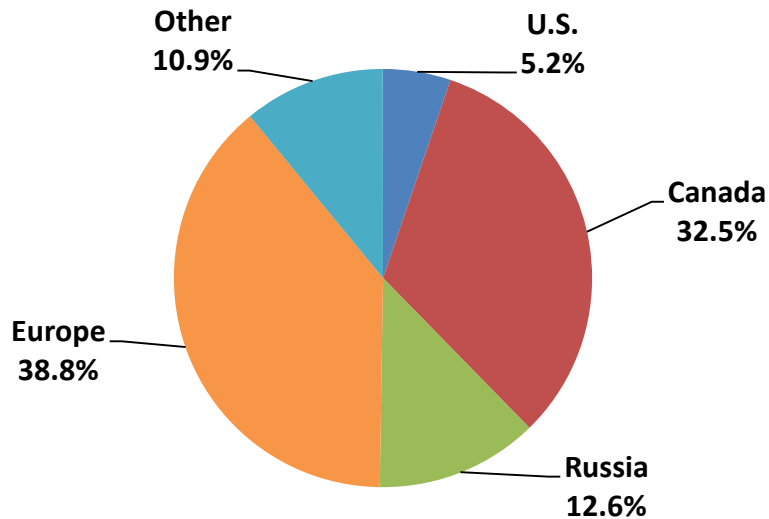


Data source: [WOOD MARKETS China Bulletin](#). All species, including hardwoods.

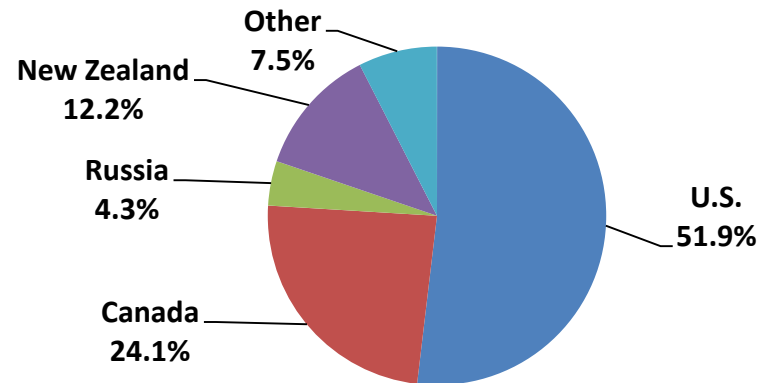
Markets – China – In 2016 New Zealand continues as China’s largest log supplier (24.7%). They were followed by Russia (22.9%), the U.S. (10.9%), Canada (5.8%) and other countries (35.7%).



Japan Lumber Imports (6.2 million m³) by Country, 2015



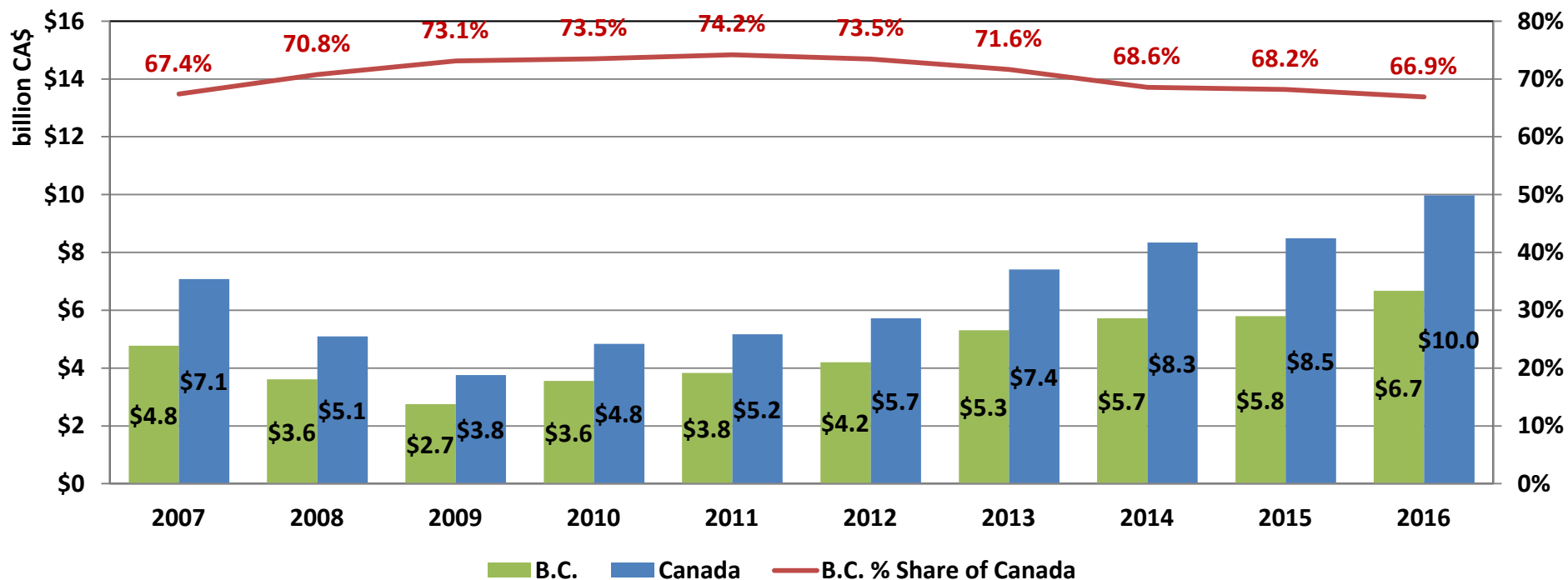
Japan Log Imports (3.5 million m³) by Country, 2015



Data source: [Japan Wood-Products Information & Research Center \(JAWIC\)](#).

Markets – Japan – Canada accounted for 32.5% of Japan’s total lumber import volume and 24.1% of Japan’s total log import volume in 2015.

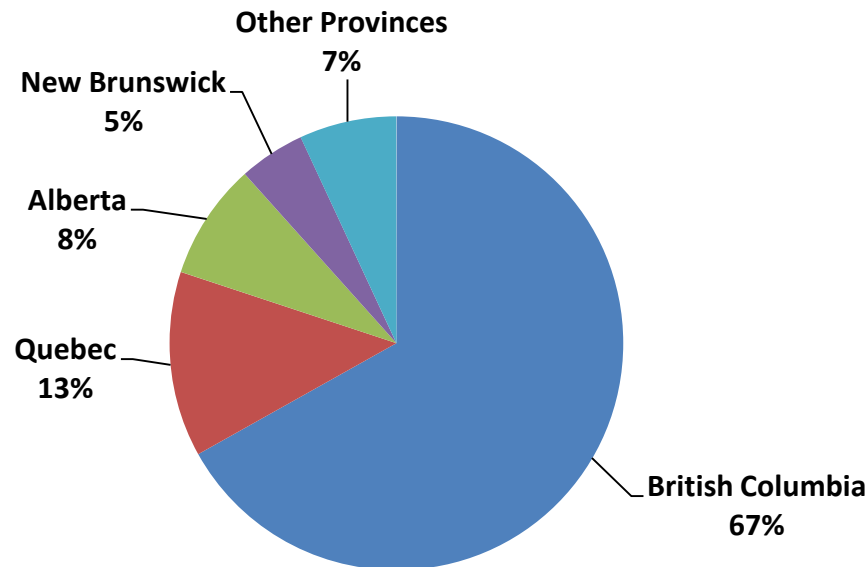
Softwood Lumber Exports: B.C. and Canada



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Competitiveness – B.C.’s Share – B.C.’s share of Canada’s total softwood lumber export value was 66.9% in 2016, decreasing slightly compared to 2015.

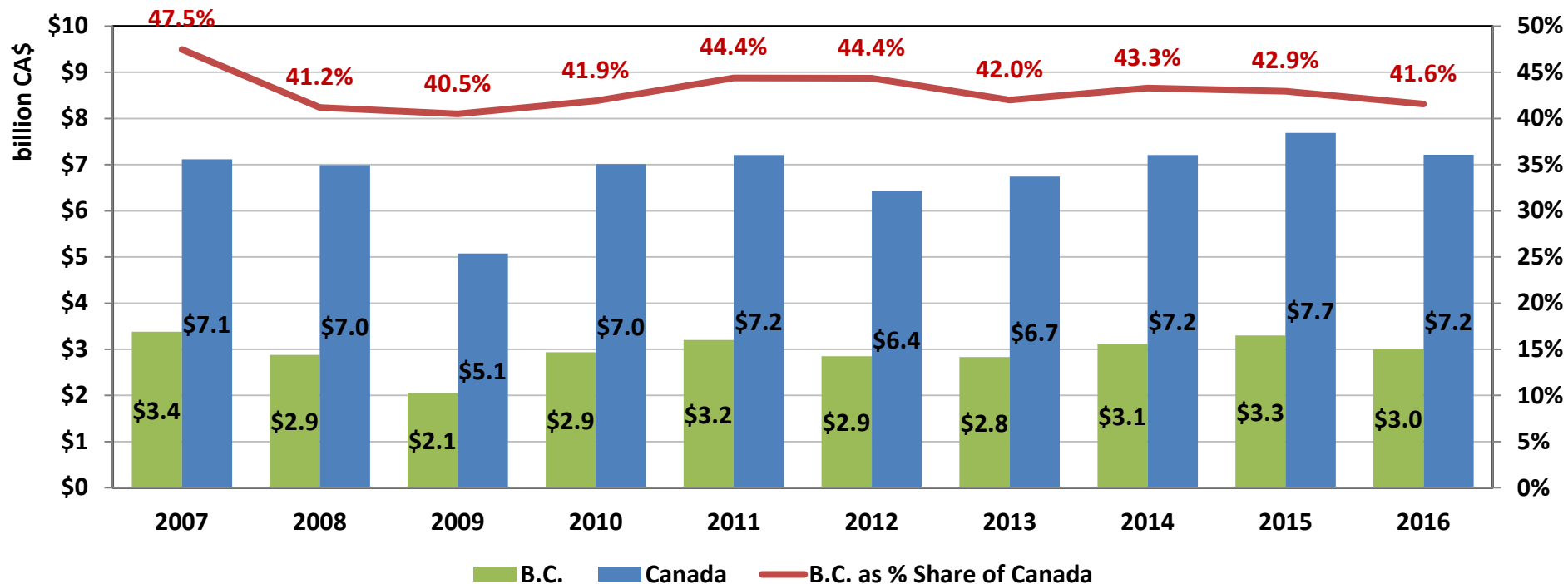
Canada Softwood Lumber Export Value (\$10.0 billion) by Province, 2016



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Competitiveness – B.C.’s Share – In terms of value B.C. is the dominant supplier of Canada’s softwood lumber exports, followed by Quebec, Alberta, New Brunswick and other provinces.

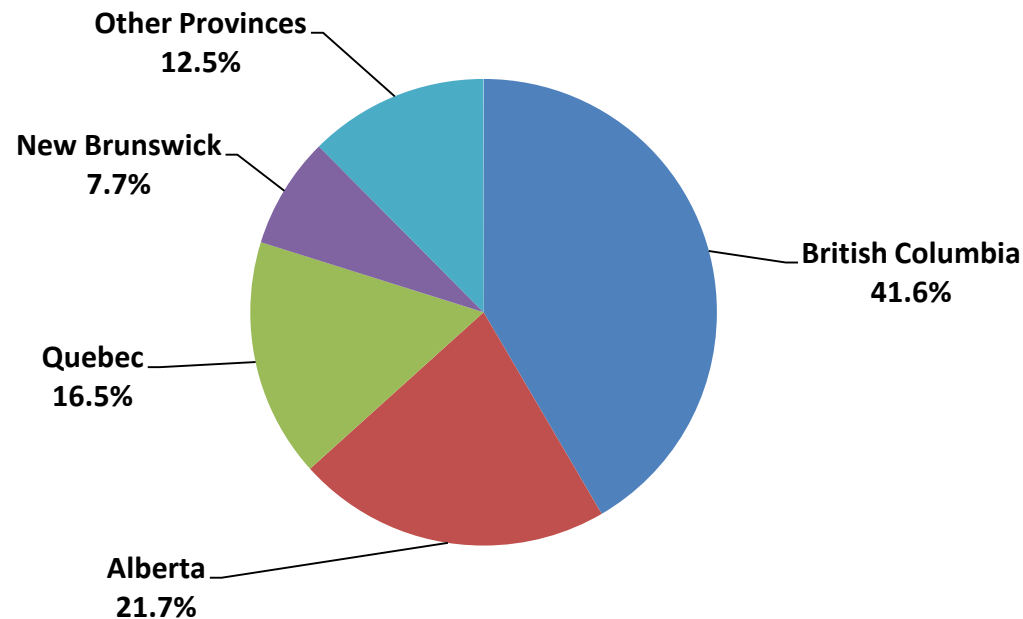
Pulp Exports: B.C. and Canada



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Competitiveness – B.C.’s Share – B.C. accounted for 41.6% of Canada’s total pulp export value in 2016.

Canada Pulp Export Value (\$7.2 bil.) by Province, 2016

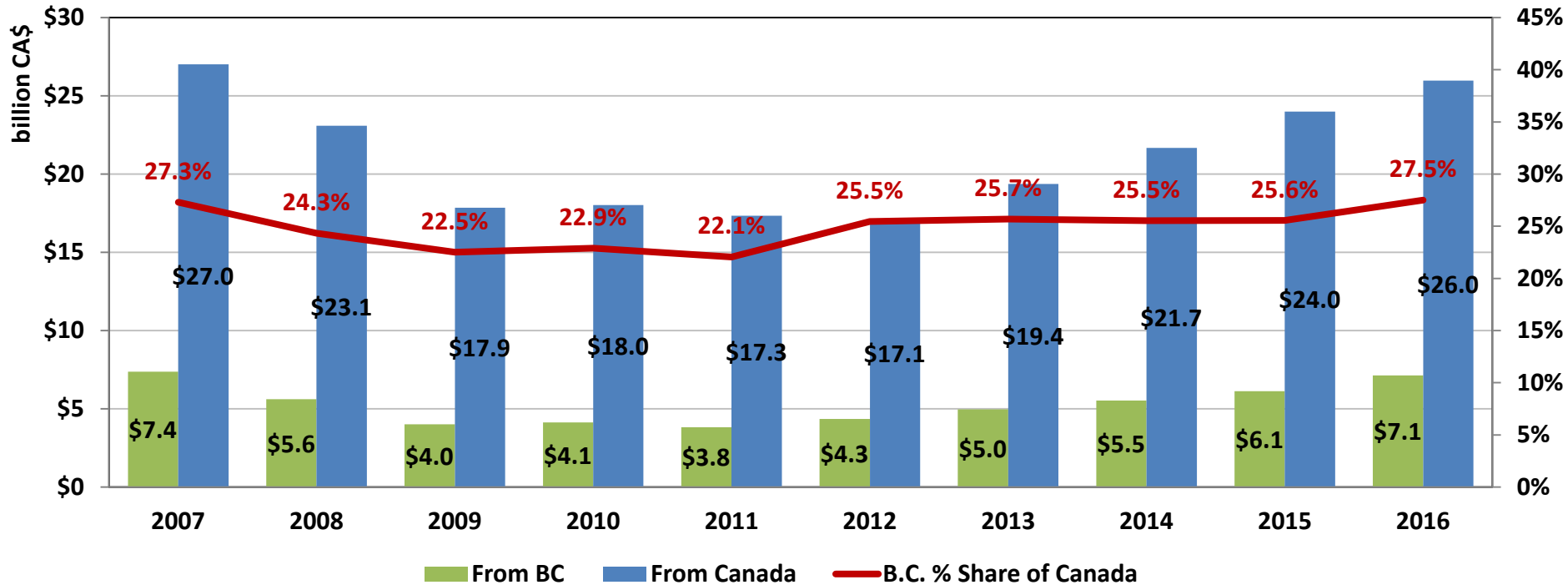


Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Competitiveness – B.C.’s Share – B.C. is the largest supplier of Canada’s pulp exports in terms of value, followed by Alberta, Quebec, New Brunswick and other provinces.



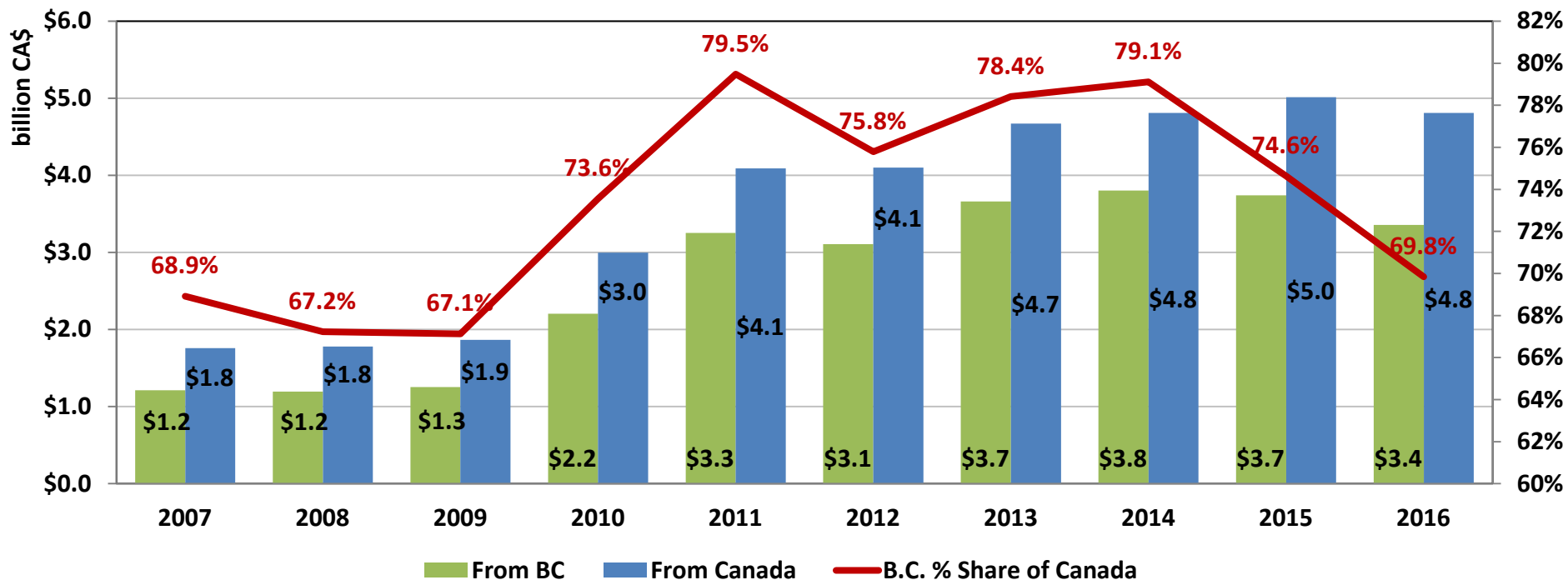
Forest Product Exports to U.S.: B.C. and Canada



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions.

Competitiveness – B.C.’s Share – B.C. accounted for 27.5% of the value of Canada’s total forest product exports to the U.S. in 2016. B.C. exports increased by CA\$1.0 billion and exports from Canada as a whole rose CA\$2.0 billion.

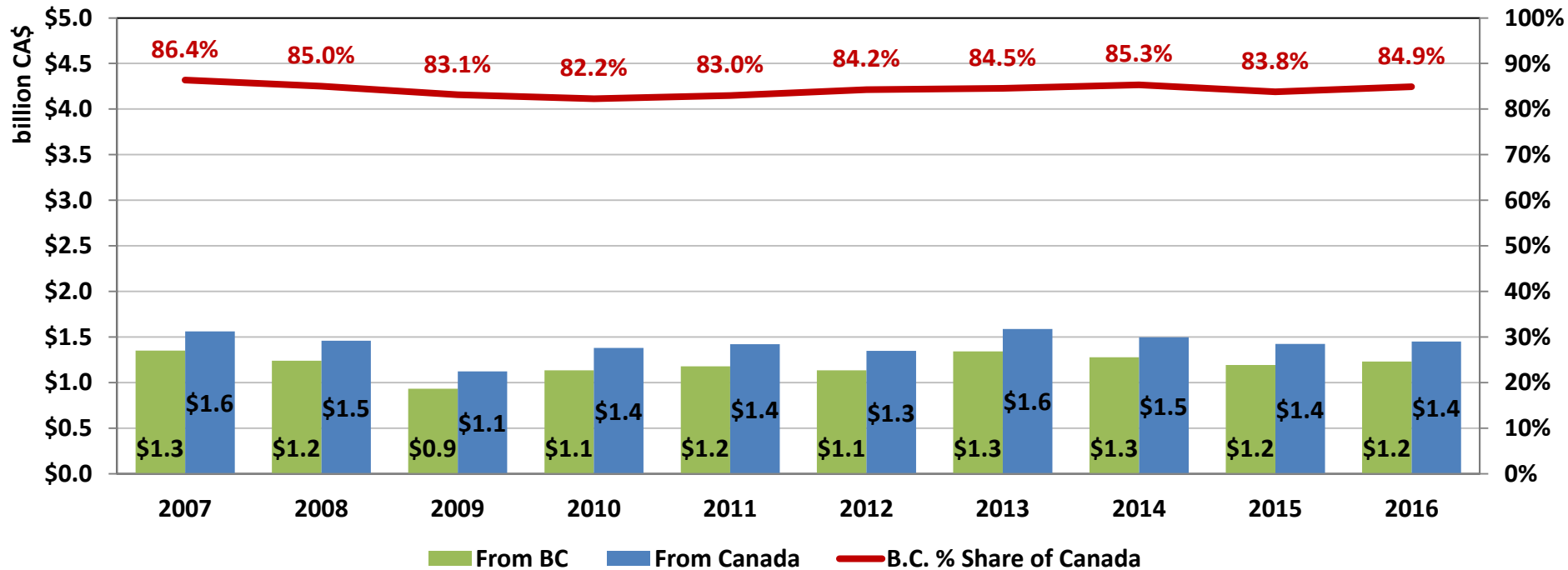
Forest Product Exports to China: B.C. and Canada



Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions. Lumber exports in 2016 may decline (see slide 5).

Competitiveness – B.C.’s Share – B.C. accounted for 69.8% of Canada’s total forest product exports to China in 2016.

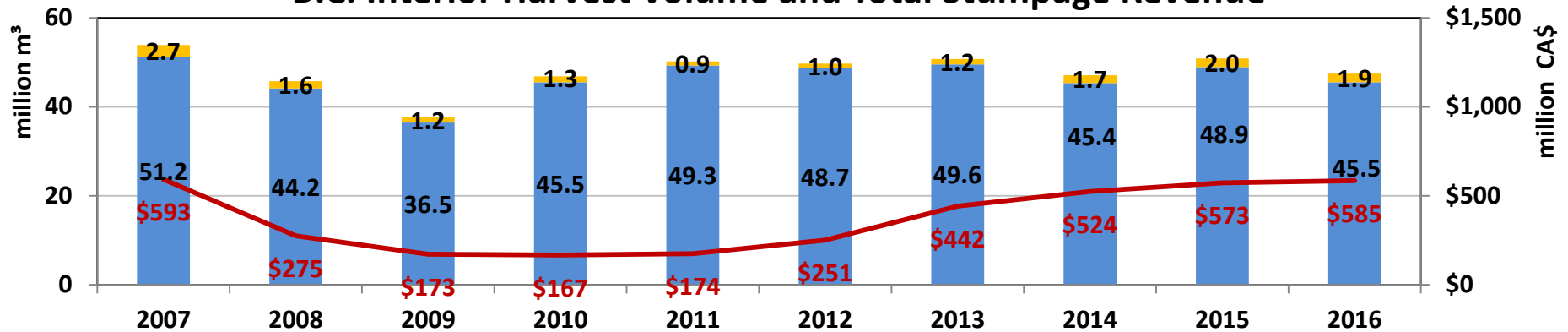
Forest Product Exports to Japan: B.C. and Canada



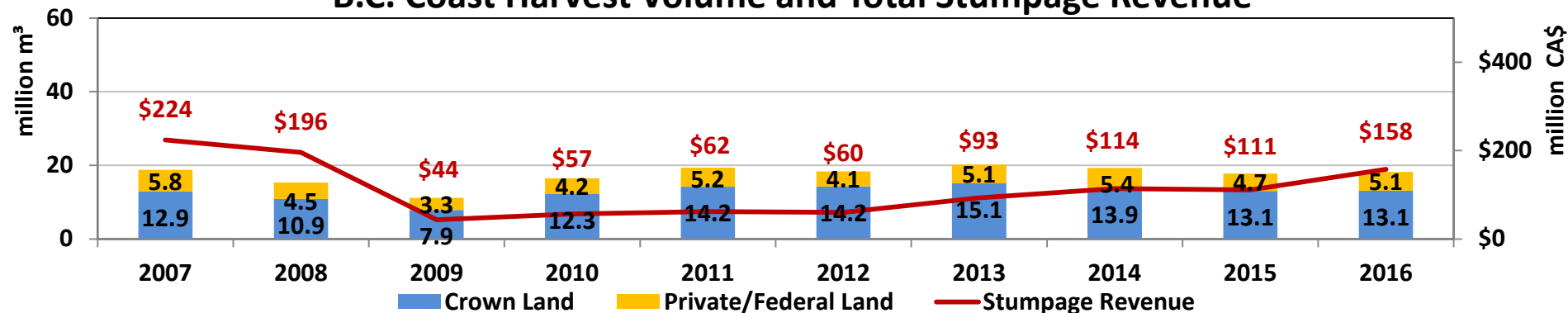
Data source: [B.C. Stats](#) extract from Statistics Canada data. Also available from Statistics Canada [CIMTD](#). Note historic data is subject to revisions. Lumber exports in 2016 may decline (see slide 5).

Competitiveness – B.C.’s Share – B.C. accounted for 84.9% of Canada’s total forest product exports to Japan in 2016.

B.C. Interior Harvest Volume and Total Stumpage Revenue



B.C. Coast Harvest Volume and Total Stumpage Revenue

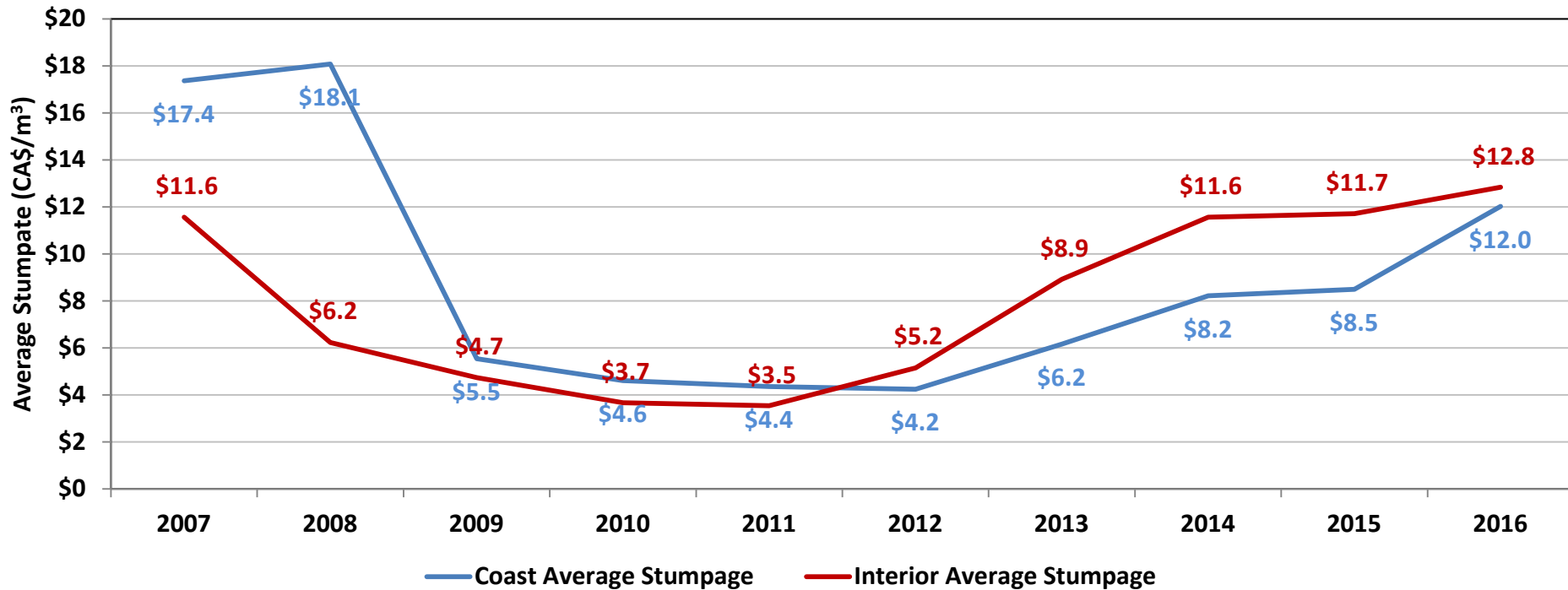


Legend: Crown Land (blue), Private/Federal Land (yellow), Stumpage Revenue (red line)

Data source: [FLNR HBS](#). All logs, special forest products, species and grades billed, excluding waste, reject and Christmas trees. Data run on May 1, 2016.

Competitiveness – Government Revenues – Government stumpage revenue increased 42.5% on the Coast with a 0.6% increase in Crown harvest, and stumpage revenue was up 2.0% in the Interior with a 6.9% decrease in Crown harvest.

Average Stumpage Rates (CA\$/m³)



Data source: [FLNR HBS](#). Data run on May 1, 2017. Includes BCTS. Excludes waste and reject.

Competitiveness – Government Revenues – In 2016, Interior average stumpage increased CA\$1.1/m³ (10%) and Coast average stumpage increased CA\$3.5/m³ (42%).

Additional Sources for Data

- ❖ Statistics Canada [wood product tables](#).
- ❖ Canadian [National Forestry Database](#).
- ❖ Food and Agriculture Organization of the United Nations
([FAO](#))