



Forest Fact Book 2017–2018



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Preface

The purpose of the *Forest Fact Book* is to provide key information related to Canada's forest industry and forest products in a format that is easy to consult.

The data and information in this edition cover the 2016 calendar year except where noted otherwise. Historical trend information is also included when possible. Extraction dates for data are available in the "Sources" chapter. All data are subject to revisions by statistical sources. In some instances, more than one source may be available and discrepancies in numbers may occur because of conceptual or methodological differences. In addition, some numbers may not add correctly because of rounding.

Data from Statistics Canada's new Natural Resources Satellite Account (NRSA) are a key source of information on the economic contribution of the forest sector in Canada and will be included in future releases of the *Forest Fact Book*. The NRSA is the result of collaboration between Natural Resources Canada (NRCan) and Statistics Canada.

This publication was assembled by the Canadian Forest Service of NRCan.

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Key Facts and Figures

In 2016, the Canadian forest industry . . .



supported economic activities from coast to coast, providing **211,075 direct jobs**, many of which are located in rural areas across Canada.



employed an estimated **9,700** Indigenous people.



contributed \$23.1 billion to nominal GDP.



exported forest products to over 170 countries.



generated over \$4.2 billion in operating profits.



continued to diversify with **innovative forest products** and expanded markets.



applied **Sustainable** forest management practices to ensure that the social, economic and environmental benefits of forests are available for generations to come.



Each year, Canada harvests **less than 0.5%** of its **347 million hectares** of forest.

By law, all forests harvested on Canada's public lands must be **successfully regenerated**.

Sources: See "Sources" for more detail.

Forest Industry – National Picture

Market Dynamics

Canada's forest sector is an important source of wealth for Canadians from coast to coast. The sector has weathered a number of challenges over the past decade (e.g. collapse of the United States [U.S.] housing bubble, declining demand for printing and writing paper, one of the commercially worst insect outbreaks to ever hit Canada) that resulted in many mill closures and thousands of jobs lost. The forest industry responded to these challenges by developing new and innovative products, materials, and services and by diversifying its international markets.

Some of the ongoing challenges the industry faces today include:

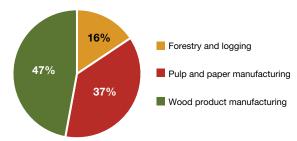
- structural shifts in demand for traditional products (e.g. collapse in demand for newsprint);
- the emergence of competitive producers in Asia, South America, and the U.S. South:
- the residual impacts of mountain pine beetle in Western Canada and the emergence of spruce budworm in Ontario, Quebec, and Eastern Canada; and
- rising global protectionism and trade disputes.

At the same time, the industry faces tremendous opportunities:

- technological advances unlocking new uses for fibre (e.g. bioplastics, bioenergy);
- rising demand for renewable, low-carbon, and legally sourced products, especially as alternatives to fossil-based products;
- increased recognition of the safety and environmental benefits of building with wood; and
- new export opportunities and trade agreements.

Market Structure

Nominal gross domestic product by forest industry subsector, 2016

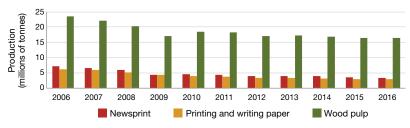


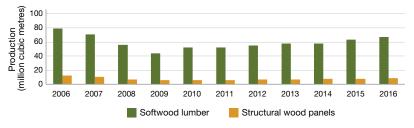
Source: Natural Resources Canada-Canadian Forest Service's calculations based on Statistics Canada's CANSIM Table 379-0031: Gross domestic product (GDP) at basic prices, by North American Industry Classification System (NAICS). See "Sources" for more detail.

- The forest industry is traditionally classified into three categories: forestry
 and logging, pulp and paper product manufacturing, and solid wood product
 manufacturing. Because they are the three largest and best-tracked segments
 of the forest sector, most data presented will be based on this traditional
 definition.
- In 2016, wood product manufacturing was the largest of the industry's subsectors, followed by pulp and paper product manufacturing and then forestry and logging.
- Limited data are available for forest sector activity in non-traditional markets such as biofuels and bioproducts. The Government of Canada is currently in the process of improving the availability of bioeconomy data, especially for macroeconomic indicators integrated with traditional forest sector activities such as GDP and employment.

Production





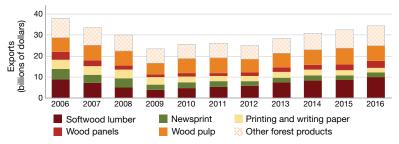


Sources: Lumber – Statistics Canada; panels – APA, The Engineered Wood Association; pulp and paper products – Pulp and Paper Products Council. See "Sources" for more detail.

- In 2016, Canadian production of solid wood products saw strong growth thanks to rising U.S. demand, while production of pulp and paper continued to decline.
- Production of softwood lumber increased by 6.2% and production of structural panels increased by 9.6% in 2016 over 2015 levels. This is the highest level of production for these two products since 2008, though still below historical peaks.
- Newsprint production fell by 4%, and production of printing and writing papers and of wood pulp showed small declines, 1.4% and 0.3%, respectively.

Exports

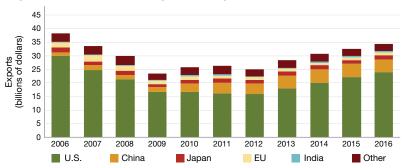
Exports of Canadian forest products, 2006–2016



- Canada's total forest products exports have grown once again, with export values rising above 2015 values as the U.S. housing market continues its post-recession recovery.
- Canada's forest products exports overall increased by 5.3% in 2016, reaching \$34.4 billion from \$32.6 billion in 2015.
- Softwood lumber exports rose by 17.4% from 2015 (to \$9.97 billion in 2016), and wood panel exports increased by 21.6% (to \$3.3 billion).
- Wood pulp exports fell by 6.1% from 2015 (to \$7.2 billion in 2016), newsprint fell by 5.6% (to \$2.2 billion), and printing and writing paper fell by 12.3% (to \$2.2 billion).

Export Markets

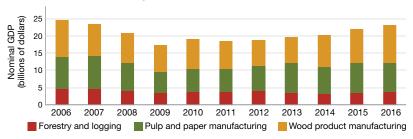
Exports of Canadian forest products by market, 2016

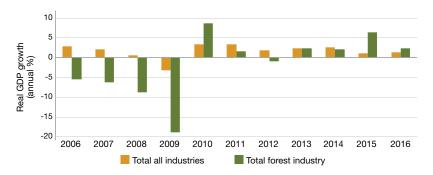


- The U.S. is the primary export destination for Canada's forest products; however, exports to other markets have become increasingly important over the last decade. Exports to Asian markets, mainly China, helped mitigate the negative consequences of the U.S. housing crash and financial crisis.
- The U.S. share of Canadian forest product exports had dropped from 81% in 2005 to 61% in 2011. With the U.S. economic and housing recovery, exports to the U.S. have since increased, representing 69% of Canadian exports in 2016.
- Market diversification efforts continue. Today, Canadian forest products are exported to over 170 countries around the world. While globalization has also brought increased competition from low-cost producers, Canada will continue to benefit from greater access to large offshore markets.

Gross Domestic Product

Canadian forest industry's GDP, 2006-2016

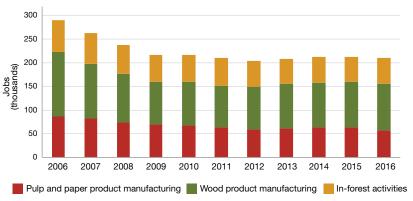




- The forest industry contributed over \$23.1 billion (1.3%) to Canada's nominal GDP in 2016.
- The forest industry outperformed the overall Canadian economy in 2016, growing by 2.4% from 2015 while the Canadian economy grew by 1.4%.
- Wood product manufacturing, which accounts for almost half of forest industry GDP, grew by over 6% (real GDP) from 2015 to 2016.

Employment

Forest industry direct employment, 2006-2016



Source: Statistics Canada, System of National Accounts. See "Sources" for more detail.

- After three years of consecutive increases, total direct employment in the Canadian forest industry decreased slightly in 2016 to 211,075 jobs, a decline of 1.1% from 2015 employment levels.
- Employment in pulp and paper manufacturing continued to decline as demand for paper products fell.
- Employment in forestry and wood product manufacturing increased overall, as demand rose from the U.S. housing market but fell in the Prairie provinces because of the impact of lower oil prices and the Fort McMurray wildfire. See page 14 for more details on regional employment.

Financial Performance

Financial performance by Canada's forest industry, 2006–2016

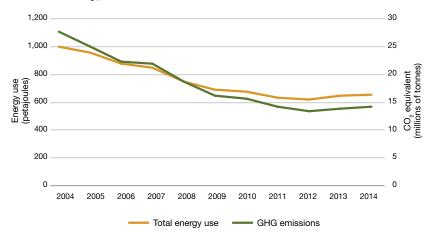


Source: Statistics Canada, Quarterly financial statistics for enterprises. See "Sources" for more detail.

- The financial performance of Canada's forest industry improved in 2016.
 This was largely the result of demand growth in wood markets that pushed up prices, together with a weaker Canada-U.S. exchange rate that helped all forest product exporters.
- Operating profits in 2016 rose by 31.3% from 2015 levels.
- Return on capital employed increased to 8.6% in 2016 (up from 7.1% in 2015), its highest level since 2009.

Carbon Emissions

Fossil fuel greenhouse gas emissions and total energy use in Canada's forest industry, 2004–2014



- Energy use in the Canadian forest industry has steadily decreased over the last 10 years, while net greenhouse gas (GHG) emissions (expressed as carbon dioxide equivalent [CO_oe]) have fallen at an even steeper rate.
- The forest sector's ability to generate its own electricity, largely from bioenergy, has reduced its reliance on fossil fuels.
- Bioenergy continues to increase its share of the energy mix, accounting for 56% of forest industry energy use in 2014, up from 49% in 2000 and 43% in 1990.
- Between 2004 and 2014, the forest industry reduced energy use by 35% and GHG emissions by 49%.

Forest Industry – Regional Picture

Regional Market Dynamics

Over the past decade, Canada's forest industry has weathered a deep cyclical decline in demand and structural changes in global paper markets as electronic media has pervaded daily life around the world.

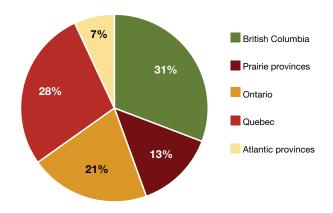
The impact of these changes has varied among regions in Canada.

Eastern Canada, where paper production has been historically concentrated, was the hardest hit by the shrinking paper markets, though rising demand in Europe for wood pellets is supporting a growing pellet industry in eastern Canada.

Western provinces are more focused on wood products and market pulp. In addition to its different industrial profile, western Canada has a location advantage, with better access to the growing offshore markets in Asia.

This regional divergence is expected to continue, given the varying outlooks of subsectors (negative for most paper products and positive for wood products and bioenergy).

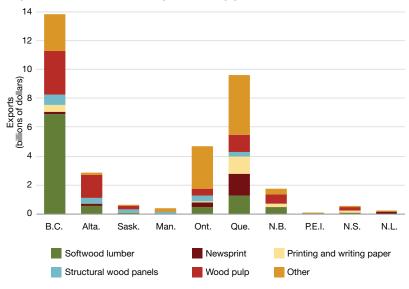
Forest industry real gross domestic product by region, 2016



Source: Statistics Canada, Chained (2007) dollars. See "Sources" for more detail.

Exports

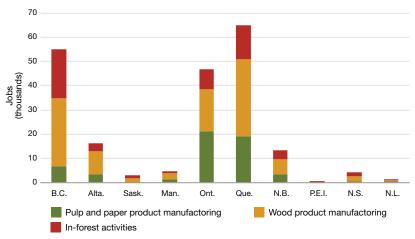
Exports of Canadian forest products by province, 2016



- British Columbia is Canada's top exporter of softwood lumber and the most diversified in terms of foreign markets.
- A large proportion of the pulp produced in eastern provinces is used in the domestic manufacturing of paper products; western provinces dominate in terms of wood pulp exports.
- Quebec represents the bulk of Canada's remaining newsprint exports.
 When newsprint demand declined in traditional North American and European markets, Quebec exporters diversified into emerging markets such as Brazil and India.

Employment

Forest industry direct employment by province, 2016



Source: Statistics Canada, System of National Accounts. See "Sources" for more detail.

- Almost 80% of forest industry employment is concentrated in three provinces: Quebec (31%), British Columbia (26%) and Ontario (22%).
- However, proportionally, the forest industry represents a larger percentage of New Brunswick's total workforce at 3.7%, followed by British Columbia (2.3%) and Quebec (1.6%).

Forest Products

Canada is the world's fourth-largest forest product exporter, meeting consumers' needs at home and in over 170 countries around the world. Forest products can be broken down in broad categories, such as solid wood products (which includes softwood lumber and structural wood panels), wood pulp (which includes northern bleached softwood kraft pulp [NBSK]), paper products (including newsprint, printing and writing paper), and bioproducts (e.g. biofuels, biochemicals, bioplastics).

This section provides information on forest product production and exports, at both global and regional scales.

Global Quick Facts (2016)

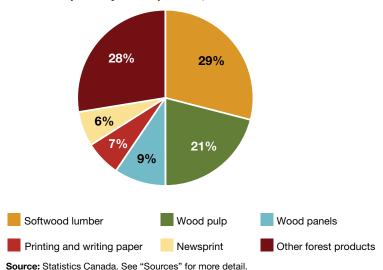
- Canada is the second-largest softwood lumber producer in the world, with British Columbia accounting for 69.4% of the share of total softwood lumber exports in Canada.
- Canada's largest export market for wood pulp is China, accounting for 41% of the value of wood pulp exports.
- Canada produces 14.2% of the world's newsprint, and Quebec produces 66.2% of the share of total exports of newsprint in Canada.
- The United States (U.S.) imports 89% of the value of Canada's printing and writing paper.
- The U.S. accounts for 93% of the value of our structural wood panels exports, 81% of which is oriented strand board (OSB).
- While softwood lumber accounts for \$9.97 billion in export value, wood pulp is a close second export product with over \$7.2 billion in export value in 2016.

Canada's position in the world: Product overview

Product	Canada's world rank for production (2015, by quantity)	Canada's world rank for apparent consumption (2015, by quantity)	Canada's world rank for exports (2016, by value)	Canada's top export markets (2016, by value)
Softwood lumber	2	4	1	U.S., China, Japan
Northern bleached softwood kraft pulp	1	6	1	China, U.S., Indonesia
Packaging	17	18	8	U.S., China, Finland
Printing and writing paper	8	12	8	U.S., Mexico, Germany
Newsprint	1	17	1	U.S., India, United Kingdom
Oriented strand board	2	2	1	U.S., Japan, South Korea
Plywood	9	5	8	U.S., Australia, United Kingdom
Household and sanitary paper	11	11	7	U.S., China, Mexico
Logs (industrial)	4	4	3	China, Japan, U.S.
Dissolving pulp	3	11	3	India, Indonesia, Thailand
Wood pellets	3	16	2	United Kingdom, Japan, U.S.
Hardwood lumber	12	10	5	U.S., China, Japan
Recovered paper	14	25	8	China, U.S., South Korea

Sources: Statistics Canada, Food and Agriculture Organization of the United Nations, and FisherSolve™. See "Sources" for more detail.

Share of exports by forest product, 2016



Top 10 forest product exports for Canada, 2016

Ranking	Product	Exports (billion CAD)
1	Softwood lumber	9.97
2	Northern bleached softwood kraft pulp	4.51
3	Packaging	2.92
4	Printing and writing paper	2.25
5	Newsprint	2.20
6	Structural wood panels	2.16
7	Household and sanitary paper	1.57
8	Semi-chemical pulp	1.14
9	Softwood logs	0.79
10	Non-structural wood panels	0.75
	Other	6.14

Softwood Lumber

- Softwood lumber refers to harvested coniferous wood that is transformed into dimension lumber, machine stress rated lumber, softwood boards and timber.
- Softwood lumber is used mostly in residential construction, and therefore market trends are often closely aligned with housing construction in the U.S., especially with single family dwellings.
- Softwood lumber accounts for 29% of the value of Canada's forest product exports.
- The U.S. accounts for 75% of the value of our softwood lumber exports.
- Softwood lumber exports are expected to remain heavily dependent on demand from the U.S. housing market. However, efforts are being made both domestically and abroad to improve market opportunities for Canadian lumber.

Global ranking for softwood lumber production by volume, 2015

Rank	Country	% of world production
1	United States	16.9
2	Canada	14.1
3	China	10.3
4	Russia	10.0
5	Germany	6.4
All others	-	42.3

Source: Food and Agriculture Organization of the United Nations. See "Sources" for more detail.

Global ranking for softwood lumber exports by value, 2016

Rank	Country	% of world value
1	Canada	31.7
2	Russia	12.4
3	Sweden	12.0
4	Finland	7.6
5	Germany	6.1
All others	-	30.1

Source: Global Trade Atlas®. See "Sources" for more detail.

Canadian trade indicators for softwood lumber, 2016

Softwood lumber	Volume (m³)	Value (CAD)
Production	66,862,300	-
Consumption	22,724,824	-
Exports	45,322,341	9,972,979,416
Imports	1,184,865	273,524,102

Sources: Statistics Canada, Natural Resources Canada. See "Sources" for details.

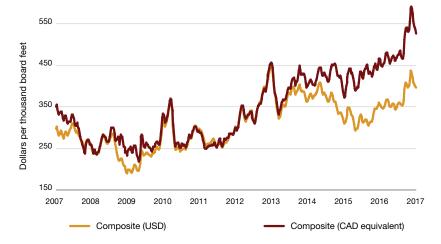
Top export markets for Canada for softwood lumber, 2016

Country	Value (CAD)
United States	7,501,988,157
China	1,031,110,996
Japan	772,147,123
Philippines	103,318,129
Taiwan	77,608,019

Top export markets and share of total value of exports by province softwood lumber, 2016

Province	Share of total value of exports (%)	Top export markets	Export market value (ranked by top markets by province) (CAD)
British Columbia	69.4	United States	4,551,467,012
		China	1,022,639,201
		Japan	725,701,542
Quebec	13.2	United States	1,292,019,264
		Mexico	6,673,745
		Saudi Arabia	5,787,108
Alberta	5.7	United States	511,600,032
		Japan	45,510,705
		China	6,124,075
Ontario	5.0	United States	489,813,961
		Mexico	1,371,949
		Pakistan	864,253
New Brunswick	4.7	United States	468,604,040
		China	554,804
		Pakistan	262,749
Nova Scotia	1.0	United States	91,148,126
		Pakistan	2,602,966
		Germany	586,944
Saskatchewan	0.8	United States	82,830,990
		Mexico	207,603
Newfoundland and Labrador	0.1	United States	7,911,500
		Saint-Pierre and Miquelon	2,696
Manitoba	0.1	United States	6,402,627
		Malaysia	185,379
		Japan	122,933
Prince Edward Island	0	United States	190,605

Weekly lumber prices in North America, 2007–2017



Note: Random Lengths composite prices in U.S. dollars, converted to Canadian dollars based on exchange rates posted by the U.S. Federal Reserve.

Sources: Random Lengths, used with permission granted by the publisher. U.S. Federal Reserve

- U.S. softwood lumber prices recently reached a four-year high (USD, yellow) as the industry waited for the announcement of softwood lumber duties from the U.S. Prices have been in decline and have not yet stabilized since the announcement.
- Since 2013, the Canadian dollar has been weaker than the U.S. dollar, causing the red line to diverge.

Wood Pulp

- Pulp is a fibrous material made by breaking down wood with mechanical force or chemicals and is an intermediate product used to produce paper and other materials. Wood pulp products include:
 - o northern bleached softwood kraft pulp (NBSK)
 - o bleached chemi-thermo-mechanical pulp (BCTMP)
 - o commodity and specialty dissolving pulp
- Pulp is predominantly used to produce paper, packaging and hygiene products. Dissolving pulp is used to produce non-paper materials including rayon fabric and biochemicals such as food thickeners and paint additives.
- Canada has the largest share of the global NBSK market. That share represents almost one third of world production and three quarters of total NBSK capacity in North America.
- China is Canada's top export market and accounts for 41% of the value of Canada's wood pulp exports.
- Canada is in a healthy position within the pulp market, as NBSK is an
 increasingly important pulp grade for paper and tissue production.
 However, the value of the Canadian dollar has a major impact on
 performance, given the global nature of this market.

Global ranking for wood pulp production by volume, 2015

Rank	Country	% of world production
1	United States	28.1
2	Brazil	10.1
3	Canada	10.0
4	Sweden	6.6
5	Finland	6.0
All others	-	39.2

Source: Food and Agriculture Organization of the United Nations. See "Sources" for more detail.

Global ranking for wood pulp exports by value, 2016

Rank	Country	% of world value
1	Brazil	17.7
2	Canada	17.2
3	United States	16.4
4	Chile	7.6
5	Sweden	6.4
All others	-	34.7

Source: Global Trade Atlas. See "Sources" for more detail.

Canadian trade indicators for wood pulp, 2016

Wood pulp	Volume (tonnes)	Value (CAD)
Production	16,508,000	-
Consumption	7,142,119	-
Exports (air dry metric tonnes)	9,909,578	7,203,578,131
Imports (air dry metric tonnes)	543,697	253,281,600

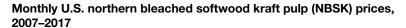
Sources: Statistics Canada, Natural Resources Canada. See "Sources" for details.

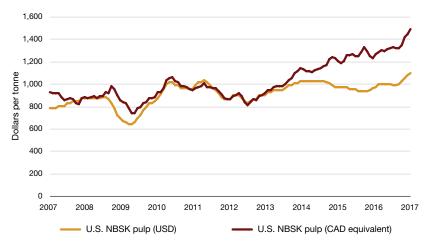
Top export markets for Canada for wood pulp, 2016

Country	Value (CAD)
China	2,976,029,288
United States	2,374,217,979
Indonesia	388,598,794
Japan	304,645,886
South Korea	253,046,478

Top export markets and share of total value of exports by province wood pulp production, 2016

Province	Share of total value of exports (%)	Top export markets	Export market value (ranked by top markets by province) (CAD)
British Columbia	41.6	China	1,800,871,516
		United States	371,408,032
		Indonesia	225,799,205
Alberta	21.8	United States	729,771,776
		China	482,222,012
		Japan	137,165,361
Quebec	16.4	United States	633,323,986
		China	284,048,417
		Taiwan	59,730,740
New Brunswick	7.7	United States	227,655,130
		India	121,216,685
		Indonesia	78,181,870
Ontario	6.1	United States	391,700,305
		Mexico	35,865,582
		China	10,147,815
Saskatchewan	3.3	China	189,751,167
		Indonesia	39,829,392
		United States	1,357,239
Nova Scotia	3.1	China	171,976,726
		Indonesia	23,031,138
		United States	18,987,575
Manitoba	0	United States	13,936





Note: Brian McClay & Associates, Inc. pulp prices in USD, converted to CAD based on exchange rates posted by the US Federal Reserve.

Source: Brian McClay & Associates, Inc., used with permission granted by the publisher. Currency conversion based on the U.S. Federal Reserve.

- NBSK pulp prices have been stable in recent years and have been showing improvement in 2017 because of the limited supply of competing pulps. It is expected that prices will peak in the near future and then decrease as foreign capacity increases from planned investments and demand decreases as the high NBSK premium drives buyers to shift toward using more lower-quality and lower-cost pulps.
- Since 2013, the Canadian dollar has been weaker than the U.S. dollar, causing the price in Canadian dollars (red line) to diverge.

Newsprint

- Newsprint is a relatively low-cost paper product made from thermomechanical pulp. Used predominantly in newspapers and sometimes in flyers and catalogues, newsprint is best suited for low-cost, short-life applications.
- Newsprint is normally produced in integrated facilities that produce both pulp and newsprint at the same site. A variety of softwood species (such as black spruce and balsam fir) are used to make pulp for newsprint.
- Canada ranks first in the world for the production of newsprint, accounting for 14.2% of the world's production of newsprint.
- Canada's top four export markets include the U.S., India, the United Kingdom and Brazil, with Quebec accounting for 66.2% of the total value of exports for Canada.
- The market for newsprint in Canada is expected to continue its slow decline as consumer preferences continue to shift toward digital media.

Global ranking for newsprint production by volume, 2015

Rank	Country	% of world production
1	Canada	14.2
2	Japan	12.0
3	China	11.9
4	Germany	7.1
5	United States	6.7
All others	-	48.2

Source: Food and Agriculture Organization of the United Nations. See "Sources" for more detail.

Global ranking for newsprint exports by value, 2016

Rank	Country	% of world value
1	Canada	34.9
2	Russia	9.0
3	South Korea	8.2
4	Sweden	7.7
5	Germany	6.9
All others	-	33.4

Source: Global Trade Atlas. See "Sources" for more detail.

Canadian trade indicators for newsprint, 2016

Newsprint	Volume (tonnes)	Value (CAD)
Production	3,353,000	-
Consumption	296,429	-
Exports	3,106,279	2,202,463,055
Imports	49,708	32,903,765

Sources: Statistics Canada, Natural Resources Canada. See "Sources" for details.

Top export markets for Canada for newsprint, 2016

Country	Value (CAD)
United States	1,359,808,363
India	273,270,521
United Kingdom	106,902,687
Brazil	76,964,493
Peru	33,847,819

Top export markets and share of total value of exports by province newsprint, 2016

Province	Share of total value of exports (%)	Top export markets	Export market value (ranked by top markets by province) (CAD)
Quebec	66.2	United States	816,396,555
		India	238,122,163
		United Kingdom	91,560,343
Ontario	12.9	United States	269,707,899
		India	9,292,519
		Brazil	1,686,282
British Columbia	7.2	United States	44,899,966
		Taiwan	19,633,823
		Hong Kong	13,414,876
Newfoundland	6.6	United States	77,081,525
and Labrador		Israel	17,019,641
		United Kingdom	15,341,990
Alberta	5.6	United States	119,155,538
		Taiwan	3,736,555
		India	299,317
New Brunswick	1.5	United States	32,447,444
Nova Scotia	0	France	237,500
		Papua New Guinea	199,456
		Mexico	84,267
Manitoba	0	United States	44,148
Saskatchewan	0	United States	12,669

Printing and Writing Paper

- Printing and writing paper is used to produce a wide variety of office papers for printers and copiers, bond and writing paper, envelopes, forms, pads of paper, and offset printing paper.
- Printing and writing paper is a higher grade, better quality paper than newsprint. It is made using both northern bleached softwood kraft and bleached chemi-thermo-mechanical pulps with at least 20% mechanical pulp.
- Canada ranks eighth in the global production of printing and writing paper; Quebec, New Brunswick and Nova Scotia account for nearly 75% of the total Canadian production.
- The U.S. accounts for 89% of the total export value of Canada's printing and writing paper products.
- The market for printing and writing paper is expected to continue to decline, as prices have been at an all-time low and demand has been declining similar to newsprint.

Global ranking for printing and writing paper production by volume, 2015

Rank	Country	% of world production
1	China	24.4
2	United States	14.1
3	Japan	8.1
4	Germany	6.8
5	Finland	5.5
All others	-	41.1

Note: Canada ranks eighth and accounts for 3.2% of the global production of printing and writing paper.

Source: Food and Agriculture Organization of the United Nations. See "Sources" for more detail.

Global ranking for printing and writing paper exports by value, 2016

Rank	Country	% of world value
1	Germany	12.4
2	Finland	10.3
3	China	8.9
4	Indonesia	6.9
5	Sweden	5.6
All others	-	56.0

Note: Canada ranks eighth and accounts for 5.2% of the global exports value of printing and writing paper.

Source: Global Trade Atlas. See "Sources" for more detail.

Canadian trade indicators for printing and writing paper, 2016

Printing and writing paper	Volume (tonnes)	Value (CAD)
Production	2,995,000	-
Consumption	1,310,293	_
Exports	2,340,623	2,245,653,014
Imports	655,916	912,471,923

Sources: Statistics Canada, Natural Resources Canada. See "Sources" for details.

Top export markets for Canada for printing and writing paper, 2016

Country	Value (CAD)
United States	2,010,084,346
Mexico	69,240,136
Germany	40,228,888
Australia	14,610,938
Colombia	12,870,232

Top export markets and share of total value of exports by province – printing and writing paper, 2016

Province	Share of total value of exports (%)	Top export markets	Export market value (ranked by top markets by province) (CAD)
Quebec	54.9	United States	1,096,585,544
		Germany	38,129,111
		Mexico	36,333,878
British Columbia	20.1	United States	371,961,274
		Mexico	19,161,582
		Australia	14,217,529
New Brunswick	11.6	United States	258,238,312
		Mexico	1,840,697
		Dominican Republic	188,963
Nova Scotia	7.7	United States	160,045,823
		Mexico	9,203,021
		France	1,417,313
Ontario	5.6	United States	122,749,112
		Mexico	2,700,948
		India	239,794
Saskatchewan	0	United States	210,097
Manitoba	0	United States	173,043
		Mexico	10
Alberta	0	United States	121,141
		Cuba	103
		Congo	28
Newfoundland and Labrador	0	Saint-Pierre and Miquelon	450

Structural Wood Panels

- Oriented strand board (OSB) is an engineered structural panel composed of strands of wood cut from small logs.
 - It is used primarily as a load-bearing component in platform-frameconstructed buildings such as single family and multi-family housing.
 It is used in wall sheathing, flooring and roofing applications. It is also used as a component in the manufacture of other products, including furniture and engineered wood products.
- Plywood is a structural panel composed of multiple layers of thinner veneers of wood.
 - It is used primarily as a load-bearing component of platform-frameconstructed buildings such as single family and multi-family housing.
 It is used in wall sheathing, flooring and roofing applications.
 Particularly thick plywood with a special surface treatment is also used to line concrete forms in concrete-based construction.
- Wood panels account for 9% of the value of Canada's forest product exports. Three quarters (74%) of wood panel export value is from structural panels and the remaining one quarter is from non-structural panels.
- The U.S. accounts for 93% of the value of our structural wood panels exports, 81% of which is OSB.
- Similar to softwood lumber, exports of structural wood panels (namely OSB) are expected to be driven by demand from the U.S. housing market.

Global ranking for structural wood panels production by volume, 2015

Rank	Country	% of world production
1	China	61.9
2	United States	11.4
3	Canada	4.9
4	Indonesia	3.1
5	Russia	2.4
All others	-	16.2

Source: Food and Agriculture Organization of the United Nations. See "Sources" for more detail.

Global ranking for structural wood panels exports by value, 2016

Rank	Country	% of world value
1	China	34.5
2	Indonesia	14.4
3	Canada	10.7
4	Russia	6.2
5	Finland	3.7
All others	-	30.5

Source: Global Trade Atlas. See "Sources" for more detail.

Canadian trade indicators for structural wood panels, 2016

Softwood lumber	Volume (m³)	Value (CAD)
Production	8,728,654	-
Consumption	4,182,213	_
Exports	6,066,842	2,158,964,191
Imports	1,520,401	496,528,525

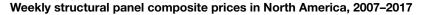
Sources: Statistics Canada, Natural Resources Canada. See "Sources" for details.

Top export markets for Canada for structural wood panels, 2016

Country	Value (CAD)	
United States	2,016,267,440	
Japan	56,031,201	
South Korea	17,987,743	
China	14,555,776	
Australia	13,224,669	

Top export markets and share of total value of exports by province structural wood panels, 2016

Province	Share of total value of exports (%)	Top export markets	Export market value (ranked by top markets by province) (CAD)
British Columbia	32.9	United States	593,139,104
		Japan	55,339,289
		China	13,320,636
Alberta	20.0	United States	429,478,382
		South Korea	1,738,854
		China	265,648
Ontario	18.4	United States	395,862,680
		Bermuda	917,677
		Australia	184,962
Quebec	12.4	United States	248,568,450
		South Korea	9,598,524
		Chile	6,568,191
Saskatchewan	10.2	United States	219,023,855
		South Korea	725,222
		Japan	670,475
Manitoba	6.0	United States	129,486,805
		Mexico	11,853
		Paraguay	65
Nova Scotia	0.1	Netherlands	815,225
		Saint-Pierre and Miquelon	190,146
		France	43,830
New Brunswick	0	United States	609,346
		China	7,451
		Saint-Pierre and Miquelon	4,455
Prince Edward Island	0	United States	63,795





Note: Random Lengths structural panels composite prices in U.S. dollars, converted to Canadian dollars based on exchange rates posted by the U.S. Federal Reserve.

Sources: Random Lengths, used with permission granted by the publisher. U.S. Federal Reserve.

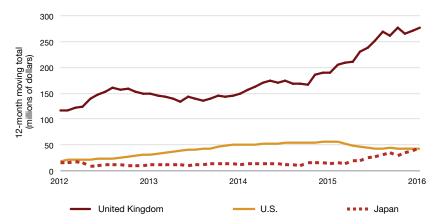
- Panel prices have been relatively stable the last four years, recently reaching a four-year high (in U.S. dollars, yellow). In early 2017, price increases were responding to low inventory levels as seasonal and cyclical demand for panels increased. New capacity, expected to come on-line over the coming year, will moderate future prices.
- Differences between the U.S. dollar and Canadian dollar are due to changes in the exchange rate. Since 2013, the Canadian dollar has been weaker than the U.S. dollar, causing the red line to diverge.

Bioenergy and Bioproducts

- The Canadian forest industry has a long history of using wood residues as a renewable energy source. First used mainly for facility heating, mill and forest residues have become feedstock for sophisticated steam and electricity cogeneration facilities, lumber drying kilns, and new bioenergy products such as wood pellets, syngas, cellulosic ethanol, biodiesel, bio-oil, biocarbon, and much more.¹
- In 2014, bioenergy use in all sectors (residential, commercial, industrial, transportation and agriculture) accounted for 6% of Canada's total energy use.² The majority of bioenergy sources were wood pellets, firewood, wood waste and pulping liquor. Approximately 56% of total energy use by the forest industry is from wood waste and pulping liquor. The pulp and paper segment leads the rest of the forest industry with 60% of total energy coming from bioenergy sources.³ From 1990 to 2014, Canada's pulp and paper industry increased its use of bioenergy from 44% to 60%. Conversely, the industry decreased its use of heavy oil and natural gas from 13% and 16% of total energy use to 1% and 13%, respectively, resulting in a greenhouse gas (GHG) savings of 9 megatonnes of carbon dioxide equivaltent.³
- Bioenergy, on a life-cycle basis, can significantly reduce GHG emissions. A recent study found that creating biofuels from sustainably sourced biomass such as sawmill or harvest residues and using them to displace fossil fuels for heat and power production could reduce life-cycle GHG emissions by between 42% and 52% on average across Canada. Cellulosic ethanol and methanol are in the early stages of development with facilities in Canada producing only very small volumes at this time.^{4,5}
- Canada's installed biomass electric capacity was 2,408 megawatts in 2015. From 2005 to 2015, biomass generation grew by 54%, accounting for 1.7% of Canada's total electric capacity in 2015. Biomass accounted for 2.8% of electricity generation from renewable resources (such as hydro, wind, solar, and biomass) and 1.9% of all electricity generation in Canada in 2015.⁶

• Over the past few years, community heat installations have grown considerably in Canada. From 2013 to 2016, community heat installations increased from 126 projects to 317 projects. Quebec and the Northwest Territories lead the rest of Canada, representing 54% of installations in 2016. These projects range from small biomass plants providing space heat or process heat to one or two buildings to large plants, such as the one found in the Cree First Nation community in Ouje-Bougoumou, Quebec, which supplied heat to 140 homes and 20 public buildings.⁷

Canadian export value of wood pellets by country



Source: Statistics Canada, 2017. See "Sources" for more information.

• Canada's wood pellet industry continues to grow. From 2013 to 2016, Canadian wood pellet capacity increased 6% to 3.4 million tonnes (t), and production increased by 18% to 2.9 million t.⁷ Over the past decade, Canada has experienced strong growth in wood pellet exports, increasing 73% between 2012 and 2016. In 2016, over 65% of Canadian pellets were exported to Europe, and the main markets for Canadian pellets were the United Kingdom, U.S, and Japan. In 2016, pellet exports were valued at \$409.5 million, up from \$285.0 million in 2015.8

• In 2015, there were 190 businesses engaged in bioproducts production and development. Bioproducts are defined as products produced from biomass, for example, biofuels such as ethanol and biodiesel; bio-gas and bioenergy; organic chemicals such as biopolymers; bio-pesticides; plantmade biologics; non-conventional construction materials and composites; intermediary biochemicals; and biomaterials (if produced in a non-conventional manner). From 2009 to 2015, bioproduct revenues increased from \$1.3 billion to \$4.3 billion. Biofuel accounted for \$2.7 billion or almost two thirds of total revenues in 2015. Total employment increased from 3,019 to 5,618 from 2009 to 2015, while the percentage of revenues spent on research and development increased from 0.4% to 1.2%.9,10

Sources: See the Bioenergy section in "Sources" for more details about notes 1 to 10.

Sources

Key Facts

Employment

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Forest product exports by destination

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Forest Industry - National Picture

Canada's Positon in the World: Overview

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Real GDP in 2007 constant prices.

Note: Data from Statistics Canada's new Natural Resources Satellite Account (NRSA) are a key source of information on the economic contribution of the forest sector in Canada. The NRSA, the result of collaboration between NRCan and Statistics Canada, is able to capture economic activity in forest industry segments that have traditionally been difficult to measure, such as wood furniture manufacturing. According to data from the NRSA, the forest sector directly accounted for \$25.2 billion (or 1.3%) of Canada's nominal GDP in 2016.

Employment

Statistics Canada. CANSIM Table 383-0031: Labour statistics consistent with the System of National Accounts (SNA), by province and territory, job category and North American Industry Classification System (NAICS). www5.statcan.gc.ca/cansim/a26?lang=eng&id=3830031 (accessed May 26, 2017).

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Forest Industry - Regional Picture

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Top 10 forest product exports

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