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# The Day After NAFTA

## Economic Impact Analysis

BMO Capital Markets Economics

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BMO CAPITAL MARKETS ECONOMICS

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## Executive Summary

- The growing threat to NAFTA, and all the uncertainty that possible termination entails, has prompted a myriad of questions on what this would mean for the North American economy, financial markets and monetary policies. This report delves into those issues, and explores the impact by sector and by region, looking at where the greatest vulnerabilities lie.
- Our overriding conclusion is that while the termination of NAFTA would clearly be a net negative for the Canadian economy, and a mild negative for the U.S. as well, **it is a manageable risk that policymakers, businesses, and markets would adjust to in relatively short order.** It is critical to note that policy would not stand still in the event of a negative outcome for NAFTA. Monetary policy would be looser than it would otherwise be, the Canadian dollar would adjust lower, trade policy would be aggressively aimed at securing new arrangements, and even fiscal policy would potentially adjust. All of these factors would work to mitigate the economic damage. Over the span of five years, we estimate that real GDP would be up to 1% smaller than it otherwise would have been. That's a relatively moderate impact on an economy that is expected to expand by close to 9% over that period.
- To estimate the economic cost of a NAFTA breakdown, we need to make a number of assumptions. For the purposes of this report, **we assume a “bad-but-not-worst-case scenario”, where the former Canada-U.S. Free Trade Agreement (CUSFTA) is not revived, and all parties revert to WTO-level tariffs.** Underlying this assumption is the expectation that Canada would reject a U.S. requirement that the dispute settlement mechanism be eliminated or significantly weakened. Other sticking points could be U.S. demands for a sunset clause and the termination of supply management in Canada's agricultural sector. U.S. demands for minimum automotive content and procurement in public projects would also impede a CUSFTA revival.
- For purposes of this report, **we will not delve into the implications of a ‘Zombie NAFTA’, where the U.S. Administration attempts to terminate the agreement, but opposition within Congress and by business/industry groups stalls the process.** Indeed, the legal mechanics for withdrawal from the agreement are uncertain because NAFTA itself does not contain guidelines for withdrawal and there is no precedent for the U.S. exiting an international trade agreement that has come into force. While there is scope for unilateral action by the President in initiating the withdrawal process, there is also clearly a role for Congress because of the need to implement legislation to enact, amend, or replace trade agreements. Nevertheless, the President does have levers at his disposal were he determined to take actions to undermine or frustrate the intent of NAFTA. If such a scenario were to come to pass, the prolonged uncertainty on the part of consumers and business, not to mention legal challenges, would likely result in weaker-than-baseline medium-term growth in investment, productivity and real GDP across all three countries.



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- In our assumed scenario, there will be the ongoing risk to any sector from trade actions by U.S. industry, with Canada no longer afforded the (limited) protection of the dispute resolution mechanism. However, we also assume that the Bank of Canada would cease tightening, and that the Canadian dollar would accordingly adjust quickly, with roughly a 5% depreciation (to about \$1.35, or 74 cents US).
- Importantly, it is arguably **the consumer that would be the biggest net loser from the termination of NAFTA, in all three partner countries**, and not any one industry or sector. For instance, we expect consumer prices in Canada to be roughly 0.8 percentage points higher, due to the weaker exchange rate and modestly higher tariffs. Business capital spending would also be lower than otherwise would be the case, partly due to the uncertain trade climate as well as the weakened growth outlook generally. Meantime, we would expect both exports and imports to weaken notably, but net trade to be broadly unchanged—with the Canadian dollar depreciation acting as a partial buffer for Canada.
- In Canada, the sectors we judge the most vulnerable are listed in the accompanying table, including most notably the transportation equipment industry, clothing and textiles, and food & beverages.
- By region, we judge Ontario to be the most susceptible province by far to NAFTA disruption, both due to its specific industry weighting and to its tight linkages with the U.S. economy.
- **In the U.S., we judge the macroeconomic impact to be less severe—in the vicinity of a 0.2% net reduction in real GDP from what it otherwise would be over the next five years.** Even so, we still believe it would be worse off without NAFTA, and the transportation equipment and textile industries in particular would be significantly vulnerable. On a regional basis, we view some of the border states and those with heavy agriculture exposure as the most vulnerable.
- While North America’s economies would ultimately adjust and adapt to a world without NAFTA, our conclusion is that the agreement has been a net positive for all three economies and it is deeply unfortunate that we are even considering this possibility. Ironically, even if the U.S. does eventually achieve its stated goal of reducing its trade deficit with the NAFTA partners (a deficit that was less than 0.5% of GDP last year), there is the very real possibility that this, in turn, would be offset by an even wider gap with Asia and Europe.
- Regarding the U.S. merchandise trade deficit, it should be noted that positive or negative balances are not necessarily reflections of the success of trading relationships. Rather, they depend upon a myriad of factors, including: a country’s stage of development, attractiveness to foreign investors, fiscal and monetary policies, currency level, and domestic savings rate. None of these are primarily influenced by features of trade agreements. For instance, household plus government spending, as a share of GDP, is considerably higher in the U.S. than in other advanced-economy nations. In part, this reflects the fact that the U.S., unlike most other countries, does not have a national value-added tax, which would result in lower consumer spending relative to GDP, higher savings, and likely increased exports. With a lower domestic savings rate, the U.S. requires net inflows of capital from abroad, the flip side of a current account deficit.

Table 1-1  
**Industry Vulnerability to NAFTA Termination — Canada**

Significant
Beverages and Tobacco
Chemical Products
Computers and Electronics
Electrical Equipment and Appliances
Food Products
Machinery
Plastic and Rubber Products
Textiles, Clothing and Leather
Transportation Equipment
Transportation Logistics Services
Moderate
Crops
Fabricated Metal Products
Furniture
Non-metallic Mineral Products
Primary Metal Products
Retail Trade
Wholesale Trade
Low
Livestock
Mining
Oil and Gas Extraction
Paper
Petroleum and Coal Products
Printing
Utilities
All Other Services

Source: BMO Economics

## Canadian Macroeconomy

If NAFTA is abrogated and CUSFTA suffers a similar fate (it would technically resume after NAFTA ends), then trade between Canada and the U.S. would be governed by WTO rules. Import tariffs would be applied according to each country's existing tariff schedule. Worse-case scenarios, resulting from the U.S. pulling out of the WTO and imposing more punitive tariffs or starting a global trade war, are not analysed, as they are viewed as extreme, unlikely events. The effects of such extreme scenarios would be an order of magnitude far greater than discussed here, likely leading to a downturn in Canada.

Tariff schedules vary in Canada and the U.S. depending on the product. Based on the average tariff of products by industry, we estimate the **effective trade-weighted WTO-level tariff** on Canadian shipments to the U.S. at roughly 1.7% and on U.S. shipments to Canada at 2.5% (see Appendix A on page 20 for calculations). Mexico's trade with Canada is relatively small (the nation accounts for 1.7% of Canada's exports and 3.5% of imports), and it is possible that Canada and Mexico would maintain free trade even if the U.S. were to leave NAFTA, so we do not include it in our analysis.

Given that both the U.S. and Canadian economies are running near full capacity, we assume the **import price elasticity** is less than unity—that is, the percentage decrease in imports would be less than the tariff. Both economies likely do not have sufficient resources to replace all of the displaced imports with domestically-produced goods. As well, it would be difficult to find alternative sources of supplies from other countries given tightly integrated supply chains that have taken years, if not decades, to form. For these reasons, we assume an elasticity of 0.8, meaning the imposition of a 10% tariff would reduce import volumes by 8%.

With this backdrop, we can estimate the impact of WTO-level tariffs on Canada's exports, imports and purchasing power, with consideration for the likely offset from changes in the currency. We also assess the adverse effects on investment and productivity to derive an impact on GDP and employment.

### Exports

Canadian goods exports to the U.S. accounted for 19.3% of Canadian GDP in 2016. Based on our assumed import price elasticity, an effective 1.7% tariff could curtail U.S. demand sufficiently to reduce real GDP by **0.3%**, all things equal. Additionally, U.S. businesses, fearing the risk of further disruption from cross-border supply chains, could reduce their exposure, implying a further drag on U.S.-bound exports. But all things would not be equal. The **Canadian dollar** would likely depreciate initially more than the effective tariff rate, say by as much as 5%, before stabilizing in line with the new tariff. Based on regression analysis, a 5% decline in the currency would bolster export competitiveness and, over time, offset half of the decline in GDP stemming from the tariff.

A critical factor is whether the **border thickens** post-NAFTA (such as, lengthier U.S. customs processing times and slower border crossing). There are reports of Canadian exporting firms currently opting to absorb existing (relatively low) tariffs in their pricing rather than incur the higher administrative costs of verifying that the



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goods are eligible for tariff-free status. Border thickening would especially impede Canadian exports of **services**. While services exports to the U.S. account for a relatively small 2.9% share of Canadian GDP, and tariffs tend to be very low on services, the restriction of cross-border flows of persons (notably professionals) could have a more material impact on the trade balance and economy.

## Imports

Canadian goods imports from the U.S. represent 17.8% of Canadian GDP. An effective 2.5% tariff on U.S. shipments to Canada (and assuming a 0.8% import price elasticity) would reduce imports by the equivalent of 0.4% of GDP. Border thickening that impeded services imports (3.5% of GDP) would magnify the impact. The decline in imports would be aggravated by a weaker Canadian dollar, suggesting a **possible improvement in the real trade balance** over time. However, this **would not translate into a better economic outcome**, as the spending power of Canadian households and businesses would be undermined by both costlier imports and a weaker currency. The “improvement” in the trade balance stemming from lower imports simply reflects weaker domestic demand.

The effective tariff on U.S. shipments to Canada would raise the **GDP deflator** by just over 0.4%. However, the impact could be magnified by certain products (notably autos and electronic products) that can crisscross the border several times before the finished product is sold. This might increase the impact to 0.5%. A 5% near-term decline in the Canadian dollar would add an extra 0.3% (according to estimates by the Bank of Canada)<sup>1</sup>, resulting in a roughly 0.8% temporary lift to broad measures of inflation. The increase in prices could reduce real consumer and business spending by roughly a similar amount. Since these two components account for two-thirds of the economy, the **hit from a loss of purchasing power would be 0.5% of GDP**.

## Business Investment

The negative impact on business investment in Canada would be even greater than that due to the rise in the price of imported machinery and supplies. For instance:

- Exporting from Canada would become riskier due to lengthier, and perhaps more frequent, trade disputes, including possible border thickening,
- Increased risk to the Canadian economy from the ongoing threat of more punitive protectionist measures would undermine business confidence,
- Canadian companies could shift production to the U.S. to avoid U.S. tariffs.

For these reasons, it is not unreasonable to expect business spending to decline materially if NAFTA talks fail, at least initially. Industries identified as high-to-medium risk (see the next section), which account for 12% of Canadian GDP, could reduce spending by about 10%. Even low risk industries would be affected by the threat of further protectionism, and could reduce spending modestly, by about 3%. The weighted reduction in investment would be roughly 4%. Since nonresidential investment accounts for just under 10% of GDP, the estimated decline **in investment could reduce GDP by almost 0.4%**. The reduction in business investment, together

<sup>1</sup> The study finds a 10% depreciation leads to a temporary 0.6% increase in inflation.  
<http://www.bankofcanada.ca/wp-content/uploads/2015/10/dp2015-91.pdf>

with disruptions to supply chains, would lead to **lower productivity**. Though difficult to estimate, this would have further long-term effects on GDP growth.

## Aggregate Impact on GDP and Employment

If the U.S. and Canada resorted to WTO-level tariffs, Canadian GDP could be reduced by 0.8% to 0.9% in the first two to three years, due to declines in business investment and purchasing power. The impact on the trade balance over time would likely be closer to neutral, though ultimately determined by the degree of currency depreciation. Over the medium term, the reduction in business investment and disruptions to North American supply chains could crimp productivity growth. **Given the uncertainties around our estimate, ending NAFTA could ultimately lead to a reduction in Canadian GDP of between 0.7% and 1.0% over a longer period.**

The hit to Canadian GDP would translate into less than a 0.5% decline in employment relative to baseline growth (roughly 1%), assuming half of the decline is absorbed through lower productivity (reflecting the increased uncertainties in a post-NAFTA world). The **jobless rate could rise by roughly 0.5 ppts**, assuming the normal relationship between changes in real GDP and employment.

## Bank of Canada Policy and C\$

As mentioned above, the Canadian dollar would likely weaken in anticipation of the negative impact on the economy and more accommodative Bank of Canada (BoC) policy. We judge the **BoC would shelve further rate hikes in 2018 in this scenario and potentially lower rates at least once** (but not intervene directly in FX markets), to mitigate the risk—despite what would be interpreted as temporarily higher short-run inflation owing to tariff imposition and C\$ depreciation. (We could see another round of “insurance” easing similar to the BoC’s rate cuts in 2015 due to plunging oil prices at the time.)

The lower path for interest rates, primarily over the shorter-run but also over the longer-term (owing to a slower GDP growth trend), would partly offset the purchasing power erosion for consumers and businesses.

The **C\$ would likely depreciate more than the average tariff rate in the very near-term, say as much as 5%**, before stabilizing around the average tariff rate.

## Bottom Line

Reverting to WTO-level tariffs would leave Canada unequivocally worse off than under NAFTA, but it would not be a disaster, at least for the aggregate economy. However, particular industries and regions would be disproportionately affected, as discussed in the next sections. The adverse impact could be partially mitigated by stimulative fiscal policies. Longer run, TPP2, CETA and potentially other new trade deals could help offset some of the economic impact of ending NAFTA.



## Canadian Industry

NAFTA termination and a reversion to WTO regulations and tariffs would see a variety of new trade barriers erected within North America. Cross-border movement of professionals and trade in services would become more restricted, foreign access to government procurement would be reduced, international capital flows could be impeded, and tariffs would be re-imposed across a wide range of goods for the first time in nearly 25 years. At the macroeconomic level, the impact of NAFTA termination would be decidedly negative, but the impact across North American industries would vary widely.

From a tariff standpoint, NAFTA termination would affect industries in each member country through three main channels:

- **Channel #1: Foreign-imposed tariffs would weigh on demand in domestic industries that export intensively within the NAFTA bloc** (adverse impact). Each industry's vulnerability with respect to this channel depends on its reliance on exports within the NAFTA bloc, the increase in foreign tariffs that would be expected upon termination of the agreement, and the degree to which industry export prices would adjust in order to offset the impact of the tariff on foreign buyers.
- **Channel #2: Domestically-imposed tariffs would raise costs for domestic industries that import intensively from within the NAFTA bloc** (adverse impact). Each industry's vulnerability via this channel depends on its use of imported inputs from other NAFTA members, the increase in domestic tariffs that would be expected upon termination of the agreement, the availability of alternatives produced domestically or overseas, and pricing power relative to vendors and downstream customers.
- **Channel #3: Domestically-imposed tariffs would spur some degree of import substitution**, as domestic buyers would have a new price incentive to purchase from domestic producers (beneficial offset). The benefit realized by each industry would depend on the degree to which other NAFTA members have penetrated its domestic market, the increase in domestic tariffs, the intensity of overseas competition (since part of the benefit could be captured by low-cost jurisdictions outside the NAFTA bloc), and the degree of excess domestic capacity available to satisfy greater domestic demand.

The main challenge in quantifying these effects is that the ultimate burden of any tax/tariff is not necessarily borne by the economic actor responsible for paying the tax, as prices may adjust to shift the burden elsewhere. We adopt the assumption that industries have essentially no pricing power in order to establish an upper bound for the impact of NAFTA termination. Thus, in assessing the industry impact through Channel #1, it is assumed that domestic industry bears the entire financial brunt of higher foreign tariffs, while for Channel #2, it is assumed that domestic industry bears the entire brunt of domestic tariffs (though this also implies a greater benefit through Channel #3).

Another challenge relates to the structure of available trade data. Statistical authorities in all three NAFTA countries classify imports according to the industry of



Table 3-1

## Canadian Industry Vulnerability to NAFTA Termination — Goods-Producing Industries (2016)

	Exports to U.S. (% sales)	Avg. U.S. WTO Tariff Rate (%)	Potential Tariffs to U.S. (% sales) <sup>1</sup>	Imports from U.S. (% ADM) <sup>2</sup>	Average Canadian Tariff Rate (%)	Profit Margin (%)	Return on Equity (%)
<b>Significant Vulnerability</b>							
Beverages and Tobacco	9	19.4	1.7	11	1.7	22.9	7.1
Chemical Products	60	1.6	1.0	51	1.5	12.7	12.0
Computers and Electronics	84	1.0	0.8	26	0.6	1.0	-1.4
Electrical Equipment and Appliances	60	1.5	0.9	34	1.5	4.1	6.8
Food Products	24	4.5	1.1	19	3.0	5.7	14.7
Machinery	70	1.3	0.9	48	0.4	7.7	13.8
Plastics and Rubber Products	45	3.7	1.7	33	1.1	7.0	13.8
Textiles, Clothing and Leather	59	7.5	4.4	13	8.0	5.5	15.8
Transportation Equipment <sup>3</sup>	69	2.2	1.5	52	5.1	4.7	7.6
Motor Vehicles	90	2.5	2.2	60	6.1	3.6	20.0
Motor Vehicle Parts	51	2.5	1.3	51	5.1	7.0	8.0
Aerospace	46	0.0	0.0	46	0.0	—	—
<b>Moderate Vulnerability</b>							
Crops	17	3.8	0.6	27	3.9	—	—
Fabricated Metal Products	25	2.3	0.6	25	1.4	—	—
Furniture	50	1.6	0.8	19	5.0	4.5	11.4
Non-Metallic Mineral Products	22	1.9	0.4	21	1.1	8.7	8.0
Primary Metal Products	51	1.4	0.7	32	0.6	7.2	22.9
<b>Low Vulnerability</b>							
Livestock	13	0.8	0.1	3	0.5	—	—
Mining	—	0.0	—	—	0.0	4.9	0.2
Oil and Gas Extraction	—	0.0	—	—	0.0	-15.7	-5.9
Paper	43	0.0	0.0	37	0.0	6.7	12.0
Petroleum and Coal Products	25	0.0	0.0	21	0.7	0.1	6.6
Printing	10	0.0	0.0	10	0.0	5.5	5.1
Utilities	—	0.0	—	—	0.0	9.9	5.5

Notes: Services sectors excluded due to a lack of data; forestry & logging and wood product manufacturing excluded due to the Softwood Lumber Agreement. Vulnerability classification developed by BMO Economics is based on a variety of qualitative and quantitative factors, including those presented here. NAICS-based tariff rates presented here are estimates derived from HS-based tariff schedules. <sup>1</sup> Potential tariffs are defined as industry exports times the industry tariff rate. <sup>2</sup> ADM denotes apparent domestic market, which is defined as industry sales less exports plus imports. <sup>3</sup> The transportation equipment sector also includes a small “other” component not presented here. Sources: BMO Economics, World Trade Organization, Industry Canada, Statistics Canada, Haver Analytics

the foreign seller rather than the industry of the domestic buyer. As a result, import data provides valuable information about which industries might benefit from import substitution (Channel #3), but tells us little about which industries would face a greater domestic tariff burden (Channel #2). Where possible, we endeavor to make this assessment on a qualitative basis.

### Vulnerability of Canadian Industries

Using the methodology described above, each industry in Canada has been classified into one of three groupings: **significant vulnerability, moderate vulnerability, or low vulnerability to NAFTA termination**. Industry classifications are based on a variety of qualitative and quantitative considerations, with the latter including reliance on the U.S. marketplace for sales, tariff rates expected under WTO trading rules, prospects for import substitution, and financial shock-absorbing capacity (Table 3-1). Of course, the vulnerability of an individual firm could differ materially from that of its industry depending on a wide variety of firm-specific circumstances.

#### Industries with Significant Vulnerability

In general, industries with significant vulnerability are characterized by substantial reliance on the U.S. marketplace for sales and comparatively high U.S. tariff rates

under WTO rules. Industries in this grouping may also be subject to existing financial pressure, limiting their ability to absorb the impact of a trade shock.

The **transportation equipment** industry would be one of the hardest-hit, as the trade agreement has resulted in extremely tight integration across the North American auto sector, with parts reported to cross the border up to seven times over the course of vehicle production (raising the possibility that the total tariff burden could exceed the WTO rate). In Canada, the industry's reliance on exports to the U.S. is among the highest of all industries, with 69% of total sales heading south across the border. Although the U.S. WTO tariff rate on transportation equipment is not especially high in absolute terms, at 2.2%, the industry's large U.S. exposure would put its potential tariff bill at 1.5% of sales, taking a large bite out of profit margins of around 4.7%. Given the extent of cross-border integration, the transportation equipment industry also imports intensively from the U.S., so Canada's sizeable WTO tariff rates at over 5% would weigh even further on margins.

Downstream from manufacturers, the **auto distribution** industry would also be highly affected. Conservative industry estimates suggest that the cost of vehicles produced in North America could increase by over US\$1000 on average, which would weigh noticeably on consumer demand and squeeze dealership margins. Certain dealerships would also face cost pressure far exceeding the industry average, depending on the composition of sales relative to that of domestic production. Auto distribution would be further disrupted by the greater regulatory burden of a closed-border regime, with deliveries to dealer lots likely to be delayed upon termination of the trade agreement—a particularly troubling prospect with industry sales and turnover near peak rates across the North American marketplace. Such disruptions also represent an important risk for **truck fleet management** businesses, as Canada-U.S. trade in non-energy goods has more than doubled since NAFTA was ratified, and trade barriers of any kind would risk choking the volume of cross-border shipments.

**Textile, clothing, and leather** manufacturers rely on the U.S. marketplace for nearly 60% of sales and would face lofty U.S. tariffs of around 7.5% if trade were to revert to WTO rules—the highest of all industries apart from beverage and tobacco producers. As a result, the industry's potential tariff bill amounts to 4.4% of sales. Not only does that represent the highest tariff burden of all goods-producing industries (by a factor of more than two), it would almost completely eliminate the industry's profit margin of around 5.5%. Furthermore, any benefit from import substitution would likely be limited, given the relatively small U.S. share of the Canadian market (around 13%) and aggressive competition from low-cost overseas suppliers. All of this would hasten the decline of an industry that has already seen output plummet by 50% over the past decade.

**Electrical equipment & appliance** producers and **computer & electronics** manufacturers are both acutely vulnerable, with the U.S. marketplace relied upon for 60% and 84% of sales, respectively (the latter being the highest of all industries in Canada). Although the U.S. tariff rates that would be applied to these industries are not especially high, potential tariffs on Canada's exports would still amount to nearly 1% of sales in each. Moreover, both industries are characterized by extreme price-competitiveness, which would make it difficult to raise selling prices to

accommodate new tariffs and leaves minimal room to absorb a hit to earnings. Indeed, these two industries have among the lowest profit margins and returns of all industries in the “significant” and “moderate” vulnerability categories. Any offsetting benefit from import substitution is also likely to be scant, as Canada does not import these products particularly intensively from the U.S., investment in globally competitive productive facilities would be prohibitively costly, and domestic buyers put off by Canadian import tariffs would be more inclined to seek overseas rather than domestic substitutes.

**Food and beverage & tobacco** producers would face among the highest U.S. tariffs of all industries if North American trade were to revert to WTO rules. In the beverage & tobacco space, exports to the U.S. account for less than 10% of industry sales, but with U.S. tariff rates likely to approach 20%, the financial impact of termination would nevertheless be considerable. Moreover, relatively low tariff rates in Canada suggest that the industry would receive little offset in the way of import substitution. Fortunately, relatively generous profit margins suggest that beverage & tobacco firms would generally be able to weather the impact. In the food space, post-NAFTA U.S. tariffs would be expected to run around 4.5%—far lower than the “vice” tariffs on alcohol and tobacco, but still the third-highest of all industries. The food industry also has greater reliance on the U.S. marketplace, with southbound exports accounting for 24% of sales, putting the industry’s potential tariff bill over 1% of sales. Upstream tariffs in the agriculture sector could put additional pressure on food processors, especially those that rely on inputs that cannot be grown in the Canadian climate. That said, Canadian processors selling perishable goods would be relatively well-positioned to benefit from import substitution, given the challenges associated with sourcing such products overseas.

**Machinery** manufacturers, which assemble purchased components into machines for a variety of industrial and commercial applications, have the second-highest U.S. market exposure of all Canadian industries, at 70% of sales. Thus, while post-NAFTA U.S. tariffs on machinery would not be especially high, at around 1.3%, the industry’s potential export tariff bill would still amount to nearly 1% of sales. Moreover, since Canadian tariffs on machinery imports would be very low, at just 0.4%, prospects for beneficial import substitution appear muted despite relatively high U.S. penetration into the Canadian marketplace.

**Chemical product and plastic & rubber** producers both rely heavily on the U.S. marketplace, with southbound exports accounting for 60% and 45% of total sales, respectively. In the plastic and rubber space, where WTO-level U.S. tariffs would average a sizeable 3.7%, the potential tariff bill would amount to around 1.7% of sales, which would noticeably impede profit margins of around 7%. The impact would likely be somewhat less pronounced in the chemical space, despite its greater reliance on U.S. demand, as tariffs would be a more modest 1.6% and profit margins are in double-digit territory. There is also greater scope for import substitution in the chemical product industry, where U.S. penetration into the Canadian marketplace is over 50% (against 33% in plastic & rubber) and Canadian import tariffs would be higher.

In the services sector, **wholesalers and retailers** of imported products and the **transportation logistics** industry are significantly or at least moderately vulnerable to the increase in tariffs—though the limited availability of services sector data

makes it somewhat challenging to quantify the impact<sup>1</sup>. Naturally, vulnerability within the trade sector varies widely depending on firms' reliance on imports from the U.S., the specific mix of goods traded, the Canadian tariffs that would be applied to such goods in a post-NAFTA environment, and pricing power in both upstream and downstream markets. In the retail space, where the ascension of large e-commerce players is driving aggressive price competition, it could be especially difficult for firms to pass tariffs through to consumers or to take the hit to already-lean margins.

## Industries with Moderate Vulnerability

Five industries are judged to have moderate sensitivity to NAFTA termination—four in the manufacturing sector and the crop industry. Compared to industries classified as significantly vulnerable, industries in this category generally rely less on sales to the U.S. or would be subject to lower U.S. tariff rates. As a result, termination would be expected to have a more manageable impact on business operations and financial performance.

Manufacturing industries judged moderately sensitive include **primary metal products, fabricated metal products, furniture and non-metallic mineral products**. These industries' reliance on the U.S. marketplace is generally lower than in industries gauged to have significant vulnerability to NAFTA termination, but still runs as high as 50% for furniture and primary metal products. Crucially, however, the latter two industries would both be subject to moderate U.S. tariff rates of around 1.5% if trade were to revert to WTO rules. Overall, potential U.S. tariffs would be expected to amount to less than 1% of sales across all industries in this category. Some of these manufacturing industries would also be expected to gain from import substitution, particularly the furniture industry, where Canadian import tariffs would rise to a lofty 5.0%.

**Crop producers** are also judged to have moderate exposure. Post-NAFTA U.S. tariffs would be relatively high at nearly 4%, though less than 20% of Canadian crop products are sold into the U.S. marketplace, which would limit the impact on industry costs and profitability. There is also room for import substitution within the crop space, as U.S. penetration into the Canadian marketplace exceeds 25% (though some imported products would not be feasible to grow in the Canadian climate).

## Industries with Low Vulnerability

Remaining goods-producing industries in Canada are judged to have low sensitivity to NAFTA termination. None of the industries in this group would be expected to face direct tariffs upon dissolution of the agreement, though each could still be affected by cost pressure in upstream and downstream industries, and by the expected broader macroeconomic malaise. Industries in this category include **livestock, mining, oil & gas extraction, paper products, petroleum & coal products, printing, and utilities**.

Canada's **financial services industry** would not be directly impacted by NAFTA termination. However, it could face challenges from potential border thickening that

<sup>1</sup> The retail sector includes automotive dealerships and the transportation logistics industry includes fleet services, both of which are discussed in greater detail above.

impeded the movement of professionals among the three countries and would be indirectly impacted by clients whose operations are adversely impacted by the end of the trade agreement. Weaker business and consumer confidence and slower-than-baseline increases in real GDP and employment could constrain growth in business and household loans. And, the uncertainty that would be fomented by NAFTA termination would likely temper the pace of monetary policy normalization and the recovery in lending margins.

**All remaining services industries** are judged to have low vulnerability (that is, except wholesale trade, retail trade, and transportation logistics, which are classified as more vulnerable). Services industries generally have limited reliance on trade relative to domestic sales and few (if any) would be subject to direct U.S. tariffs in a post-NAFTA world. For most, the largest adverse impact would be the elimination of NAFTA's temporary-entry provisions, which permit Canadian investors and professionals to enter the U.S. temporarily to conduct business without the need for a work permit. Without such a provision, exporters of management, financial, computing, technical, and other services would likely face an increase in administrative delays and compliance costs.

## Provincial Landscape

Ongoing NAFTA talks point to a heightened risk that the Canadian economy could face a meaningful disruption on the trade front, but the shock wouldn't be absorbed equally among the provinces. Rather, because economic structure varies so greatly across the country, the provincial impact would vary as well. To be sure, there are many moving parts when considering the impact (i.e., currency, price changes, trade substitution with other countries or interprovincially), but the following is a rough assessment of who would be hit hardest, and who's relatively sheltered.

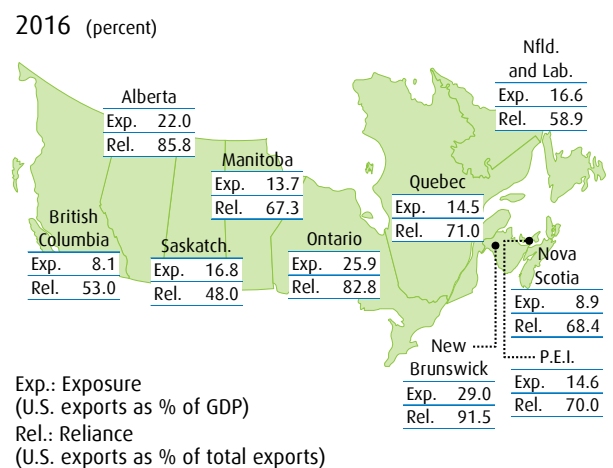
The simplest way to assess the potential impact is to look at each province's reliance on, and exposure to, U.S. exports. *Chart 4-1* shows the reliance of each province's export sector on the U.S. (i.e., share of exports that are destined for that market), as well as the economic exposure to U.S. exports (share of GDP). New Brunswick, Alberta and Ontario each send more than 80% of their exports to the U.S., leaving them with trade sectors most reliant on the U.S. market. As a share of their respective economies, New Brunswick and Ontario carry the most direct economic exposure to the U.S. market. At the other end of the spectrum, British Columbia looks the least exposed with more than 30% of exports now destined for Asian markets. While convenient, the shortfall of this approach is that the industry makeup of each province's exports is vastly different across the country, and each industry faces varying levels of vulnerability to trade negotiations. *Table 4-1* breaks down each province's U.S. exports by industry which, along with an assessment of industry vulnerability, gives a better look at where the biggest threats lie.

**Ontario** still looks like the province most at risk from a disruption to NAFTA, since its economy is arguably the most integrated with the U.S. through well-established supply chains. Indeed, Ontario's export sector is one of the most highly-levered to the U.S., with nearly 83% of shipments going south of the border in 2016. Because the province is relatively export-intensive to begin with, that leaves 26% of GDP tied to U.S. exports. And, the bulk of those exports (80% of the U.S. total) are in industries that we deem vulnerable to trade negotiations, including a whopping \$79 bln of transportation equipment exports. Indeed, the tightly-integrated auto sector is probably the key area of concern for province, especially when considering activity in other areas that feed off the sector. All told, U.S. exports in vulnerable sectors account for roughly 20% of Ontario GDP, the highest share in Canada by a wide margin. If there is a silver lining, it is that manufacturing has faded to 13% of Ontario GDP from more than 20% in 2000, so the impact of sweeping changes now would be less than a decade or two ago—but that's only a small consolation.

**New Brunswick's** high headline exposure gets softened when accounting for industry exposure, with more than half of U.S. exports in the lower-risk refined petroleum industry. Similarly, **Alberta's** high U.S. trade share comes as the result of nearly \$50 bln in crude oil exports. If that industry is indeed considered low risk (post-NAFTA tariffs on oil would be a surprise), it leaves Alberta as one of the least exposed provinces in Canada. **Newfoundland & Labrador** would be similarly sheltered, and **Saskatchewan** would not be far behind.



Chart 4-1  
**Provincial Exposure to U.S. Exports**



Saskatchewan boasts large agriculture and potash exports, but much of that output, especially for the latter, is destined for China and India.

**Quebec** looks less vulnerable than Ontario. Indeed, while roughly 76% of the province's U.S. exports are deemed high risk (similar to Ontario), that weighs in at only around 11% of GDP (around half of Ontario), largely because of a more diverse export-market to regions like Europe. That said, Quebec would certainly feel an impact. Aerospace and other non-auto transportation goods account for 15% of total exports (we've already witnessed a tariff spat on this front), while Quebec boasts the largest number of dairy farms in Canada and \$8.5 bln of food-product exports (also largest in Canada)—supply management is another area targeted by the U.S. Administration, but could be unaffected in a full NAFTA breakdown. **Manitoba** looks similar, helped by a diverse export base, but facing risk in large transportation (non-auto) and agriculture/food sectors.

**British Columbia's** overall economic exposure is limited by its increased export ties to Asian markets, but a still-significant 44% of U.S.-bound shipments are in mid- or high-risk industries. This excludes the lumber industry which, given recently-announced softwood tariffs, would see limited impact from NAFTA itself.

The rest of **Atlantic Canada** looks to have relatively low vulnerability overall from an economic perspective. But, certain industries such as food products (significant export share for all in the region) and tires (**Nova Scotia**) could be hurt.

Table 4-1  
**U.S. Export Exposure by Province and Industry (2016)** (\$ mlns)

	Vulnerability Assessment	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
Crops	Mid	645	529	982	541	2,093	660	104	49	61	0
Livestock	Low	580	718	300	415	546	181	304	27	47	20
Oil & Gas Extraction	Low	2,312	49,730	4,689	264	5	1	141	73	—	2,987
Mining	Low	107	141	2,489	62	4,219	513	69	54	4	9
Utilities	Low	510	6	6	387	583	1,266	117	3	—	37
Food Products	High	1,359	2,616	2,281	1,596	8,538	4,672	1,148	617	447	473
Beverages & Tobacco	High	33	55	23	0	728	287	9	0	0	6
Textiles, Clothing & Leather	High	119	10	2	38	2,300	914	4	92	2	—
Paper	Low	944	909	2	147	3,351	4,808	745	184	26	77
Printing	Low	55	7	0	59	580	187	2	1	0	1
Petroleum & Coal Products	Low	560	1,983	229	79	1,838	1,212	5,584	3	0	1,255
Chemical Products	High	717	6,679	792	1,105	16,099	4,396	58	52	55	0
Plastic & Rubber Products	High	399	217	25	408	7,839	2,823	65	1,338	1	0
Non-Metallic Mineral Products	Mid	243	151	3	15	1,729	560	73	4	0	0
Primary Metal Products	Mid	1,752	258	140	203	10,278	10,260	158	20	0	7
Fabricated Metal Products	Mid	453	323	23	169	5,334	1,749	54	71	10	0
Machinery	High	1,373	1,079	261	816	14,164	4,049	106	84	75	2
Computers & Electronics	High	574	303	108	117	8,311	2,058	18	72	5	4
Electrical Equipment & Appliances	High	450	135	17	150	3,973	1,157	17	42	3	2
Transportation Equipment	High	507	401	79	1,625	79,116	8,574	39	88	73	4
Furniture	Mid	182	139	7	172	4,096	1,093	25	3	0	0
Other industries	(unrated)	7,243	1,672	424	808	30,824	5,618	901	775	116	86
<b>Total U.S. Exports</b>		<b>21,194</b>	<b>68,064</b>	<b>12,886</b>	<b>9,178</b>	<b>206,586</b>	<b>57,050</b>	<b>9,751</b>	<b>3,654</b>	<b>925</b>	<b>4,971</b>
	Canada	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
Mid-and High-Risk Exports	250,005	9,386	13,614	5,044	7,371	165,143	43,434	2,182	2,560	780	519
% of U.S. Exports	63.4	44.3	20.0	39.1	80.3	79.9	76.1	22.4	70.1	84.3	10.4
% of GDP	12.3	3.6	4.4	6.6	11.0	20.7	11.1	6.5	6.2	12.3	1.7

Shaded cells are mid- or high-risk industries where U.S. exports account for more than 1% of provincial GDP. Vulnerability assessment considers U.S. exports as a share of sales, WTO tariff rates, financial conditions and other quantitative/qualitative factors. Sources: BMO Economics, Government of Canada



## U.S. Macroeconomy

For our analysis of the impact of a NAFTA repeal and a reversion to WTO tariff rules on the U.S. economy, we assume a 0.8 import price elasticity, an effective trade-weighted tariff of 2.5% on U.S. exports to Canada and 1.7% on U.S. imports from Canada, and an effective tariff of 5% on U.S. exports to Mexico and 2.5% on U.S. imports from Mexico.

With Canada and Mexico accounting for a combined 26% of U.S. goods and services exports, or 3.1% of U.S. GDP, the direct impact of the tariff on exports is modest at just over 0.1% of GDP. However, given some likely strengthening in the U.S. dollar (versus the C\$ and the peso), the adverse impact on exports could be somewhat larger. Imports from Canada and Mexico account for an equally modest share of U.S. imports (24%) and GDP (3.4%). Therefore, the reduction in imports from the two countries stemming from the tariff amounts to less than 0.1% of GDP. In fact, it could be zero assuming a stronger greenback and sourcing of products from other countries. Thus, the U.S. trade deficit would likely widen modestly as exports weaken while imports hold relatively steady. Still, the net drag from trade is unlikely to amount to much more than 0.1% of GDP.

American spending power would be little affected by the tariffs. The tariff on imports from Canada and Mexico would lift prices by less than 0.1%, having a negligible effect on the purchasing power of households and businesses.

The more material impact on the U.S. economy would emerge from potentially **lower productivity** due to disruptions to supply chains, the need to transform business processes, and a likely shift of resources into tariff-protected (but less productive) industries. Though difficult to quantify, the reduction in productivity could have a material impact when accumulated over long periods of time.

The **main message is that the U.S. economy would slow modestly without NAFTA, likely by around 0.2%**. This is not what the President had in mind by potentially ending the “*worst trade deal ever*”. U.S. business competitiveness would take a hit, possibly worsening its trade deficit with Asia and Europe. Employment losses (assuming half the hit is absorbed through lower productivity) would be around 0.1% of payrolls, lifting the jobless rate slightly.

For the Fed, the uncertainty for businesses would likely encourage an even more cautious approach to normalizing policy, likely precluding at least one of the three rate hikes we have penciled in for 2018.



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## U.S. Industry

As the largest economy in the world, the U.S. is better positioned to weather a termination of NAFTA than Canada and Mexico (*Table 6-1*). Indeed, this appears to be the driving factor behind the Administration’s hardline bargaining approach. Of all U.S. industries, none rely on Canada and Mexico for more than 16% of sales, whereas exports to the U.S. exceed 70% of sales across a variety of sectors in Canada and Mexico. While it is often stated that Canada is the “best customer” of the U.S., the reality is that Canada accounts for a modest share of sales in most U.S. industries.

Despite its size, the U.S. remains subject to the tenets of comparative advantage and would be worse off without a free trade bloc in North America. We’ve long argued that NAFTA has resulted in the creation of cross-border production networks in many industries, and these networks face fierce competition from rival networks in Europe and Asia. U.S. industries that are tightly integrated with Canada and Mexico, and leverage the cost savings associated with cross-border specialization, would be hard-pressed to compete on their own against integrated overseas networks. Furthermore, there is little evidence that U.S. consumers would be willing to pay more for domestically-produced products than for those produced abroad, nor are they likely to accept technically inferior products in the name of economic nationalism (the auto sector being a prime example). Even if the U.S. were to achieve its goal of narrowing its trade deficit with Mexico, which is far from assured, there is a real possibility that this would be accomplished at the cost of wider trade deficits with Europe and Asia.

### Industries with Significant Vulnerability

The **transportation equipment** industry is judged to be among the most exposed. Although auto exports to Canada and Mexico are small in comparison to the U.S. domestic market, both countries are crucial contributors to the continental manufacturing network. As a result, even modest tariffs on North American trade could raise costs substantially across the production chain—especially given the tendency of parts and assemblies to crisscross the border multiple times during the production process. Indeed, industry estimates suggest that ending NAFTA could increase the price of new cars in the U.S. by at least \$1000 (and the tally would be much higher for Mexican-built pickup trucks with a reversion to a 25% WTO tariff).

Table 6-1

### U.S. Industry Vulnerability to NAFTA Termination — Goods-Producing Industries with Significant or Moderate Vulnerability (2016)

	Exports to Canada & Mexico (% sales)	Avg. Canadian WTO Tariff Rate (%)	Avg. Mexican WTO Tariff Rate (%)	Potential Tariffs to Canada & Mexico (% sales) <sup>1</sup>	Imports from Canada & Mexico (% ADM) <sup>2</sup>	Avg. U.S. WTO Tariff Rate (%)
<b>Significant Vulnerability</b>						
Textiles, Clothing and Leather	15.7	8.0	12.9	1.6	4.5	7.5
Transportation Equipment	10.3	5.1	9.5	0.7	16.5	2.2
<b>Moderate Vulnerability</b>						
Computers and Electronics	21.7	0.6	2.4	0.4	13.5	1.0
Crops	7.5	3.9	11.0	0.6	9.9	3.8
Electrical Equipment and Appliances	23.6	1.5	1.5	0.4	18.0	1.5

Notes: Vulnerability classification developed by BMO Economics is based on a variety of qualitative and quantitative factors, including those presented here. NAICS-based tariff rates presented here are estimates derived from HS-based tariff schedules. <sup>1</sup> Potential tariffs are defined as industry exports times the industry tariff rate. <sup>2</sup> ADM denotes apparent domestic market, which is defined as industry sales less exports plus imports.

Sources: BMO Economics, World Trade Organization, U.S. Department of Commerce, U.S. Census Bureau, Haver Analytics



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And, while the U.S. administration's hope is that new tariffs would "rebalance" the US\$70 bln trade deficit in autos and parts with Mexico, it is unlikely to narrow the U.S. global trade deficit in this industry. In a post-NAFTA world, foreign manufacturers would likely opt to export from their home markets and pay import tariffs rather than extend greenfield investment in the U.S. without a low-cost supply of parts and components from Mexico.

U.S. manufacturers of **textiles, clothing & leather** would face among the most burdensome trade barriers if North America were to revert to WTO rules, with tariff rates expected to reach nearly 13% for exports to Mexico and 8% for exports to Canada. This would represent a significant headwind for U.S. manufacturers, as the combined Canadian and Mexican markets account for a not-inconsequential 15% of total sales. Although similarly punitive U.S. tariffs in the 8% range would likely prompt some import substitution, the U.S.'s US\$3.7 bln trade surplus with Canada (and \$2.7 bln surplus against Canada and Mexico combined), suggests that a greater share of the domestic market would be insufficient to offset the industry's lost competitiveness in Canada.

## Industries with Moderate Vulnerability

Two U.S. manufacturing industries and the crop sector are judged to have moderate sensitivity.

Of all U.S. industries, **computer & electronics** producers and **appliance & equipment** manufacturers rely most heavily on NAFTA members for sales, with combined exports to Canada and Mexico accounting for over 20% of receipts. And, while WTO-level tariffs would not be especially high, at less than 2% for the Canadian and Mexican markets, the resulting tariff bill could prove material in these low-margin industries. Mexico is also the U.S.'s second-largest supplier in the electronics and appliance space, accounting for 25% of total imports. While this partly represents some re-shoring of overseas production into the NAFTA zone (for example, TVs being produced in Mexico instead of Korea or China), it also demonstrates Mexico's role as a key supplier of components for higher value-added computer and electronics production in the U.S.

U.S. **crop producers** would also be materially affected, as they would face tariffs averaging nearly 4% on exports to Canada and a lofty 11% on exports to Mexico. Although the industry is not especially reliant on NAFTA members for sales, with Canada and Mexico accounting for around 7% of industry receipts, dramatic climate differences across North America mean that import substitution is likely to be relatively limited. Sizeable tariffs in the downstream food industry could also pressure crop producers indirectly by leading large processors to pressure agricultural suppliers for lower prices. However, on the positive side of the ledger, the prevalence of agricultural trade barriers around the world would curb overseas substitution even if tariffs were to rise within North America.

## Industries with Low Vulnerability

U.S. **financial institutions** would face similar, if more moderate, challenges to those in Canada. Remaining U.S. industries are judged to have limited vulnerability to NAFTA termination. Generally, these industries have not integrated their production processes across the Canadian and Mexican borders, and have little reliance on sales to other NAFTA members.

## U.S. Regional

The U.S. regional impact of a NAFTA termination would be spread across many states, but those near the borders, and with high exposure to industries with tightly-integrated supply chains, would face the biggest fallout. First, it's noteworthy that **the vast majority of U.S. states count Canada or Mexico as their top export market** for goods. Indeed, Canada is the top destination for exports from 32 states, including nearly the entire Midwest and Northeast regions. An additional 6 states (including the Border States from California to Texas) rely on Mexico as their top market (*Chart 7-1*).

That said, **the overall impact in even the most exposed states, in terms of exports to the NAFTA partners, remains much smaller than for the Canadian provinces**, given Canada's status as the much smaller and more open economy. In fact, the province least exposed to NAFTA (British Columbia) carries an export share of GDP that is still larger than the most exposed U.S. state (Michigan).

Some states would certainly feel a significant impact from a trade disruption. **Michigan** looks the most at risk (*Table 7-1*) thanks to a tightly-integrated auto-sector supply chain. Exports to Canada and Mexico accounted for 7.3% of GDP in 2016, the highest in America (*Table 7-2*). Focusing on the most vulnerable industries only, as discussed in the sector analysis, Michigan remains the most exposed with exports of these goods accounting for nearly 5% of GDP. Elsewhere, auto-sector exposure plays a key role in driving state exposure, with **Alabama, Indiana, Kentucky and Ohio** all seeing vulnerable exports account for more than 1% of GDP.

**North Dakota** relies on Canada and Mexico for a hefty 84% of exports (largest share in America), but oil accounts for the bulk of shipments, an industry we deem low risk, and thus the state looks relatively sheltered in our analysis. Other states in the **Midwest** and **Northeast** regions have more diverse manufacturing bases than Michigan, which spreads out the trade risk. But, most still carry export shares well above the 50-state median.

Within the BMO footprint, **Illinois** and **Wisconsin** both have relatively high export shares to Canada and Mexico (more than 40% of total exports for each state), while the share of exports to these countries that are in sectors deemed vulnerable is above the state median. **Indiana's** exposure to the auto sector leaves it arguably the most vulnerable within the BMO footprint, while **Minnesota's** diverse economy appears to be in the middle of the state pack. **Arizona's** relatively high exposure comes on the back of computer products and electronics, a burgeoning industry in the state. Finally, while not as severe as states tied more significantly into the auto sector, **Missouri** and **Kansas** would face a significant challenge given elevated export levels in agriculture, as well as significant factory activity in transportation equipment.



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Table 7-1  
**Ten Most Vulnerable States**

	Vulnerable Exports <sup>1</sup> (% of GDP)
Michigan	4.7
Texas	3.3
Kentucky	3.1
Vermont	2.7
Indiana	2.5
Tennessee	2.3
Alabama	1.9
Ohio	1.8
Arizona	1.6
Mississippi	1.5

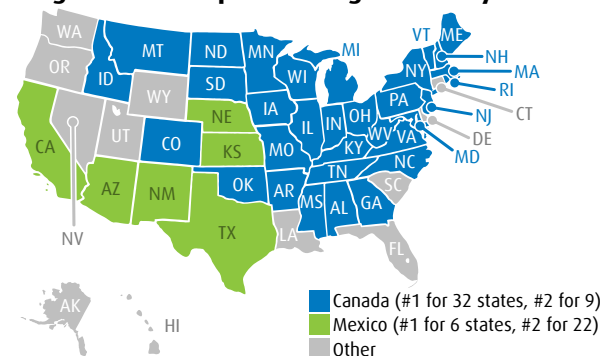
<sup>1</sup> See Table 7-2 for full details

Source: BMO Economics

Chart 7-1  
**Selling Mostly to Canada and Mexico**

United States — 2016

**Largest Goods Export Trading Partner by State**



Source: BMO Economics, U.S. Department of Commerce

**Table 7-2**  
**Trade Statistics by State (2016)**

	Goods Exports to Canada and Mexico			Vulnerable Exports <sup>1</sup>	
	(\$ blns)	(% of total)	(% of GDP)	(\$ blns)	(% of GDP)
Alabama	6.7	33	3.3	3.8	1.9
Alaska	0.5	12	1.0	0.0	0.0
Arizona	10.4	47	3.4	5.0	1.6
Arkansas	1.8	32	1.5	0.5	0.4
California	41.4	25	1.6	21.9	0.8
Colorado	2.4	32	0.7	0.4	0.1
Connecticut	2.7	19	1.0	1.0	0.4
Delaware	0.7	15	1.0	0.3	0.4
Florida	6.3	12	0.7	2.7	0.3
Georgia	9.4	26	1.8	4.5	0.9
Hawaii	0.1	6	0.1	0.0	0.0
Idaho	1.2	24	1.7	0.3	0.4
Illinois	25.3	42	3.2	8.2	1.0
Indiana	16.4	47	4.8	8.7	2.5
Iowa	5.7	47	3.2	1.5	0.8
Kansas	3.7	36	2.4	1.8	1.2
Kentucky	9.7	33	4.9	6.0	3.1
Louisiana	8.4	17	3.6	1.4	0.6
Maine	1.4	49	2.4	0.2	0.3
Maryland	1.9	20	0.5	0.3	0.1
Massachusetts	5.5	21	1.1	2.8	0.6
Michigan	35.5	65	7.3	23.1	4.7
Minnesota	6.4	33	1.9	2.4	0.7
Mississippi	3.2	31	3.0	1.6	1.5
Missouri	7.8	56	2.6	4.3	1.4
Montana	0.7	48	1.4	0.2	0.4
Nebraska	2.7	42	2.3	0.9	0.7
Nevada	1.9	19	1.3	0.7	0.5
New Hampshire	1.0	24	1.3	0.5	0.6
New Jersey	8.9	29	1.5	1.7	0.3
New Mexico	1.7	47	1.8	1.1	1.2
New York	15.6	21	1.0	3.0	0.2
North Carolina	9.3	31	1.8	3.6	0.7
North Dakota	3.5	84	6.7	0.4	0.7
Ohio	25.5	52	4.1	11.4	1.8
Oklahoma	1.9	39	1.1	0.6	0.3
Oregon	2.5	11	1.1	0.7	0.3
Pennsylvania	13.6	37	1.9	3.8	0.5
Rhode Island	0.7	32	1.3	0.2	0.3
South Carolina	5.6	18	2.7	2.5	1.2
South Dakota	0.8	62	1.6	0.1	0.2
Tennessee	13.2	42	4.0	7.4	2.3
Texas	112.5	48	7.0	53.9	3.3
Utah	2.1	17	1.3	0.7	0.5
Vermont	1.3	44	4.2	0.8	2.7
Virginia	4.0	24	0.8	1.4	0.3
Washington	8.9	11	1.9	3.4	0.7
West Virginia	1.7	34	2.3	0.4	0.5
Wisconsin	9.6	46	3.1	2.5	0.8
Wyoming	0.2	20	0.6	0.0	0.0
State Median	3.8	32	1.8	1.5	0.6

Shaded cells represent states with vulnerable exports greater than 1%.

<sup>1</sup> Vulnerable exports include textiles, clothing & leather; transportation equipment; computers & electronics; agriculture; electrical equipment & appliances.

Sources: BMO Economics, U.S. Census Bureau, Haver Analytics

## Appendix A: Calculating Effective Trade-Weighted WTO Tariffs on Canadian Trade

Table A-1

### Canadian Exports to the U.S. (2016)

	Goods Exports to U.S. (C\$ mlns : n.s.a.)	% of Total Exports (unadjusted) (scaled to 100%)		Avg. U.S. WTO Tariff Rate (%) <sup>1</sup>	Weighted Tariff (%)
<b>Significant Vulnerability</b>					
Beverages and Tobacco	1,142	0.291	0.324	19.4	0.063
Chemical Products	29,955	7.636	8.511	1.6	0.136
Computers and Electronics	11,570	2.949	3.287	1.0	0.033
Electrical Equipment and Appliances	5,944	1.515	1.689	1.5	0.025
Food Products	23,749	6.054	6.748	4.5	0.304
Machinery	21,967	5.600	6.242	1.3	0.081
Plastics and Rubber Products	13,114	3.343	3.726	3.7	0.138
Textiles, Clothing and Leather	3,488	0.889	0.991	7.5	0.074
Transportation Equipment	90,506	23.072	25.716	2.2	0.566
<b>Moderate Vulnerability</b>					
Crops	5,664	1.444	1.609	3.8	0.061
Fabricated Metal Products	8,194	2.089	2.328	2.3	0.054
Furniture	5,718	1.458	1.625	1.6	0.026
Non-Metallic Mineral Products	2,778	0.708	0.789	1.9	0.015
Primary Metal Products	23,078	5.883	6.557	1.4	0.092
<b>Low Vulnerability</b>					
Livestock	3,138	0.800	0.892	0.8	0.007
Mining	7,880	2.009	2.239	0.0	0.000
Oil and Gas Extraction	60,199	15.346	17.104	0.0	0.000
Paper	11,193	2.853	3.180	0.0	0.000
Petroleum and Coal Products	12,735	3.246	3.618	0.0	0.000
Printing	892	0.227	0.254	0.0	0.000
Utilities	2,916	0.743	0.828	0.0	0.000
Misc. Manufactured Products	6,129	1.563	1.742	4.3	0.067
<b>Total</b>					<b>1.742</b>

Table A-2

### Canadian Imports from the U.S. (2016)

	Goods Imports from U.S. (C\$ mlns : n.s.a.)	% of Total Imports (unadjusted) (scaled to 100%)		Avg. Cdn. WTO Tariff Rate (%) <sup>1</sup>	Weighted Tariff (%)
<b>Significant Vulnerability</b>					
Beverages and Tobacco	1,944	0.540	0.752	1.7	0.013
Chemical Products	32,932	9.150	12.737	1.5	0.191
Computers and Electronics	11,629	3.231	4.497	0.6	0.027
Electrical Equipment and Appliances	8,385	2.330	3.243	1.5	0.049
Food Products	17,531	4.871	6.780	3.0	0.203
Machinery	25,484	7.081	9.856	0.4	0.039
Plastics and Rubber Products	10,820	3.006	4.184	1.1	0.046
Textiles, Clothing and Leather	260	0.072	0.100	8.0	0.008
Transportation Equipment	77,448	21.519	29.953	5.1	1.528
<b>Moderate Vulnerability</b>					
Crops	5,573	1.548	2.155	3.9	0.084
Fabricated Metal Products	10,745	2.985	4.156	1.4	0.058
Furniture	2,548	0.708	0.986	5.0	0.049
Non-Metallic Mineral Products	3,460	0.961	1.338	1.1	0.015
Primary Metal Products	10,973	3.049	4.244	0.6	0.025
<b>Low Vulnerability</b>					
Livestock	612	0.170	0.237	0.5	0.001
Mining	3,765	1.046	1.456	0.0	0.000
Oil and Gas Extraction	9,552	2.654	3.694	0.0	0.000
Paper	6,114	1.699	2.365	0.0	0.000
Petroleum and Coal Products	11,475	3.188	4.438	0.7	0.031
Printing	966	0.268	0.374	0.0	0.000
Utilities	265	0.074	0.102	0.0	0.000
Misc. Manufactured Products	6,088	1.691	2.354	5.9	0.138
<b>Total</b>					<b>2.506</b>

<sup>1</sup> Simple average of the tariff of several products within industry.

Sources: BMO Economics, Industry Canada, U.S. International Trade Association, WTO, Haver Analytics