American Chemistry Council

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WITHDRAWAL FROM NAFTA WOULD ERODE U.S. MANUFACTURING COMPETITIVENESS

EXECUTIVE SUMMARY

By modernizing the North American Free Trade Agreement (NAFTA), President Trump can help the U.S. capitalize on the chemical industry's strong competitive advantage created by domestic shale gas; boost U.S. chemical exports to Canada and Mexico by 34 percent by 2025; and support the chemical industry's positive contribution to the U.S. trade balance. A U.S. withdrawal from the trade pact would have virtually the opposite effect, creating a tariff burden of up to $9 billion on U.S. chemical exports to Canada and Mexico, translating into higher prices for manufacturers and consumers and likely forcing the industry's two largest trading partners to turn to lower-cost imports from China to satisfy their demand for chemicals and plastics.

NAFTA has fostered regional integration across North American businesses which increases efficiencies and productivity. Companies can take advantage of vertical specialization and economies of scale in production, without the restriction of border tariffs. In particular, NAFTA has been instrumental to the growth and job creation of the U.S. chemical sector. U.S. chemical exports to Canada and Mexico will have grown from **$13 billion** in 1994 to **$44 billion** in 2018. They are projected to reach $**59 billion** by 2025. Importantly, **46,000** chemical industry jobs now depend on chemicals trade with Canada and Mexico.

In 2016, the chemical industry saved approximately **$700 million** in tariff relief on exports to Canada and Mexico, and **$800 million** in tariff relief on imports. The cost savings have helped drive economic growth throughout the manufacturing supply chain and lowered prices for manufacturers and consumers.

In addition, American shale gas has created a competitive advantage for U.S. chemical manufacturers. The low-cost feedstocks, together with tariff relief provided by NAFTA, have helped position the U.S. as a leading global supplier of chemicals. For example, exports of chemicals and plastics derived from shale will reach **$30 billion** by 2025, **$13 billion** of which will be destined for Canada and Mexico.

Abandoning NAFTA or making changes that undermine the certainty of NAFTA would raise prices, destroy demand for U.S. exports and cause job losses. Specifically, the introduction of tariffs into the North American supply chain would increase production costs and disrupt regional integration, causing U.S. goods and exports to become more expensive and U.S. firms to lose their competitive advantage. In a worst-case scenario, Canada and Mexico could impose extremely high, retaliatory tariff rates, causing the costs to trade within North America to rise substantially. Without NAFTA, U.S. chemicals exports to NAFTA partners could drop by as much as **$22 billion**, or 45 percent of the current export total, creating a total lost chemistry demand of **$29 billion** when contractions in end-use industries such as automotive, electronics, and appliances are combined with direct losses to chemistry exports.

Manufacturers in the U.S. have sustained a competitive position in the global marketplace by extending their supply chains regionally. Without NAFTA, tariffs would be levied on manufacturing components, some of which may cross the border as many as seven or eight times before a final product is complete. Trade and tariff costs would accumulate.

Increasing the costs to do business in the U.S. will invite lower-cost competitors to enter, or increase their presence in, the U.S. market. China is poised to take advantage of this opportunity, since higher-cost U.S. goods would make lower-cost Chinese goods more attractive to customers in the U.S. and around the world. With Chinese goods more competitively priced, the U.S. trade deficit with China would deepen due to an acceleration in U.S. imports and a drop in U.S. exports to the country.

FULL REPORT

North American Manufacturing Competitiveness

Since NAFTA entered into force in 1994, the economies of North American countries have become increasingly integrated as efficient supply chains developed across the region. **The Agreement has helped minimize production costs in the U.S., enabling regional economies of scale that make efficient production possible.** As a result, manufacturers in the U.S. have been able to maintain a competitive position in the global marketplace.

Anchored in the U.S., North America has become one of the world's major manufacturing hubs, along with Europe and China. While the North American hub is driven by the U.S. economy, Canadian and Mexican economies contribute essential complements—raw materials, components and labor—to the strong manufacturing base in the U.S.

The vast amount of intra-regional trade is a reflection of long supply chains and the specialization that occurs at each stage of production, and the locations that are most advantaged with the resources required at each stage. Goods manufactured in the U.S. are often created in stages with value added along the way. Cross-border trade is part of regional production-sharing, thus many U.S. imports are embedded with U.S. value added. Traditional measures of trade like total exports, total imports, or the trade deficit (or surplus), do not sufficiently reflect the extent to which Canadian and Mexican imports are used as inputs to U.S. manufacturing, or how imports often include U.S. value-added.

The U.S. automotive industry is one of many industries whose competitive position benefits from cross-border trade and production-sharing (also referred to as "vertical specialization"). Automobile parts and components may cross the U.S. border multiple times during the production of a car. According to the Woodrow Wilson International Center for Scholars, cars produced in North America "cross the United States' borders eight times during production, integrating materials and parts developed in Mexico and Canada."

Vertical specialization among North American partners allows for the manufacture of goods that are higher quality and more competitively priced in both domestic and global markets. Minimizing the tariff (and non-tariff) barriers to trade helps North American producers create goods together, which keeps U.S. manufacturing competitive.

Manufacturers in Europe and China employ similar vertical specialization strategies in order to minimize costs and make production more efficient. However, China's low labor costs, and access to even lower wage labor in neighboring countries, have proved a comparative advantage in manufacturing. Furthermore, Chinese producers are investing in extending the China-centered production supply chains to exploit the comparative advantages that their neighbors provide. **Today, China has already surpassed the U.S. as the world's largest manufacturer.**

A significant portion of goods produced in the U.S. are a product of the North American supply chain, which incorporates raw materials and components from Mexico and Canada. U.S. export competitiveness depends on that regional base and economies of scale that are vital to competing with China's very low cost. Withdrawing from NAFTA would reduce the competitiveness of U.S. businesses, as both domestic and foreign firms would be incentivized to find substitutes to U.S. and North American produced goods. Chinese producers are already well-positioned as top trade partners with North American firms and consumers and could readily step in as "the next best" or "alternative" suppliers if North American supply chains and trade become more expensive.

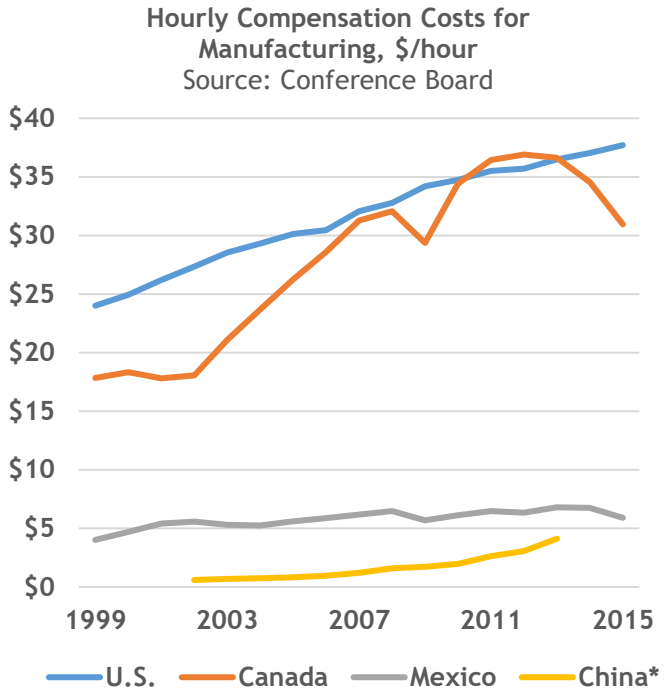
Productivity, Production, and Labor Costs

Labor costs are a major component of total production costs. In manufacturing, labor costs are significantly impacted by the labor intensity level and the worker skill level required at each stage of production. Some stages of production are more labor-intensive than others. Thus, production costs can be minimized by locating labor-intensive stages of production in lower labor-cost locales.

In addition to intensity, labor costs reflect the worker skill level (low, middle, high) required. **In the U.S., there is a relatively abundant supply of higher skilled labor whereas** the supply of less skilled labor is more plentiful in countries such as Mexico and China. **Thus, the U.S. has a comparative advantage in higher skilled labor but is disadvantaged regarding less skilled labor.**

Wages and productivity are positively correlated with skill level. A comparison of hourly compensation rates for manufacturing workers across North America shows how wages in Mexico, where there is plentiful lower skilled labor, are significantly lower than they are in the U.S. As such, firms in Mexico can produce labor-

intensive products with lower costs. When the cost to import inputs is lower than the cost to produce inputs, firms in the U.S. can reduce overall costs and compete in the domestic and global marketplace by importing inputs.



Like Mexico, China is endowed with low-cost labor. Unlike imports from China, however, a significant portion of the value in U.S. imports from Mexico is derived from output that originated in the U.S. According to research by Boston Consulting Group, Mexican products contain "four times as many U.S.-made parts, on average, as those made in China." **Due to cross-border supply chains between the U.S. and Mexico, the two countries are not just selling goods to each other, but jointly producing them.** The economic benefits are observed regionally.

Some firms have entirely moved certain stages of production to places such as Mexico, in order to take advantage of lower-cost labor (known as "offshoring"). When U.S. businesses offshore tasks to Mexico, it creates economic benefits and jobs in both Mexico and the United States.

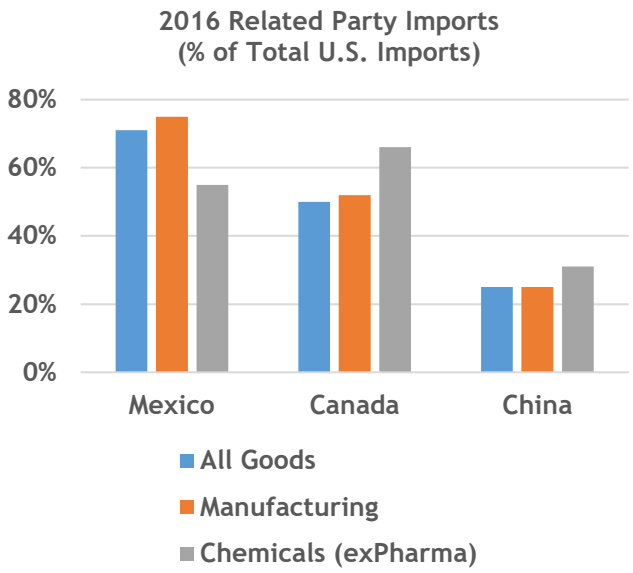
These practices enable those U.S. companies to have the lowest production cost structure possible, which keeps firms in business and protects American jobs. Contrary to the myth that offshoring destroys domestic employment, "increased offshoring by U.S. manufacturing multinational corporations (MNCs)—a phenomenon criticized as contributing to domestic job losses—is actually associated with overall greater investment and increases in jobs at home," according to a report by Peterson Institute for International Economics. U.S. MNCs "use their foreign activities to complement, and not just substitute for, their employment, sales, investment, and exports in the United States, with the net result not a loss but an increase in jobs and investment at home that can be directly linked to investment abroad." The U.S. manufacturing sector has become increasingly specialized in the higher-value-added stages of production and less so on the labor-intensive stages and the strategic outward investment of U.S. MNCs have enabled that transition.

While U.S. manufacturing has become more focused on the higher-value-added stages of production, the manufacturing share of employment in the U.S. has declined steadily for decades. Employment in the services sector began to take off in the 1960s and has expanded ever since. Manufacturing employment peaked in the late 1970s and has been in secular decline. But, as the manufacturing share of the U.S. workforce has declined, **U.S. manufacturing output has grown strongly and the value of goods and products made in the U.S. continues to rise.**

Automation, technological advances, globalization, and the offshoring of lower-wage, lower-skill jobs have enabled the U.S. manufacturing industry to remain competitive by continuing to increase efficiency and productivity. The long term trends in labor productivity have been positive. According to the U.S. Bureau of Labor Statistics (BLS), over the entire 1987-2016 period, labor productivity rose in 85 of the 90 manufacturing and mining industries measured. An increase in labor productivity means that manufacturers can produce more value with fewer labor inputs.

Manufacturing Sector's Top Trade Partners: China, Canada and Mexico

Intra-company or related-party[i] trade between the U.S. and Canada, and the U.S. and Mexico, comprises a significant portion of intra-regional trade. Half of U.S. imports from Canada are from related parties and 40 percent of U.S. exports to Canada are to related parties. Seventy-one percent of imports from Mexico are from related parties and 42 percent of U.S. goods exports to Mexico are to related parties. **Strong trade ties between the U.S. and its NAFTA partners reflect the**



U.S.-based manufacturing supply chains that cross the Canadian and Mexican borders.

Regardless of their origination, **almost all U.S. imports are inputs to domestic business.** This is clear for imported intermediate and capital goods, but also for consumer goods, which generate significant economic activity due to wholesale and retail services. Minimizing the costs to trade with the U.S. by reducing or eliminating tariffs and other barriers increases the profitability of firms established in the U.S., since they can purchase input materials and finished products at competitive prices.

Despite the strength of the economic relationships supported by NAFTA, the U.S. reliance on inputs from China has gradually increased. China has been a top source of imported inputs to the U.S. for the past 10 years.[ii] **The U.S. imports more goods from China than it does from Mexico or Canada.** Twenty-one percent of all U.S. imports come from China. That is more than the 13 percent from partners in Canada, and the 13 percent from Mexico.

The U.S. imported $462 billion in goods from China in 2016, far more than any other foreign partners. **U.S. trade ties with China are strong.** Twenty-five percent of inputs imported from China are from related parties (equal to approximately $115 billion); 41 percent of computers and electronic products are from related parties; and **30 percent of chemicals** are from related parties. Twenty-four percent of U.S. goods exported to China are to related parties (approximately $25 billion); 43-51 percent of textiles and textile mill products are to related parties; **41 percent of chemicals**, 44 percent of nonmetallic mineral products, 42 percent of computers and electronic products, and half of miscellaneous manufactured goods are exported to related trade partners in China.

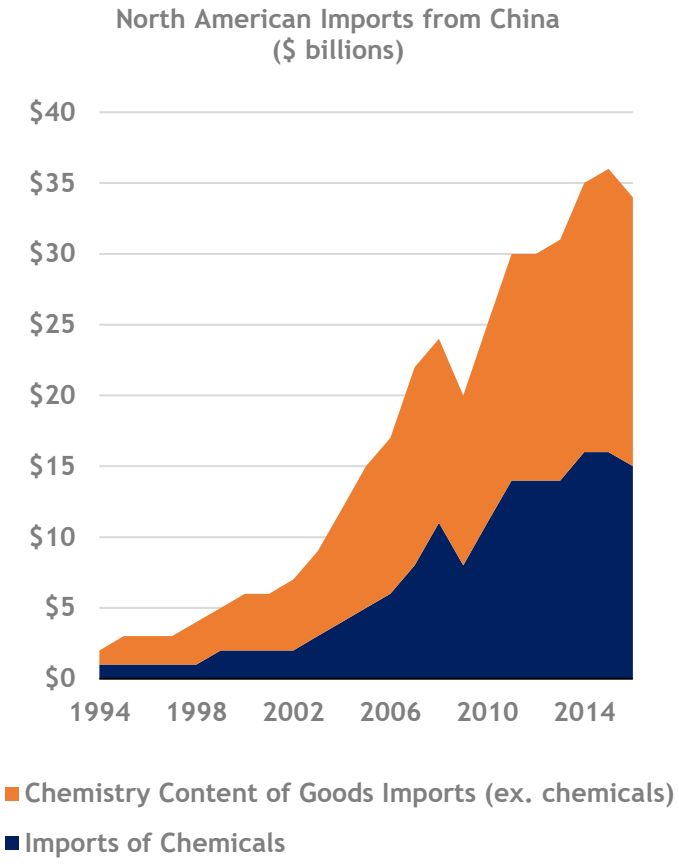
Since 1994, China has become a major supplier of chemicals to the North American region. Chemical imports from China to North America have grown nearly 15 percent per year since 1994. As a result, in 2016, China was the #2 source of chemical imports in Canada, Mexico, and the United States. The NAFTA region imported nearly $15 billion in chemical products in 2016.

China's Rank as Source of Chemical Imports

	Canada	Mexico	United States
1994	8	12	8
2000	7	9	7
2005	5	7	5
2010	2	2	2
2016	2	2	2

In addition to chemicals, the NAFTA region also imports a substantial amount of chemistry that is contained in other imported goods from China. Examples of these types of goods include appliances, apparel, toys, electronics, etc. In 2016, the NAFTA region imported the equivalent of $19 billion in chemistry content in the form of non-chemical goods imports. In

total, the NAFTA region imported more than $34 billion in chemistry from China in 2016.



Trade Without NAFTA

Withdrawing from NAFTA would disrupt the cooperative supply chain and business integration that has taken decades to develop in North America. This would diminish any gains to U.S.-based manufacturers from economies of scale, specialization, and other efficiencies that result from extending the supply chains to take advantage of each nation's competitive advantages at various stages of production.

NAFTA protects North American partners from extreme tariff uncertainty as they do business together. If NAFTA is terminated, the U.S., Mexico and Canada, as members of the World Trade Organization (WTO), would be obligated to charge Most Favoured Nation (MFN) tariffs on the goods that they import from each other. The tariffs would increase production costs substantially. As a baseline, tariffs would rise to the average MFN rates; the average MFN rate on all U.S. goods imports is 3.5 percent, while the rate for Mexican imports is 7.0 percent and the rate on Canadian imports is 4.1 percent. While the U.S., Canada and Mexico would be obligated to levy MFN tariffs on the goods that they import from each other, they would be permitted to escalate tariffs to final bound rates (the maximum tariff rates that a WTO member can impose). The average final bound rate is 3.4 percent on U.S. imports, 6.5 percent on Canadian imports and 36.2 percent on Mexican imports.

In addition to causing significant disruptions to North American business and supply chains, the direct costs of tariffs would accumulate across product chains. During production, components and inputs may cross the border as many as 7 to 8 times before a product is finished. Without NAFTA, a tariff would be levied at each crossing. The total accumulated tariff burden could be immense, particularly in some sectors.

The potential tariff burden on North American manufacturers is significant. For example, in 2016 U.S. consumers and businesses imported $572 billion in goods from NAFTA partners. Without NAFTA, assuming North American countries imposed the minimum tariffs ("base case"), U.S. consumers and businesses could have faced $20 billion in tariff burden on these imports, more than half of which were intermediate goods essential to U.S. production. In the chemical industry, where the average U.S. MFN tariff rates on imports is 2.8 percent, that tariff burden could have totaled $800 million. U.S. exports would be impacted as well. Based on 2016 exports, the tariff burden on U.S. exports to Canada and Mexico together would have been $27 billion across all goods categories and $700 million in tariffs on U.S. chemicals exports. However, if tariff rates escalated to final bound level, the tariff burden could have been as high as $100 billion on all goods including $9 billion on the chemicals sector alone.

Terminating NAFTA would introduce a tariff burden on total U.S. trade with North American partners of $47 billion to $119 billion, depending on how high tariff rates escalate. The potential burden on total North American chemicals trade could total $1.5 billion to $10 billion.

MFN and Final Bound Tariff Rates (percent ad valorem)

	All Products		Ag		Non-Ag		Chemicals[iii]	
	MFN	Final Bound	MFN	Final Bound	MFN	Final Bound	MFN	Final Bound
United States	3.5	3.4	4.2	4.8	3.2	3.2	2.8	2.8
Canada	4.1	6.5	15.6	15.4	2.2	5.2	0.8	4.4
Mexico	7.0	36.2	14.6	45.0	5.7	34.8	2.3	35.2

Source: WTO, 2017 Tariff Profiles

Potential Tariff Burden without NAFTA
Based on 2016 Import Levels, ($ Billions)

		All Products			Ag			Non-Ag			Chemicals		
			Potential Tariff Burden			Potential Tariff Burden			Potential Tariff Burden			Potential Tariff Burden	
Importer	Exporter	2016 Imports	MFN	Final Bound	2016 Imports	MFN	Final Bound	2016 Imports	MFN	Final Bound	2016 Imports	MFN	Final Bound
U.S.	Canada	278	10	9	4	0.2	0.2	274	9	9	23	0.6	0.6
U.S.	Mexico	294	10	10	12	0.5	0.6	282	9	9	5	0.1	0.1
U.S.	**CA + MX**	**572**	**20**	**19**	**16**	**0.7**	**0.7**	**556**	**18**	**18**	**28**	**0.8**	**0.8**
Canada	U.S.	267	11	17	7	1.1	1.1	260	6	13	27	0.2	1.2
Mexico	U.S.	230	16	83	7	1.0	3.2	223	13	77	22	0.5	7.6
CA + MX	**U.S.**	**496**	**27**	**100**	**14**	**2.2**	**4.3**	**482**	**18**	**91**	**49**	**0.7**	**8.8**

Source: U.S. International Trade Commission; WTO, 2017 Tariff Profiles; American Chemistry Council

Shifting Trade Patterns

U.S. goods trade with Canada and Mexico would contract if tariffs are re-introduced into North American trade. The price of imported inputs would rise, leading to a fall in quantity demanded. While the quantity demanded would decline, the actual underlying demand for inputs would not be impacted. Therefore, firms would be forced to seek the next best source of the input— whether foreign or domestic—in order to continue operations.

It is estimated that U.S. imports from Canada and Mexico could contract by as much as $50 billion (or the equivalent of 9 percent of the current level) of imports if MFN tariffs are introduced. U.S. imports of chemicals could contract by as much as $1.9 billion (7 percent of the current level). U.S. exports would also contract; U.S. total goods exports to Mexico and Canada could decline by as much $68 billion, the equivalent of 14 percent of the current level of U.S. exports to North American partners.

MFN tariffs may be the "base case" if NAFTA is terminated, but another scenario ("worst case") is entirely possible: Mexico and Canada could enact retaliatory tariffs that are higher than the MFN rates. Mexico, in particular, has considerable leverage in terms of binding overhang. The use of U.S.-made inputs for Mexican production would become much more costly, as the average final bound tariff rate on Mexico's imports is 36.2 percent. If these final bound tariff rates are levied, the decline in U.S. exports to Canada and Mexico would grow to as much as $251 billion – the equivalent of 51 percent of current export levels. The decline in annual U.S. chemical exports to Mexico and Canada could grow to as much as $22 billion (or the equivalent of 45 percent of current exports).

Ultimately, higher trade costs will lead to a shift in trade patterns. Producers would need time to develop new supply chains and acquire substitutes. In order to estimate the potential contraction in trade, it is assumed that the initial reaction to a rise in the price of imported goods would be just below unity and that it would shift to a much more elastic response in the longer term. This reflects the progression towards increasingly elastic demand as more substitutes become available. North American partners are economically interdependent and involved in sophisticated cross-border supply chains. Thus, initially, they could have a hard time shifting away from the business relationships and investment that has already been developed. Additionally, the savings in transportation and other costs due to the geographic proximity make substitutes from more distant suppliers relatively less competitive. But, in the longer term, trade will be diverted. Patterns will change and supply chains will be disrupted as importers seek substitutes closer to the global price. Substitutes may be found domestically or may be acquired by foreign trade.

Because firms in the U.S., Mexico and Canada make things together, the loss in demand would be experienced broadly. In the chemical industry, for example, the added cost of tariffs would directly translate to lost chemistry demand in the form of lower exports of chemistry-containing goods. Chemicals are used to add value to nearly all manufactured goods. The negative impact of tariffs would be observed broadly across many customer markets such as automotive and auto parts, electronics, and appliances. U.S. chemical manufacturers would face reduced demand for their products because end-use industries would also contract due to tariff burden. As a result, total lost chemicals demand would be between $1-4 billion in the base case (MFN) scenario and $10-29 billion in the worst case scenario. See Appendix for more details.

As a result of increased costs to use U.S. manufactured goods, Canadian and Mexican producers will seek out suppliers in other countries and they will have many options. Mexico, for example, is involved in many free trade agreements (11 free-trade agreements involving 46 countries). Currently, the U.S. is Mexico's top trade partner, but as the country continues with trade liberalization efforts, access to additional foreign markets is increasing, therefore decreasing Mexico's dependence on the U.S. This will make Mexican firms more flexible to react and shift sourcing away from the U.S. A probable outcome is that Chinese producers, which are already competitive suppliers of inputs that are important to the Mexican economy (e.g., auto parts), would gain market share. A withdrawal from NAFTA would make U.S. exports less competitive in the global marketplace to the benefit of the next best alternative suppliers.

Import Contraction in $ Billions and Contraction as percent of 2016 import levels
Ranges represent Inelastic to Elastic reactions
MFN Case assumes MFN tariffs are levied
Worst Case assumes tariffs escalate to final bound, the highest level of tariffs acceptable under the WTO

		All Products		Ag		Non-Ag		Chemicals	
Importer	Exporter	Base Case	Worst Case	Base Case	Worst Case	Base Case	Worst Case	Base Case	Worst Case
U.S.	Canada	$9-24 3-9 percent	same	$0.1-0.4 4-11 percent	$0.2-0.5 4-12 percent	$8-22 3-8 percent	same	$0.6-1.6 3-7 percent	same
U.S.	Mexico	$9-26 3-9 percent	same	$0.4-1.2 4-11 percent	$0.5-1.4 4-12 percent	$8-23 3-8 percent	same	$0.1-0.3 3-7 percent	same
U.S.	CA + MX	$18-50 3-9 percent	same	$0.6-1.6 4-11 percent	$0.7-1.9 4-12 percent	$16-45 3-8 percent	same	$0.7-1.9 3-7 percent	same
Canada	U.S.	$10-27 4-10 percent	$16-43 6-16 percent	$1.0-2.8 14-39 percent	$1.0-2.8 14-39 percent	$5-14 2-6 percent	$12-34 5-13 percent	$0.2-0.5 1-2 percent	$1.1-3.0 4-11 percent
Mexico	U.S.	$14-40 6-18 percent	$75-208 33-91 percent	$0.9-2.6 13-37 percent	$2.8-7.9 41-113 percent	$11-32 5-14 percent	$70-194 31-87 percent	$0.4-1.2 2-6 percent	$6.8-19.0 32-88 percent
CA + MX	U.S.	$24-68 5-14 percent	$90-251 18-51 percent	$1.9-5.4 14-38 percent	$3.8-10.7 27-75 percent	$17-46 3-10 percent	$82-227 17-47 percent	$0.6-1.8 1-4 percent	$7.9-21.9 16-45 percent

Source: U.S. International Trade Commission; WTO, 2017 Tariff Profiles; American Chemistry Council

Erosion of U.S. Manufacturing Competitiveness

North American regional supply chains have facilitated the extraordinary gains in efficiency and productivity in the U.S. manufacturing sector. Withdrawing from NAFTA would reverse those gains and reduce the competitiveness of U.S. businesses, as both domestic and foreign firms would be incentivized to find substitutes to U.S. and North American produced goods. A significant portion of goods produced in the U.S. are a product of the North American supply chain incorporating raw materials and components from Mexico and Canada. U.S. export competitiveness depends on that regional base and regional economies of scale to compete with low cost Chinese manufacturers.

If MFN tariffs are charged on intra-North American trade, the cost to manufacture goods in the U.S. and in North America would rise, and U.S. and North American goods production would contract as a result. As producers seek alternatives to higher-cost U.S. and North American goods, demand for Chinese products will rise. The increase in North American production costs will be incurred directly and indirectly.

- Domestic producers that directly incorporate inputs from Canada or Mexico will face higher costs to produce in the U.S.
- Domestic producers that incorporate inputs from any other U.S. firm that incorporates an input from Canada or Mexico will face higher costs to produce in the U.S. and so on.
- Foreign producers that directly incorporate inputs from North America will face higher costs to produce. In turn, their output is also less competitive.

Goods made without any North American input will be advantaged. Withdrawing from NAFTA would increase the cost to trade and produce in North America to the advantage of the producers of the Chinese and European manufacturing hubs. If North American supply chains disintegrate due to the introduction of prohibitive trade barriers, it's not clear that producers would turn fully to U.S. domestic suppliers as their next best alternative. Sufficient capacity -- in terms of production facilities or the right type of labor resources at the right price -- may not exist. As the situation currently stands, U.S. manufacturers are already facing difficulty filling middle and lower skilled positions. More than half of U.S. manufacturers report shortages in unskilled production labor. Skills shortages are making it difficult for companies to achieve productivity targets, maintain production levels consistent with customer demand, and import, export, or expand globally.[iv]

The U.S. industrial sector is expected to face an extended period of skilled labor shortage due to a combination of factors, including the wave of baby boom retirements. One of the driving reasons that U.S. firms have extended their supply chains and traded with Mexico is the relatively high-cost structure in the United States. Mexico has a comparative advantage in lower cost labor, but the U.S. does not. **By extending the supply chain across the border, U.S. firms have not merely survived, they've thrived. The North American supply chain and intra-regional trade have not merely protected U.S. jobs, they have created jobs.**

Cutting off U.S. firms from the inputs that they need from Mexico would force the firms to seek the next best substitutes. China and Mexico compete in supplying the products of low-cost labor. Chinese suppliers may be better positioned than U.S. domestic firms to provide the next best alternatives to Mexican products. Given the existing intensity of trade between the U.S. and China, and the considerable amount of slack in the Chinese industrial sector, NAFTA withdrawal would predictably lead to an expansion in U.S.-China trade and displacement of U.S. exports to global customers.[v]

Erosion of Competitiveness Puts New Chemical Investments at Risk

Looking ahead to the potential path of expected growth in chemical exports to Canada and Mexico through 2025, exports are expected to grow from a projected $44.2 billion in 2018 to $59.2 billion by 2025, including $12.6 billion in exports from new chemical investments. For purposes of analysis, we assumed tariffs are reintroduced beginning in 2018, making U.S. chemical exports to Canada and Mexico more expensive by the amount of the tariff (full pass-through). The analysis examines two scenarios – one where tariffs return to MFN rates or a more aggressive scenario where tariffs go up to the final upper bound tariffs allowed by WTO rules. The analysis shows that new tariffs on U.S. exports will result in a significant drop in chemical exports through 2025. A drop in demand for U.S. chemicals puts new chemical investments at risk.

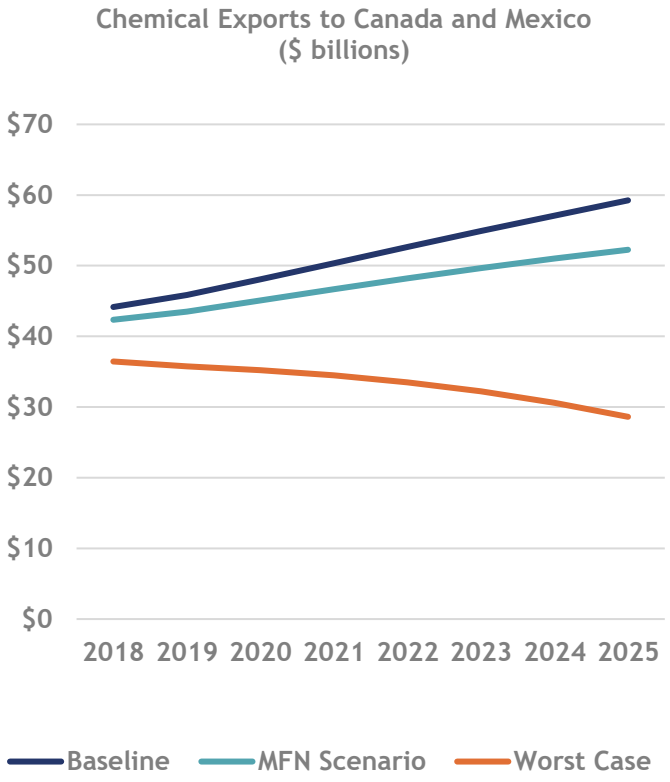
Between 2018 and 2025, introduction of MFN tariffs is expected to cut into baseline export growth, such that by 2025, chemical exports to Canada and Mexico are 11.8 percent ($7.0 billion) lower than where they would have been. If tariffs escalate to final upper bound tariffs, the deterioration in exports is much more

pronounced. Compared to the baseline, exports are 51.7 percent ($30.1 billion) lower by 2025.

The change in demand for U.S. chemical exports in Canada and Mexico is significant under either tariff scenario. In the more conservative case of a return to MFN tariffs, chemical exports are expected to continue to grow, but at a slower pace as Canadian and Mexican consumers work to substitute more expensive U.S. exports for other sources of supply. By 2025, exports are expected to be 11.8 percent lower, creating headwinds for new manufacturers that built production facilities in the U.S. under the expectation of tariff-free trade with Canada and Mexico.

Chemical Exports to NAFTA Baseline and Scenarios
($ 2016 billions)

	Baseline	MFN Scenario	Upper Bound Scenario
Exports to NAFTA (2018)	$44.2	$42.4	$36.4
Exports to NAFTA (2025)	$59.2	$52.3	$28.6
Change (2018-25)	$15.1	$9.9	-$7.8
2025 Compared to Baseline ($)		$7.0	$30.6
2025 Compared to Baseline (percent)		-12 percent	-52 percent



Appendix

Lost Chemistry Demand

U.S. withdrawal from NAFTA would result in lost demand for U.S. chemicals. In addition to the loss of export demand for U.S. chemicals, the impact on chemicals demand is even greater when the lost chemistry contained in the production of other goods is included. By making a broad portfolio of U.S. goods exports more expensive, U.S. withdrawal from NAFTA would lead to a fall in demand for other goods that use U.S. produced chemicals as inputs. As a result, demand for the chemistry contained in the production of other manufactured goods also evaporates.

If tariffs on U.S. exports escalate (as in the worst case/ retaliatory scenario), the impacts on U.S. chemistry demand could be substantial and the severity of the impacts will increase given time. North American supply chains are highly integrated. Customers and firms in Canada and Mexico may have more difficulty substituting away from higher priced U.S. goods in the short-term. New suppliers will need to be found either domestically or from non-U.S. trading partners. There may be capacity constraints on domestic producers. All of this will take time to sort out. Over time, however, new supply chains will be established and new sources of supply domestically and from abroad will be identified. It will be much easier for customers and firms to substitute products produced in the U.S. with other sources. As a result, the impacts in the short-term are less severe than impacts longer term. **Lost demand for U.S. chemistry translates directly into lost jobs.** Based on analysis using the IMPLAN model, direct chemical industry job losses in the short-term could range from 2,100 in the base case scenario to 7,600 in the worst case. In the long-term, between 4,600 (base case) to 21,200 (worst case) U.S. chemical industry jobs could be lost. The impact of a NAFTA withdrawal on U.S. chemistry demand in four different scenarios - short-term (base and worst cases) and long-term (base and worst cases) – are presented here.

Lost U.S. Chemicals Demand Resulting from NAFTA Withdrawal ($ millions)
Assumes re-introduction of MFN tariffs on U.S. exports in Base Case
and Escalation of tariffs to Final Bound Levels in Worst Case,
Estimates based on 2016 U.S. Exports to Canada and Mexico

	Short-Term		Long-Term	
	Base Case	Worst Case	Base Case	Worst Case
Lost Demand for U.S. Chemical Exports	**$600**	**$7,897**	**$1,800**	**$21,937**
Lost Demand for Chemicals Contained in Other U.S. Goods:				
Plastic & rubber	$259	$881	$259	$2,448
Food products	$175	$53	$175	$147
Textiles & apparel	$134	$231	$134	$641
Motor vehicles	$121	$225	$121	$625
Agriculture	$57	$166	$57	$462
Other manufacturing & mining*	$56	$224	$56	$621
Electrical equipment & electronics	$47	$254	$47	$706
Paper & printing	$42	$137	$42	$380
Metals & metal products	$34	$124	$34	$346
Machinery	$27	$141	$27	$391
Total Chemicals Content of Lost U.S. Goods Exports	**$859**	**$2,436**	**$2,387**	**$6,767**
Total Lost Chemicals Demand	**$1,459**	**$10,334**	**$4,187**	**$28,704**

** includes mining, petroleum refining, furniture, non-metallic mineral products, other transportation equipment, wood products, and miscellaneous manufactures*

For More Information

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References

[i] Related party trade is often cross-border intra-firm transactions of multinational corporations. Technically, the Census Bureau applies the following definitions: For U.S. imports, a related party transaction is a transaction between two parties in which (among many possibilities) "any person directly or indirectly owning, controlling or holding power to vote, 5 percent or more of the outstanding voting stock or shares of any organization." For U.S. exports, a related party transaction is "a transaction involving trade between a U.S. principal party in interest and an ultimate consignee where either party owns directly or indirectly 10 percent or more of the other party."

[ii] Note that after the U.S., China is the top origin of imported goods (12 percent of all imported goods) to Canada. Similarly, after the U.S., China is the top origin of imported goods (18 percent of all imported goods) to Mexico. After Canada and Mexico, China is the top destination for U.S. exports and 17 percent of all U.S. exports are sold to customers in China. The U.S. exported $107 billion in goods to China in 2016. After the U.S., China is the top export destination of exported goods (4 percent of all exported goods) from Canada.

[iii] Chemicals is based on the WTO "chemicals" product group which is not perfectly aligned with what ACC defines as chemicals excluding pharmaceuticals. However, information from the WTO tariff profiles is used in this analysis because it provides a consistent source for comparing tariff rates across countries and sectors.

[iv] The Manufacturing Institute, "Boiling point? The skills gap in U.S. manufacturing"
URL: http://www.themanufacturinginstitute.org/~/media/A07730B2A798437D98501E798C2E13AA.ashx

[v] Chinese manufacturing has been overbuilt and spare capacity exists. The infrastructure for expanding manufacturing already exists. In addition to Chinese readiness to meet displaced North American demand, the Chinese manufacturing hub employs the evolving comparative advantages in the Southeast Asian partner nations through a network of trade and investment. The IMF estimated China's average capacity utilization at 60 percent at the end of 2011, indicating significant slack in their economy (http://www.businessinsider.com/chinas-excess-capacity-problem-2013-6).