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POLICY BRIEF

17-25 Streamlining Rules of Origin in NAFTA

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After promising last year to terminate US participation in the North American Free Trade Agreement (NAFTA), President Donald Trump has opted for a more traditional tactic. He seeks to renegotiate the pact in several areas, including an adjustment in the "rules of origin" chapter. This chapter defines the regional value share and/or transformation that must occur to ensure goods imported into the United States from Canada and Mexico contain components actually produced in these three countries. The purpose of this provision, negotiated in the early 1990s, was to make sure that goods made outside the region do not enter the United States duty free.

Secretary of Commerce Wilbur Ross has been especially outspoken on the issue, stating that "the rules of origin in NAFTA need some tightening" and that there are "holes where people from outside can benefit."[1] His comments imply that one possible outcome from a NAFTA renegotiation is stricter rules of origin.

The existing rules of origin in NAFTA are already strict. They vary from product to product and typically require higher regional value shares than other similar trade agreements. Tightening rules of origin would be costly to consumers and introduce inefficiencies for businesses. A positive reform of NAFTA would *simplify* rules of origin and create a single, lower regional value content threshold that can be applied uniformly across products. The Trump administration, which favors cutting regulations and not adding to them, should be more interested in streamlining rules of origin requirements than making them more complex.

International trade rules permit rules of origin in free trade agreements to prevent goods from outside countries from receiving duty-free treatment when traded across regional borders. But in practice rules of origin are used as a form of trade protection, particularly for sensitive products such as autos and apparel. Because strict rules expand the share or type of value added that must be produced regionally, the protection intended for final goods is also transferred onto the parts used to produce them. This cascading of protection means some regionally produced parts are used even when foreign parts are cheaper.

While using more parts produced in Canada, Mexico, or the United States benefits regional production, it also makes production less efficient and raises the prices of the final goods. To the extent that rules of origin shift the production of parts from more efficient external producers to Mexican or Canadian firms, it is a pure welfare loss for US citizens who face higher prices without benefitting from domestic job creation. The fact that it was Mexican and Canadian auto parts suppliers that were most concerned about loosening rules of origin during negotiations of the Trans-Pacific Partnership suggests that they have the most to gain from tighter rules.

Complex rules of origin additionally create administrative inefficiencies because they are cumbersome to comply with and add to trade costs. To be granted duty-free access under NAFTA, firms are required to document the origin of parts used in production and obtain a certificate of origin. These additional administrative costs imply that some trade between NAFTA countries enters through most favored

1. "Commerce's Wilbur Ross accuses Mexico of taking advantage of NAFTA rules in trade with China," CNBC, April 27, 2017, http://www.cnbc.com/2017/04/27/it-appears-canada-and-mexico-are-ready-to-start-renegotiating-nafta-says-commerce-secretary-wilbur-ross.html (accessed on June 7, 2017); and "Renegotiating Nafta's Rules of Origin," interview with the *Wall Street Journal*, April 25, 2017, http://www.wsj.com/video/renegotiating-nafta-rules-of-origin/CD898145-42FD-480B-86A5-67D13B0644FA.html (accessed on June 7, 2017).

nation (MFN) tariffs instead of NAFTA trade preferences. It also means that some businesses end up not participating in NAFTA trade, particularly small businesses that lack the legal personnel with knowledge on the NAFTA certification process.

This Policy Brief examines the rules of origin in NAFTA to determine whether they need to be tightened to prevent foreign goods from using NAFTA trade preferences or loosened to improve efficiency. It describes the rules of origin in NAFTA and discusses how they have been utilized, with a focus on the auto industry. It also considers how they could be improved to make regional supply chains more efficient, while protecting against leakage of NAFTA preferences to nonmembers.

A positive reform of NAFTA would simplify rules of origin and create a single, lower regional value content threshold that can be applied uniformly across products.

The analysis shows, consistent with numerous academic studies of the agreement, that NAFTA rules of origin are strict and highly complex, as compared with rules in other free trade agreements. Tightening them could perversely lead to lower regional content in final goods and disrupt regional supply chains, as more importers eschew NAFTA preferences because of costly rules of origin and instead trade under standard MFN tariffs. Once goods are imported through nonpreferential channels, rules of origin become irrelevant so regional content is likely to fall. The Brief also shows that even if NAFTA content increases, rules of origin do little to increase the share of US content. Thus, if the real goal is more US content, rules of origin are not an effective tool. And finally, small businesses are especially disadvantaged by cumbersome rules of origin because the bureaucratic costs of doing business are a larger share of their total costs.

Given the complexity of the NAFTA rules of origin, this Brief argues in favor of streamlining rules, with regional content requirements for all goods set at one rate, as opposed to the current product-by-product rules in NAFTA. Moving toward a global norm is an important goal to ensure that firms exporting to multiple destinations are not forced to choose between agreements.

WHAT ARE RULES OF ORIGIN AND WHY DO WE HAVE THEM?

Rules of origin are allowed in free trade agreements to ensure that products produced outside the member countries are not entitled to the preferences that regionally produced goods receive. Since countries in a free trade agreement have different MFN tariffs on externally produced goods, without rules of origin, imports could evade tariffs by being imported to the lowest-tariff country and then reexported to another regional agreement member. For example, the US MFN average tariff on imported peanuts (Harmonized System [HS] code 1202) is over 100 percent; in contrast, the tariff on imported peanuts in Mexico is zero. To export peanuts to the United States from Mexico, a certificate of origin must show that the peanuts were grown in a NAFTA country. Without rules of origin, peanuts could enter Mexico duty free from a peanut producing nation outside of NAFTA, such as Brazil, and then be shipped to the United States through NAFTA, avoiding the hefty duty.

Chapter 4 of NAFTA describes the rules of origin requirements. As with other trade policies, the devil is in the details, and they can be found in the 304-page Annex 401 to NAFTA that specifies the rules of origin at the product level. NAFTA rules of origin require goods to originate in the region or be significantly transformed; goods that are significantly transformed, meaning produced with components from other countries, require a change in tariff code and/or must meet a required percentage of regional content. To be eligible for NAFTA preferences, a NAFTA certification of origin must be completed by the exporter and provided to the importer.

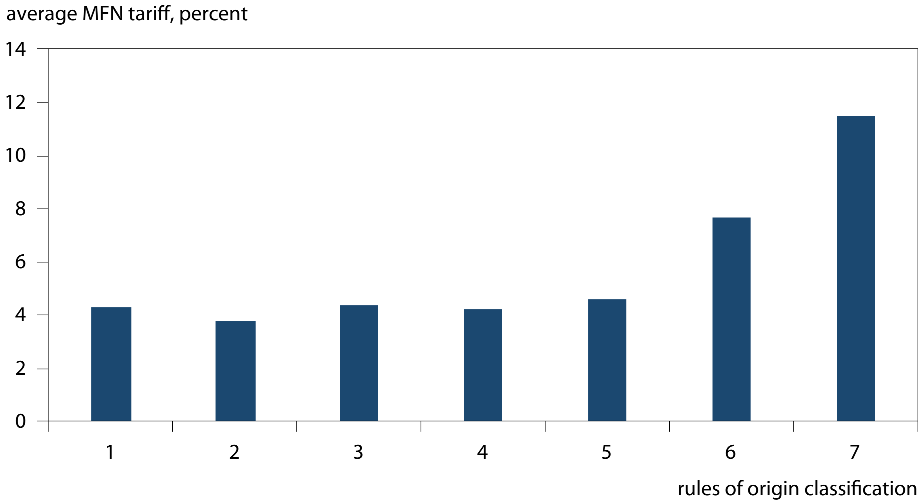
For example, the rules of origin on cars (HS 8703.21-8703.9) require:

> A change to subheading 8703.21 through 8703.90 from any other heading, provided there is a regional value content of not less than 62.5 percent under the net cost method.

There are three parts to this rule. The first part requires an HS code heading change to ensure that the assembly of a motor vehicle originates in the region, preventing a motor vehicle made abroad from qualifying for special treatment. The second part is the content requirement, which ensures that there is significant NAFTA value added. And the third part explains how regional content is calculated. The net cost method, preferred in NAFTA, excludes costs of distribution, shipping, royalties, interest, promotion, and retail.

The net cost method also incorporates "tracing" rules for large car parts that may themselves be made up of regional and imported parts (these are contained in a separate annex

Figure 1 Rules of origin and tariffs are correlated



MFN = most favored nation
Note: Rules of origin rated on a scale of 1 to 7, where 7 is the strictest.
Sources: US Department of Commerce and Estevadeordal and Suominen (2003).

to chapter 4). For example, if an electric motor imported from Asia is attached to a Mexican-made car seat and sold to a car company, the electric motor is subtracted from the calculation of regional value because it is a traced product.[2] The rules also dictate other parameters, such as the level of aggregation, that provide manufacturers with more or less flexibility in meeting rules of origin requirements. For autos, for example, the level of aggregation over which a company determines content is within the plant (as opposed to the model or firm).

Textiles and apparel also have complex rules of origin. For example, the rule for men's cotton boxer shorts extends for more than a page, listing in detail the types of fabric that qualify. Many agricultural and food products also have cumbersome technical requirements.

Rules of Origin Are Used as Protection

The World Trade Organization imposes few strict disciplines on rules of origin, and as a result they have been used not only to legitimately protect against transshipment abuse but as a form of trade protection, particularly in sensitive products such as apparel and autos. Economic theory shows that rules of origin can be used to transfer protection of a final good onto the parts and components used to produce it (Krishna and Krueger 1995, Falvey and Reed 1998, Krishna 2005). Parts that are more efficiently produced outside of the region may be bought from local suppliers or imported from a regional trade partner. For example, because of the 62.5 percent content requirement for autos, some parts and components that would otherwise be purchased from Asia or Europe are instead purchased in the NAFTA region.

While content requirements ensure that most auto parts used in production in Mexico are from the region, it is important to note that they do not necessarily expand sales of US parts, as Mexican- and Canadian-made parts are counted similarly. When NAFTA was created in 1994, content requirements favored US car companies that used more NAFTA-originating parts, as compared with Japanese or German producers that relied more heavily on parts from Asia and Europe. As global supply chains have expanded, however, the relative benefits have changed, as many foreign models are produced in North America, with mostly regional inputs.[3]

An extensive empirical literature finds that rules of origin are designed to protect some industries and result in production distortions (Cadot and de Melo 2007). The correlation between MFN tariffs and rules of origin in NAFTA supports the view that they are used as protection in NAFTA. Figure 1 shows the average MFN tariff for products according to the rules of origin as defined by Estevadeordal and Suominen (2003), where 1 is less strict

2. As described in NAFTA Rules of Origin Regulations, available at https://www.law.cornell.edu/cfr/text/19/appendix-to_part_181 (accessed on June 9, 2017).

3. For example, of the eight top American-made cars, five are made by Toyota and Honda. 2016 Cars.com American-made index, https://www.cars.com/articles/the-2016-carscom-american-made-index-1420684865874/ (accessed on June 7, 2017).

and 7 is the most strict. The products with stricter rules of origin tend to be special interest goods that also have higher MFN average tariffs.

The most comprehensive empirical paper to date on the subject finds that NAFTA rules of origin have a large and significant effect on Mexican imports of parts. Conconi et al. (2016) find that, on average, strict rules of origin reduced imports of parts from non-NAFTA countries by 30 percent. Cadot et al. (2002) also find that NAFTA rules of origin roughly offset tariff preferences in some industries, especially footwear and food and tobacco. Using data on a large cross section of countries, Estevadeordal and Suominen (2009) find that free trade agreements expand trade, but stricter rules of origin reduce trade.

Comparing Rules of Origin

Compared with other trade agreements, NAFTA's rules are relatively strict. Estevadeordal and Suominen (2003) examine rules of origin in 35 trade agreements. After characterizing the restrictiveness of each rule on the 1 to 7 scale, they average the scores across products covered by those rules. NAFTA is found to have the strictest rules of all agreements, with an average score of 5.1. In comparison, the EU-Mexico agreement has an average score of 4.8 and Japan-Singapore 4.6.

One reason NAFTA rules tend to be more onerous is because they require more extensive transformations by tariff category. Substantial transformation under NAFTA often requires a change of chapter, the broadest classification of goods (indicated by the first two digits of the HS code). In contrast, EU rules requiring tariff class changes are typically at the classification heading (first four digits). EU rules therefore allow some products from the same chapter to be transformed and still qualify for EU preferences, whereas NAFTA does not. For example, Mexican-made canned tomato soup requires a change from another chapter under NAFTA rules, thus the soup cannot be made from imported canned tomatoes; in contrast such a soup would qualify under EU preferences.

As the number of free trade agreements grows, so too does the problem of their differing rules of origin. For producers, this proliferation of rules means their products have to be uniquely made and certified to qualify for preferences in different agreements. The often substantial differences sometimes force firms to choose between regional trade agreements (Moroz 2017).

Given the large and increasing number of trade agreements, coordination among countries to work toward a global set of accepted rules would improve business efficiency. As regional agreements multiply, coordination would also ease the move toward cumulation, where countries can count goods from countries in different or expanded free trade agreements towards the content requirement.

WHEN IT COMES TO RULES OF ORIGIN, STRICTER DOES NOT MEAN BETTER

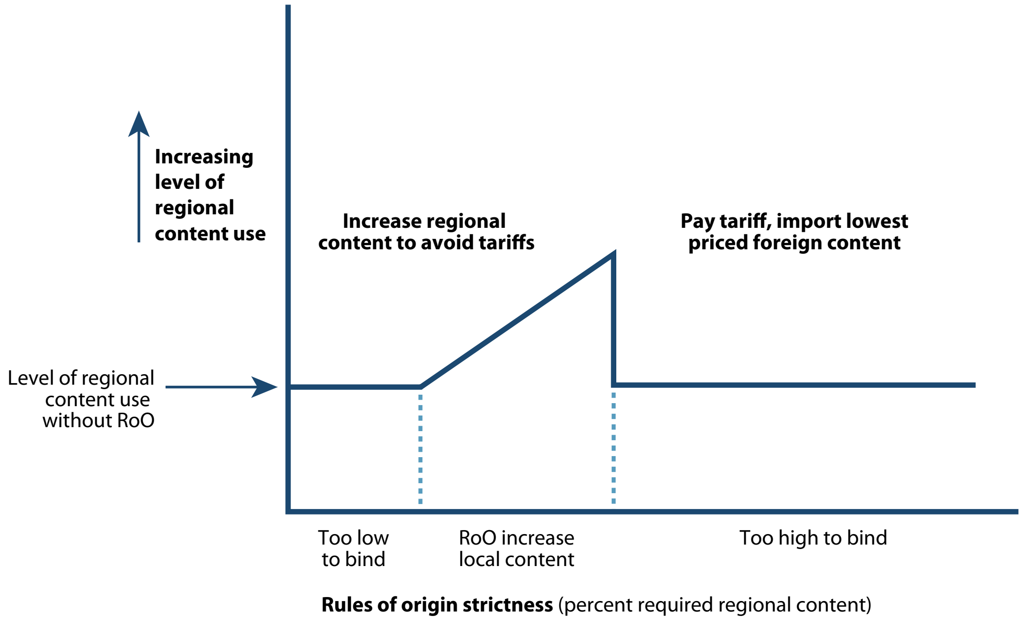
While rules of origin encourage producers to use regional inputs, they also increase production and administrative costs. Exporters have to balance the costs of complying with rules of origin against the tariff preferences received. If the tariff is low and foreign inputs are relatively inexpensive (or administrative costs associated with rules of origin are high), firms may choose to eschew NAFTA preferences and trade through MFN tariffs instead. Because rules of origin raise the costs of obtaining duty-free access under NAFTA, as they become stricter, use of regional content can fall if the rules lead firms to trade under MFN tariffs instead of NAFTA preferences (Ju and Krishna 2005).

The relationship between rules of origin and regional content for an individual firm is displayed in figure 2. When regional content requirements are low, assuming some fraction of the total content is optimally of NAFTA origin, rules of origin will not bind, and regional content will remain constant. Eventually, the level of regional content required to receive preferences becomes binding, and the firm replaces foreign inputs with more costly NAFTA inputs. This relationship is represented in the figure where the rise in regional content use equals the increasing strictness of the rule of origin. The firm will pick those parts where the cost (or quality) differential between NAFTA produced goods and foreign produced goods is lowest. As rules of origin become stricter, the firm replaces more foreign parts with NAFTA parts. At some point, however, the cost differential between NAFTA inputs and foreign inputs is too great and it becomes more profitable to pay the MFN tariff than use NAFTA inputs. Once the firm decides to pay the tariff, regional content falls, dropping back to the optimal input mix.

For total imports of a product, where a heterogenous group of firms uses different input mixes in production, the maximum point will differ somewhat across firms. But overall, the shape will still have a maximum, with a point beyond which stricter rules of origin begin to lower regional content (figure 3). This point occurs when the loss in regional content from the marginal firm that stops using NAFTA equals the gain in regional content from all the firms that comply with the new rule.

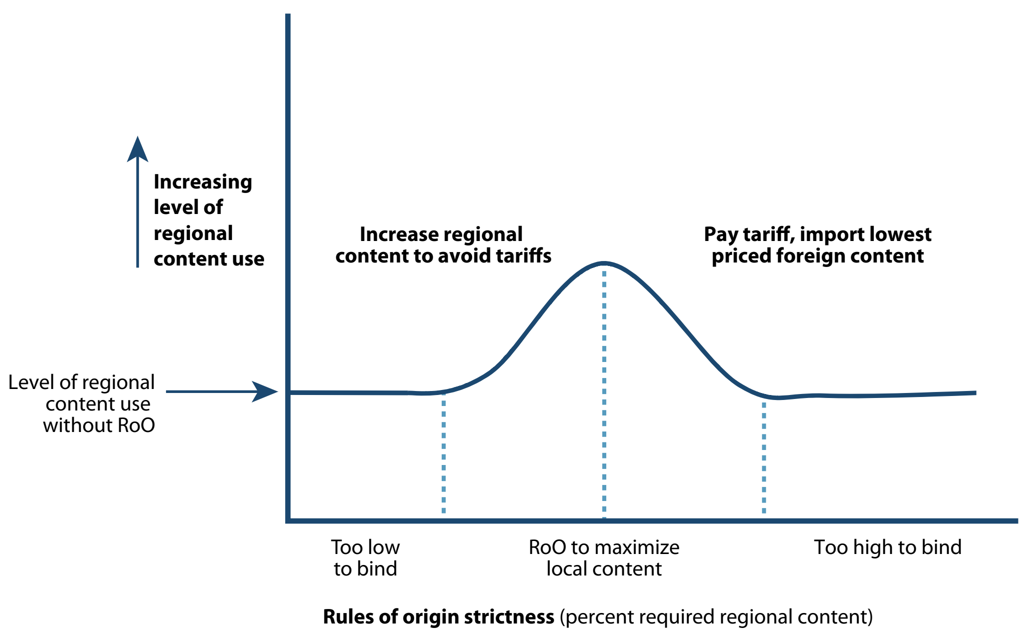
The shape of the curve will also depend on the tariff preference. When the MFN tariff is high, firms will be more willing to substitute expensive NAFTA intermediates for

Figure 2 Regional content and rules of origin at the firm level



RoO = rules of origin

Figure 3 Regional content and rules of origin at the industry level

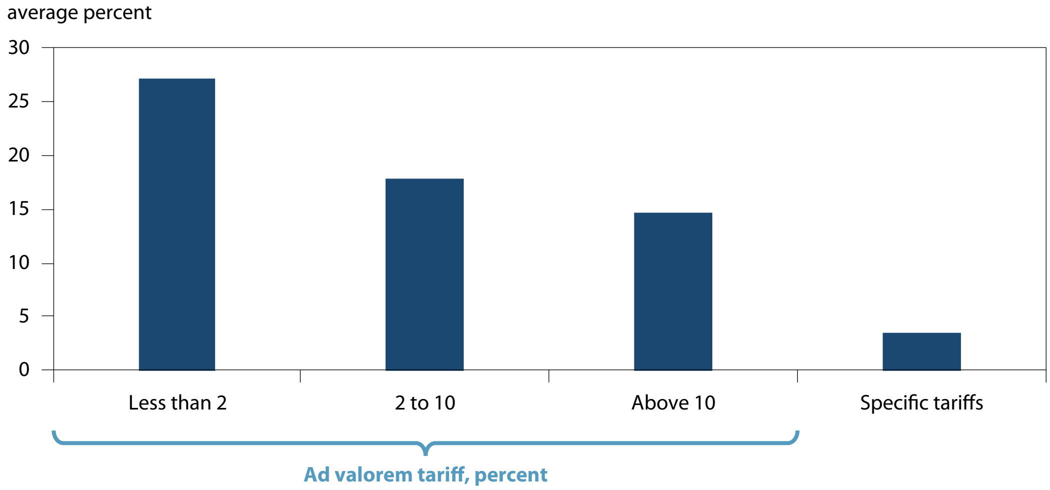


RoO = rules of origin

cheaper foreign ones to avoid paying it. A higher tariff therefore shifts the point at which regional content is maximized to the right—toward a stricter rule of origin.

Even when stricter rules lead to more regional content, there can be a significant loss from a welfare perspective. Increasing regional content must also be balanced against efficiency. As the industry approaches the maximum regional

Figure 4 Average share of products entering the United States from Mexico through MFN tariffs instead of NAFTA preferences, 2016, by tariff level



MFN = most favored nation; NAFTA = North American Free Trade Agreement
Sources: US Department of Commerce and author's calculations.

content, the product mix is moving away from the efficient mix, raising costs. If stricter rules lead to more Mexican content, then from a US perspective, there is a pure loss from higher regional content requirements, as consumers face higher prices, but no new US jobs are created.

Higher MFN Tariffs Lead to Higher NAFTA Utilization, But Stricter Rules of Origin Lower Utilization

The costs of NAFTA rules of origin are apparent by the fact that trade between NAFTA partners does not fully use NAFTA preferences and NAFTA utilization varies with the extent of preferences. Two forces determine the extent to which NAFTA preferences will be utilized: the costliness of adhering to the rule and the extent of tariff protection. When external MFN tariffs are high, companies have more to gain from abiding by rules of origin and entering through NAFTA.

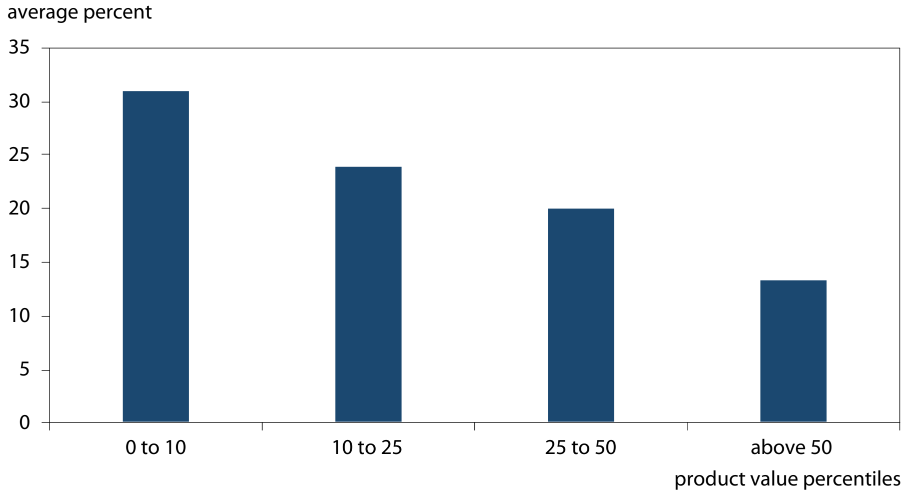
The US Commerce Department provides data at the product level on the share of goods that enter the United States through NAFTA preferences. The data show that the costs associated with complying with rules of origin discourage some firms from importing using NAFTA preferences. When MFN tariffs are low, on average across tariff lines, a greater share of imports enter the United States through MFN. Figure 4 shows the average share of products that enter the United States through MFN tariffs instead of NAFTA preferences, for goods with positive tariffs. Products with zero tariffs always enter through MFN (not shown). When tariffs are positive but below 2 percent, on average, one quarter of the value of a product enters through MFN, with the remaining three quarters using NAFTA preferences. As tariffs rise, a smaller share of goods use MFN and a greater share of goods enter through NAFTA. When specific tariffs are present, which typically are more costly than ad valorem tariffs, over 95 percent of the value of goods on average enters through NAFTA, though even in these high tariff categories, there are some products with low NAFTA utilization rates.

Small Exporters and Startups Are Disadvantaged by Rules of Origin

Rules of origin create a barrier to entry for new or small businesses because certificates of origin must be obtained. Because large and incumbent exporters have bigger administration offices that can handle the additional costs of documenting origin, they are at an advantage. For small businesses interested in entering the export market, the added costs of documenting origin discourages exporting. Since the administrative cost of rules of origin acts as a fixed cost, it places a heavier burden on small firms and low-value products.

While import data are not available at the firm level to show this barrier, the effect of rules of origin on low-value exports is apparent in product-level data. Figure 5 shows the share of products from Mexico imported into the United States where NAFTA preferences are not utilized, for 3,903 products with positive MFN tariffs, by product value percentile. For the nearly 400 products that are in the lowest value class of the products the US imports from Mexico—the smallest 10 percent of products by size—more

Figure 5 Average share of US imports from Mexico through MFN tariffs by product size, 2016



MFN = most favored nation
Sources: US Department of Commerce and author's calculations.

than 30 percent on average enters without using NAFTA preferences. In contrast, less than 15 percent of products in the highest value class enters without using NAFTA.

One potential way to improve market access for small businesses is to raise the de minimis threshold under which rules of origin do not bind. Currently, shipments under $2,500 are not obliged to meet the NAFTA certification requirement. But even for small businesses this is not a commercially viable amount. One alternative would be to base the threshold not on the value of the goods shipped but on the value of the tariff revenue, with higher de minimis thresholds on lower tariff products (Ciuriak 2015). The incentive to cheat is small on low tariff goods, and this adjustment would potentially allow a little more wiggle room for small businesses.

Rules of Origin Constrain the Transport Sector

The transport sector (chapter 87)—which includes cars, trucks, tractors, and their associated parts—accounts for a large and growing share of US-Mexico trade because of the extensive auto supply chain. Transport now accounts for 25 percent of US imports from Mexico, up from less than 10 percent in the early 1990s, before NAFTA.

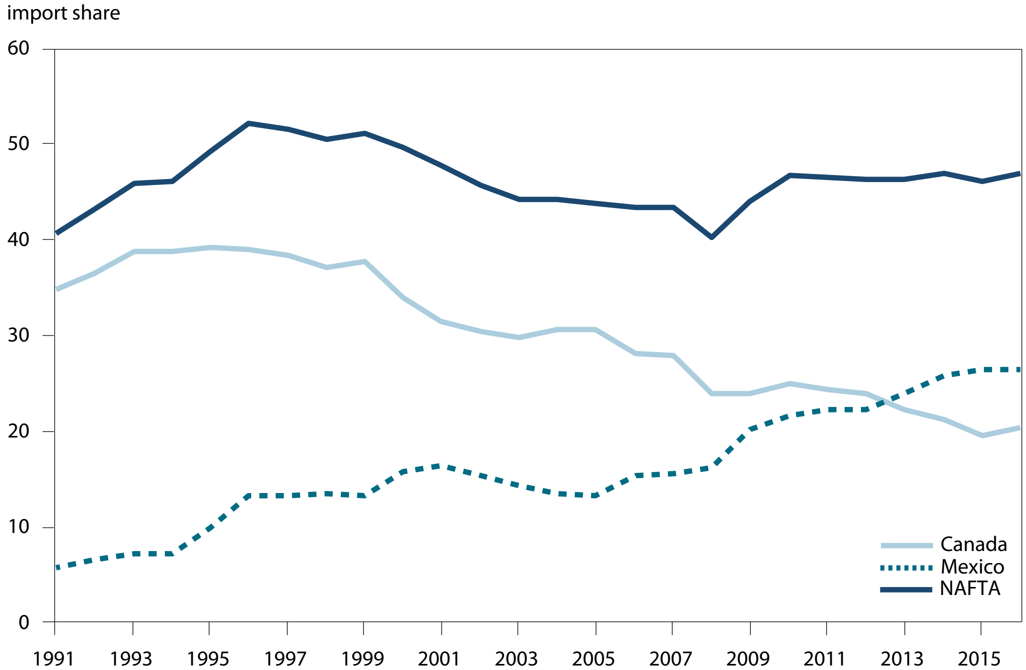
Imports from Mexico largely replaced imports from Canada over the last two decades. Figure 6 shows that NAFTA's share of US imports in the transport sector have remained fairly flat at 40 to 50 percent; what has changed is a shift away from Canada towards Mexico.

A serious concern about changing rules of origin requirements is that supply chains, which have developed with current rules in place, would be disrupted. The importance of supply chains is visible in terms of the types of products that are traded (table 1). There are high shares of intermediate goods and intrafirm trade in US-Mexico trade, as compared with US trade with the world. Supply chains are especially prevalent in the transport sector, where intermediates make up half of imports and three quarters of exports, and most trade is within the firm (referred to as related-party trade). These complex global supply chains make certifying origin more difficult, as products are shipped back and forth across borders.

Evidence shows that rules of origin in transport are already tight. Not only are cars and trucks required to have 62.5 percent NAFTA content, but, as noted above, many parts used in the production of cars and trucks are "traced" for content. Traced parts are decomposed by origin and only the regional ones, within any given component, are counted toward the 62.5 percent. By comparison, the rules of origin in the free trade agreements signed by the European Union require 45 percent of value added and, instead of tracing, use a simpler rollup method, where individual parts get counted as wholly regional provided they meet content rules.

Evidence that the rules are strict is apparent in preference utilization in autos, where some imports forgo NAFTA preferences. On average, across product lines in the transport category with positive MFN tariffs, 23 percent forgo preferences and enter the United States through MFN as opposed to NAFTA, above the 18 percent for all products with similar tariffs. While, as noted above, many of the smaller product lines have low NAFTA utilization, there are

Figure 6 Share of US imports in the transport sector, by country



NAFTA = North American Free Trade Agreement
Sources: World Bank, World Integrated Trade Solution, and author's calculations.

Table 1 Supply chains are important

	All Goods				Transport sector goods			
	US imports from		US exports to		US imports from		US exports to	
	Mexico	World	Mexico	World	Mexico	World	Mexico	World
Shares of US trade in goods (percent):								
Intermediate input trade	40	41	75	61	46	38	76	45
Related-party trade	67	51	40	29	84	74	61	34
Majority-owned affiliate trade	21	16	22	29	43	26	n.a.	34

n.a. = not available
Note: Related-party trade is defined as trade within firms with at least 10 percent ownership in the trading partner.
Sources: Amiti, Freund, and Bodine-Smith (2017); US Census Bureau; and Bureau of Economic Analysis.

also some high-volume products where NAFTA utilization is relatively low. As an example, consider the $1.5 billion of drive axles (HS 870850) the United States imports from Mexico. The tariff is 2.5 percent and the rule of origin is complex: The rule lists in detail which transformations permit a drive axle to qualify for NAFTA preferences. The rule also requires a minimum of 60 percent NAFTA content, if the drive axle uses parts from specific drive axles categories (8482.10 through 8482.80). Roughly 20 percent of the value of drive axles enter through MFN tariffs, i.e. without using NAFTA. Another important part, with low NAFTA utilization, is car radiators (HS 87089150), where the tariff is also 2.5 percent and the rule of origin requires a 60 percent NAFTA content, unless the radiator is made without using radiator parts (transformed from category 870891). About 25 percent of the value of radiator imports enter without using NAFTA. Raising the regional content requirement would further reduce the share of imports that come through NAFTA—and thus, likely, the share with a high NAFTA content.

Over the last decade, according to the Organization for Economic Cooperation and Development's Trade in Value Added database, the NAFTA and US share of value added in Mexican exports of "motor vehicles, trailers and semitrailers" has fallen somewhat. The NAFTA share for the sector is estimated at around 70 percent in 2011 (the most recent year available), suggesting the rules of origin are binding. While the share is above the 62.5 percent rule of origin, it includes some value added that would not qualify under NAFTA, such as the US value added in car parts imported from Asia or Europe. In addition, car companies regularly use slightly more regional content than the restrictions require to ensure that potential disruptions from regional suppliers or paperwork/verification issues do not prevent them from achieving NAFTA certification. Given that global supply chains make it more difficult to certify where goods are produced, many producers state that they are operating very close to the margin, with a small buffer to ensure they meet NAFTA requirements.

While there is a chance that raising content thresholds could lead to more NAFTA content (especially Mexican), there is a risk that raising these thresholds would lead conversely to more autos and parts entering through MFN, thus with lower NAFTA content. There are also the higher production distortions and added costs of complying with rules of origin to consider.

TOWARD A BETTER SYSTEM OF RULES OF ORIGIN

Because the rules of origin in NAFTA are especially complex and were designed before the global-supply-chain revolution, it is time to reform them. Replacing the 304-page annex describing rules at the product level with a simple rule that can cut across all NAFTA trade would be an improvement. Three ideal reforms would be:

- A uniform rule applying to all products, with a simple regional content rule of, for example, 40 to 50 percent. The complex tariff category change restrictions should be amended to always allow for showing regional value above the required amount as an alternative. A simple regional content rule is more transparent, while maintaining the alternative tariff category transformation offers some flexibility to firms.
- Expanding the de minimis threshold under which products do not have to be certified, especially for low tariff products, to help small businesses that find compliance with rules of origin cumbersome.
- Move towards a global norm that would make it easier for exporters to conform to the rules in different trade agreements and that would also allow cumulation when regional agreements expand to include other countries.

Making rules of origin stricter and more complicated would be bad for producers and lead to higher prices for consumers, without guaranteeing more US content will end up in final products. Stricter rules could lead to more trade going through MFN tariffs and thereby lower regional content. In cases where regional content does expand, any NAFTA partner could benefit, not just the United States. Small businesses are especially deterred from trading, as the added compliance cost is a higher share of their low-value shipments.

Going forward, coordination on rules of origin among WTO members to achieve one simple set of rules that all free trade agreements follow would be an improvement on the current system, where companies must learn the intricacies of a growing number of unique trade agreements, each with its own product-specific rules, and obtain a corresponding certification. Ideally, a single certification for goods with value added of say at least 50 percent from the source country could be used for all trade agreements to which the source country is a signatory.

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