CHAPTER 4

NAFTA Modernization: A Canadian Perspective

Wendy Dobson, Julia Tory, and Daniel Trefler

The Trump administration is about to begin renegotiating the North American Free Trade Agreement (NAFTA). It believes the deal has been bad for the United States and that Canada and Mexico have been the beneficiaries because they were better negotiators.

In fact, Canada has not fared particularly well under NAFTA. Canada runs a \$78 billion trade deficit with the United States on nonenergy manufacturing, making American manufacturing workers big winners. Further, Canadians pay out \$6 billion a year for the use of American intellectual property (royal payments), making American technology firms big winners. An authoritative study concludes that as a result of the NAFTA tariff concessions, Mexico and the United States experienced gains while Canada experienced losses (Caliendo and Parro 2015).

The negotiations should start by acknowledging that workers throughout North America face disruptions from new technologies and international competition from low-wage countries. These factors are reaching hurricane force as artificial intelligence, robotics, and an increasingly innovative China batter the average North American worker.

Unfortunately, trade negotiations always attract special interests whose agendas are incompatible with competitiveness and the public interest. Of particular concern are voices that seek to reduce innovation and carve out monopolies in new technological areas. These monopolies hurt consumers and reduce countries' ability to compete globally.

For all these reasons, NAFTA negotiators should avoid finger-pointing and trying to gain incremental advantages for narrow special interests in their countries. Instead, they should seek to make the entire region more competitive in the changing global economy. The opportunity to do so exists, because NAFTA has irrevocably cemented cross-border value chains in North America in energy and manufacturing. Any policy

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disruption of these value chains risks sending the North American economy into a tailspin; building on these value chains could strengthen the region as a whole.

In this dynamic context, few would question initiatives to update such trade agreements. Chapter 22 of NAFTA allows members to modify the agreement or withdraw after giving other members six months' notice.¹

The Trump administration seemed to support the case for modernization in its May 18, 2017 notification, in which US Trade Representative (USTR) Robert Lighthizer signaled the administration's intention to "initiate negotiations with Canada and Mexico regarding modernization of NAFTA" in order to "support higher-paying jobs in the United States and to grow the US economy by improving US opportunities under NAFTA." The administration argues that many NAFTA chapters are outdated and not reflective of modern standards and that implementing and "aggressively" enforcing commitments by trading partners will be vital to successful agreements.

Although the negotiating issues have not been made explicit, the notification identifies 10 areas of focus: intellectual property rights, state-owned enterprises, labor, the environment, small and medium-sized enterprises (SMEs), electronic commerce (e-commerce), regulatory practices, services, customs procedures, and sanitary and phytosanitary measures. Some of these are dealt with in the Trans-Pacific Partnership (TPP), which implies a channel for NAFTA updating. Others are not and no detail is yet available about issues beyond outdated standards. Congress, which has to authorize the negotiations, will likely provide more shaping and elaboration.

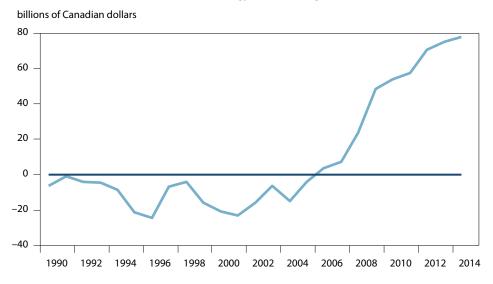
NAFTA can be an instrument for win-win negotiations that improve NAFTA by recognizing converging interests; setting new standards appropriate to the changing structure of trade, investment, and people flows; and making NAFTA a living agreement, periodically updated to remain in step with economic change, along the lines adopted in the Canada–European Union Comprehensive Trade Agreement (CETA). To do so, all partners should update and reevaluate the standards and policies referred to in the notification.

A quarter century has passed since NAFTA went into force. Negotiating full modernization could therefore take years. Canada is willing to enter protracted negotiations that produce a best-on-the-planet trade agreement, but there is broad-based concern that the Trump administration is looking for a "quick win," although Ambassador Lighthizer recently stated that there is no NAFTA timetable. If the United States insists on "quick wins," negotiators would seem to have a choice: At the outset they can limit the set of issues to be negotiated, or they can embark on a comprehensive overhaul that includes a series of attainable short-term goals.

This chapter is organized as follows. The first section demonstrates the risks and pitfalls of framing the negotiation narrowly around trade balances. The second section presents the major common interests all partners share in making North America more globally competitive. The third section examines Canada's interests in NAFTA modernization. The fourth section turns to how Canada might address US concerns about rules of origin; supply management; and Canada's low threshold for customs procedures, duties, and taxes on cross border shipments.

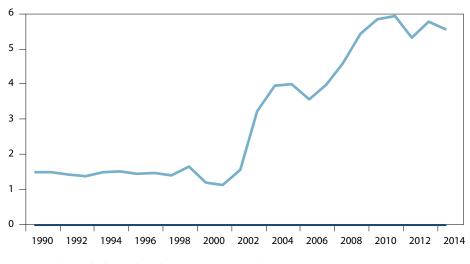
^{1.} As Article 2202 states, "the Parties may agree on any modification of or addition to this Agreement.... When so agreed, and approved in accordance with the applicable legal procedures of each Party, a modification or addition shall constitute an integral part of this Agreement."

Figure 1 US trade surplus with Canada, 1990–2014



a. Nonenergy manufacturing

b. Royalty payments on intellectual property



billions of Canadian dollars

Source: Authors' calculations based on Statistics Canada data.

KEY ISSUES IN CANADA-US TRADE AND TRADE IMBALANCES

The Trump administration is preoccupied with large bilateral trade deficits with many of its trade partners (see chapter 2 by C. Fred Bergsten in this volume). Canada views this concern as a nonstarter, as it leads to only one conclusion: NAFTA is a bad deal for Canada.

Figure 1 displays the US trade balance with Canada between 1990 and 2014. In nonenergy-related manufacturing, the US trade surplus skyrocketed to a massive \$78 billion by the end of the period. The surplus on royalty payments for intellectual property, an issue of repeated USTR complaint, skyrocketed to

\$6 billion in the same period. Were NAFTA's success or failure judged only by the bilateral trade imbalances, the conclusion would be that US manufacturing workers and technology firms, including drug companies, have been big winners from NAFTA and that Canada was the loser.

Yet measured in terms of broad economic benefits, NAFTA has irrevocably cemented cross-border value chains in North America in energy and manufacturing. Canada is the number one market for most US states' exports. By Department of Commerce estimates, in 2015 Canada-US bilateral exports of goods and services supported 1.6 million American jobs. When bilateral investment is added in, the Canadian Embassy estimates that 9 million American jobs were supported. Further, there have been the benefits to consumers of lower prices and greater choice.²

COMMON INTERESTS IN A MODERNIZED NAFTA

Although there are clearly key common interests in modernizing NAFTA, current US discussion tends to be couched in zero-sum terms: Any win by one party is a loss for the others. A modernized NAFTA, updated to a world that has moved on in 25 years, is a major potential tool to promote North American competitiveness from which all three partners would gain. Their common interests are served by promoting innovation through improved chapters on intellectual property and by updating the agreement with a new chapter on e-commerce. Associated changes are needed to promote labor mobility so as to free the flows of knowledge carried by business managers and skilled workers across borders within North America.

Promoting Innovation and North American Competitiveness

Innovation is one of the keys to competitiveness. A modernized NAFTA should therefore promote innovation. Yet because of certain aspects of US treatment of intellectual property, a modernized NAFTA may discourage innovation.

The early 1980s saw a sudden and unprecedented growth in the legal protection of patents and hence the rights of patent holders (see Landes and Posner 2004).³ As these rights strengthened, patents became more valuable because they became easier to defend and use to extract settlements in patent infringement cases.

The annual number of patents granted was stable for decades until the 1980s, when it began growing explosively in response to strengthened patent holder rights (figure 2). But research and development as a percentage of GDP was no higher in 2015 than it was half a century earlier, suggesting that almost four decades of increased granting of patents did not produce more innovation, a phenomenon known as the *patent puzzle* (see Boldrine and Levine 2013). The consensus among economists studying innovation is that the US patent system gives patent holders too many rights, which reduce innovation and raise consumer prices, most spectacularly in the case of pharmaceuticals.⁴

Judging by their recent actions, Congress, state legislatures, the Supreme Court, the Food and Drug Administration (FDA), the Department of Justice, and the Federal Trade Commission (FTC) all understand that the US patent system has drifted too far toward protecting the rights of patent holders, data

^{2.} See Melitz and Trefler (2012) for a comprehensive review of these benefits.

^{3.} The rights of holders of copyrights and biologics data also increased.

^{4.} See surveys by Jaffe (2000), Lerner (2000), Landes and Posner (2004), Boldrine and Levine (2013), and Moser (2013), all of whom argue that increased patent protection has not increased innovation and in many instances reduced it. For recent studies showing that patent protection reduces innovation, see Cohen, Gurun, and Kominers (2016) on patent trolls; Hall, Helmers, and von Graevenitz (2015) on patent thickets; Williams (2013) on the human genome; and Galasso and Schankerman (2015) on drugs, biotechnologies, medical instruments, information technology, and electronics.

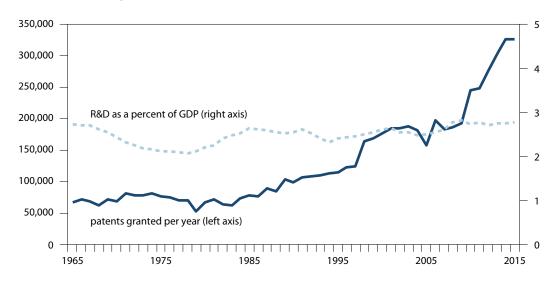


Figure 2 The patent puzzle: Number of patents granted and ratio of research and development (R&D) to GDP in the United States, 1965–2015

Source: Data are from the National Science Foundation and the US Patent and Trademark Office.

holders (in biologics), and copyright holders. All of these institutions and agencies are actively seeking to scale back the scope of intellectual property rights.⁵

What does this mean for NAFTA modernization? Innovation is a key driver of competitiveness, but it is difficult for trade negotiators to measure or regulate innovation. Even modest US attempts to limit the rights of patent holders have required enormous policy flexibility to fight off patent holder interests (Landes and Posner 2004). For new technologies such as biologics, which are in a state of flux, policy flexibility is even more essential to allow regulatory environments to evolve as new technologies mature.

If the goal of forthcoming NAFTA talks is to modernize and promote long-run growth, intellectual property rights should promote rather than inhibit innovation-led growth. North American competitiveness demands policy flexibility in areas related to innovation. It is not that each region necessarily needs its own policy. It is that regulation of these areas is dynamic and should not be locked in by an inflexible international treaty. Flexibility is in the interests of all three NAFTA parties.

A modernized NAFTA is not about Canada versus Mexico versus the United States, it is about consumers. As drug companies and other holders of intellectual property use the USTR to push for strengthened rights, a gap is developing between what the USTR demands and what may be good for the American people.

What this means for the USTR is already apparent in the TPP outcomes in the areas of patents, biologics, and copyrights.

^{5.} For example, the US Supreme Court has restricted patents on DNA, combination products, diagnostics tests, and business methods (Kesselheim, Avorn, and Sarpatwari 2016). Congress passed the America Invents Act of 2011, and the House passed the Innovation Act of 2013. The FDA continues to post articles about ongoing reforms to the regulatory process. The Department of Justice is investigating the inappropriate use of patents in promoting anticompetitive behavior (Scott Morton and Shapiro 2015). In making a case for changes to patent law, the FTC (2011, 3) noted that "we see increasing activity and complexity of business models in markets for patents that do not involve technology transfer. ... This activity risks distorting competition among technologies and deterring innovation." The International Trade Commission (ITC) bucked the trend. Both the Department of Justice and former USTR Michael Froman rebuked it for doing so.

Patents

NAFTA modernization should not make it easier for patent holders to use legal arguments that extend the life of patents or make patents easier to defend in court. Among these legal arguments are the following:

- 1. At the time of filing a patent, evidence must be provided that the idea works. However, when a patent is challenged on the grounds that it was not proven to work at the time of filing, US courts increasingly allow the patent holder to defend the patent using postfiling evidence. Canadian courts have not followed this trend, and a NAFTA panel has ruled in favor of Canada on this issue.
- 2. Patent holders often seek to lengthen their patent term through patent "extensions" and "restorations." A justification for lengthening the term of a patent is that a prolonged regulatory review effectively reduces the patent length. In practice, however, patent holders often intentionally and strategically prolong regulatory reviews. To deal with this issue, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) requires patent terms to start on the date of filing. In contrast, the language of the TPP seems to reinstate regulatory delay as a cause for patent term lengthening. This language would not advance NAFTA modernization.⁶
- 3. Pharmaceutical firms use a set of practices called "secondary patenting" to very significantly delay the entry of generics and maintain drug prices (Kapczynski, Park, and Sampat 2012). Such practices should be limited in any NAFTA modernization.
- 4. Pharmaceutical companies sometimes pay enormous sums to generic companies to keep generic products off the market. The US Supreme Court has criticized such pay-for-delay practices as anticompetitive⁷ and for good reason: The FTC estimates that the practice raises US drug costs by \$3.5 billion every year. New NAFTA language should ban this practice.

Biologics

Biologics are complex molecules associated with living organisms. They have much more complicated structures than most conventional drugs and hence a more complex and evolving regulatory environment under the FDA.

Companies are looking to extend patent life via FDA regulatory processes. The pharmaceutical industry argues that protection is necessary given the risks firms take to invest in drug development. These firms earn very high rates of return on equity, however, suggesting that the returns far outweigh the risks.

Under US law, there is a 12-year period during which data generated by a clinical trial can be used exclusively by the company conducting the trial. The data exclusivity period is shorter in the rest of the world (eight years in Canada and the European Union, five years in Australia).

The FDA is actively working on how to regulate data exclusivity and promote generics for biologics (called biosimilars). At a time when rising drug prices have been the focus of public attention, locking in regulatory inflexibility via an international trade agreement would have very undesirable effects, raising drug prices. NAFTA modernization should restrict data exclusivity to no more than eight years, limit its application and introduce provisions to update rules as the biologics industry matures.

^{6.} There has been some confusion about CETA on this point. The EU regulatory framework for drugs is very different from the framework in Canada and the United States. CETA partially harmonized the two frameworks. The harmonization language has been seized on as evidence that Canada is prepared to consider longer patent terms for drugs, which is not the case.

^{7.} FTC v. Actavis Inc., 133 S. Ct. 2223 (2013).

Copyright

Under the Berne Convention and Canadian law, copyright material is protected for 50 years after the author's death. The TPP would have added an additional 20 years of protection. There is abundant evidence that such extended copyright enriches copyright holders without inducing any increase in creative output.⁸ Further, copyrighted material is less likely to be digitized (Gómez, Uceda, and Keller 2015) and hence less likely to be available to researchers, thus hindering innovation.⁹

In light of this, a modernized NAFTA should contain the following two copyright provisions. First, copyright should be set at 50 years after the author's death: There should be no 20-year extension. Second, there should be clarification of existing "fair use" and "fair dealing" exceptions to copyright. For example, both Canada and the United States should explicitly recognize what they already have in domestic law, namely, a broad educational and research exception. More generally, and in the words of the USTR in 2012, there should be clear "copyright exceptions and limitations for purposes such as criticism, comment, news reporting, teaching, scholarship, and research."

E-commerce

Trade policy is straining to catch up with the rapid development of e-commerce. The TPP included an e-commerce section on which NAFTA renegotiators could build.

In thinking about an e-commerce transaction between two parties, A and B, who reside in the same country, policy makers must bear two technological facts in mind. First, internet traffic between A and B cannot be confined within national borders, because the Internet routes data in complicated ways. Second, data about the transaction between A and B may be stored on a server located in another country.

TPP's Chapter 14 addresses these issues. Section 14.13 states that a government cannot require a business to locate computing facilities in the government's territory as a condition for doing business (a practice known as localization). It also states that localization requirements are allowed for a legitimate public policy objective. Section 14.8 seems to recognize the protection of personal information as a legitimate public policy objective.

Two differences between Canada and the United States may create disputes. First, Canada tends to have stronger privacy laws than the United States.¹⁰ Second, certain areas of commerce (including health and education) tend to be public in Canada and private in the United States. Canadian and US laws and regulations regarding the use of health data for profit may differ in ways reminiscent of the regulatory differences that led to the softwood lumber disputes. Given these difference, explicit exemptions may be necessary for health, education, and possibly some other areas. In addition, there may be a need to clarify that privacy differences are a legitimate reason for localization.¹¹

^{8.} See, for example, Varian (2005, 127). An amicus curiae filed by 17 Harvard economists in a case relating to the 70-year copyright extension outlines the net harm such extensions cause (see Eldred v. Ashcroft, 537 U.S. 186 (2003) (No. 01-618) 2002).

^{9.} Pablo Uceda Gómez and Paul Keller, "The Missing Decades: The 20th Century Black Hole in Europeana," Blog Post, Europeana Pro, November 13, 2015, http://pro.europeana.eu/blogpost/the-missing-decades-the-20th-century-black-hole-in-europeana.

^{10.} Canadian privacy concerns have helped consumers on both sides of the border. Facebook, for example, tightened its privacy rules as a direct response to concerns raised by the Privacy Commissioner of the Province of Ontario.

^{11.} In addition, artificial intelligence algorithms used in e-commerce have been in violation of US antidiscrimination laws, so the issues extend beyond privacy.

Facilitating Labor Mobility and Trade in Goods and Services

The need for professionals and skilled workers to cross North American borders has increased steadily as a result of the ongoing deepening of North American supply chains. NAFTA must be updated to facilitate this movement of people. NAFTA special visas facilitate only certain types of activities; work permits are required for others. NAFTA's "positive list" approach (a list of activities for which travel is permitted) presents further barriers to professionals. Moves to facilitate cross-border business should include a review of NAFTA Chapter 16 (on temporary entry for businesspeople) with a view to reducing restrictions. Serious consideration should be given to adopting a negative list approach, like the one included in CETA (a list of activities for which travel is not permitted). Credential recognition of professions should also be revisited, as the professional services that are recognized are very narrowly defined. The CETA provision for mutual recognition provides a potential model. Further opportunities for trade facilitation lie in facilitating goods shipments through the streamlining of customs clearance procedures. As both Canada and the United States have worked for years on joint action plans to reduce border barriers and both have signed the World Trade Organization (WTO) Trade Facilitation Agreement, consideration should be given to integrating similar provisions into a modernized agreement.

SAFEGUARDING CANADIAN INTERESTS

A revised NAFTA should address various Canadian concerns, particularly the scope and operation of dispute settlement mechanisms, government procurement, the Jones Act, and market access concerns such as country of origin labeling (COOL). Some of the tactics used by the Trump administration to advance its "America First" job-creating agenda are of particular concern.

Preserving Binational Dispute Settlement Mechanisms

NAFTA provides for three types of dispute settlement mechanisms. Chapter 11 deals with investor-state dispute settlement (ISDS). Chapter 19 deals with judicial review (whether a country implemented its own laws correctly); it is typically applied to antidumping and countervailing duties calculated by the US Department of Commerce. Chapter 20 deals with state-to-state disputes; it is rarely used.

Chapter 11 was a valuable addition to NAFTA, but could be improved upon. It has been criticized for the lack of independence of its panelists, the weak quality and consistency of panel decisions, and the lack of an appeal process. CETA addresses these criticisms by establishing, among other things, a standing dispute settlement tribunal as well as an appellate body. A modernized NAFTA would benefit from adopting these and other ISDS-related CETA innovations.

The relevance of Chapter 19 has increased in the wake of a series of recent actions against Canada, including allegations of illegal subsidies brought by Boeing against Bombardier and similar allegations against the Canadian softwood lumber industry. These and other cases arise out of US Department of Commerce determinations of dumping or illegal subsidies. Unfortunately, the law and process through which the Department of Commerce arrives at these determinations are often opaque, factually incorrect, and heavily biased against Canadian firms. For these reasons, Canada has a strong interest in strengthening Chapter 19.

The US International Trade Commission (ITC) has been subject to the same criticisms as the Department of Commerce. In addition, the ITC is criticized for its handling of cases involving infringement of US intellectual property by a foreign company. For example, the ITC is twice as likely as a US domestic court to rule in favor of a US patent holder, and ITC remedies go beyond those offered by US domestic law.¹² The ITC has been expanding the scope of patent and copyright investigations in a way that has adversely affected Canadian interests.¹³ A modernized NAFTA would limit ITC remedies against Canadian firms. While strong remedies are needed in dealing with China, they are not needed in dealing with Canada.

Section 232(b) of the Trade Expansion Act of 1962 is used to address national security concerns associated with imports. The Trump administration is increasingly using Section 232(b) investigations as a trade policy tool. The United States is concerned that the massive Chinese industrial overcapacity created through Chinese government subsidies poses a potential threat to the US steel industry and a realized threat to the US aluminum industry. Canada is being caught in the crossfire between the United States and China. Modernizing NAFTA could build on the long history of US–Canada cooperation on steel issues by providing an exemption from Section 232(b)-imposed trade sanctions.

Opening Up Government Procurement

NAFTA renegotiation provides an opportunity to open government procurement markets across North America. Both Canada and the United States have signed the WTO Government Procurement Agreement (WTOGPA); Mexico has not, which helps explain why access to government procurement in NAFTA is more restrictive than in the WTO.

In 2010 Canada and the United States agreed to exempt Canada from certain Buy American provisions and considered the possibility of a long-term agreement; there has been no follow-through since then. While Canadian companies are mostly exempt from the Buy American Act, Canada's access to transit-related projects remains limited. In a global context in which China is emerging as a major transit-related supplier as a result of generous subsidies and demand from very large public sector projects, it is time to think Buy North American. The North American reality is a bewildering thicket of agreements at various levels of government. Municipalities and off-balance-sheet entities such as Canada's crown corporations are not covered. This fragmentation makes it easy to avoid government procurement commitments. NAFTA renegotiation could provide an opportunity for Canada and the United States to open government procurement markets further, possibly using CETA as a model for creating more favorable access. If such changes cannot be incorporated into NAFTA because Mexico has yet to sign the WTO Government Procurement Agreement, Canada and the US should adopt a supplementary bilateral agreement.

An example illustrates the potential for improvement. The USTR has criticized the local content requirements used by Hydro-Quebec, a government corporation, in a wind power project. But Hydro-Quebec is not covered by any of Canada's procurement agreements with the United States, and the United States uses its own domestic content requirements for transit-related projects under the Buy America Act. Canada would like to see the scope of government procurement extended to include permanent waivers to Buy America provisions covering transit-related projects and iron and steel domestic content requirements. It would also like to extend coverage to states, regions, and municipalities, because doing so would increase competition for local infrastructure contracts and increase international market opportunities for North American suppliers.

^{12.} ITC remedies include embargoes on imports. Under US domestic law, a firm cannot typically exclude a rival from entry without first being required to seek much more limited remedies. For discussions of the ITC, see Scott Morton and Shapiro (2015), Bultman (2017), and the Department of Commerce criticism of the ITC noted in footnote 5 above.

^{13.} See, for example, "Certain Potassium Chloride Powder Products," ITC Notice 337-TA-1013.

Modifying US Legislation Protecting US Shipping between US Ports

The Merchant Marine Act of 1920 (known as the Jones Act) requires that all ships transporting goods between US ports be built by, owned, and operated by Americans. The blatantly protectionist law affects Canadian interests in shipping on the Great Lakes.

Canada has argued that it should be excluded from the act or be designated a permitted ship builder. NAFTA renegotiation should at least update this outdated law, possibly by removing its applicability to NAFTA countries (see chapter 5 by Gary Clyde Hufbauer and Euijin Jung in this volume).

Maintaining Market Access for Canadian Beef and Pork

The United States introduced COOL requirements in 2009, as part of the 2008 Farm Act; they apply to a wide range of meats and fresh vegetables and fruit. Animals designated as having originated in the United States have to be born, raised, and slaughtered there.

COOL's protectionist impact on Canadian imports is particularly damaging to beef and pork sales. Canada complained to the WTO, where both a dispute settlement panel and the appellate body ruled that the United States violated its WTO obligations. US authorities enforced the ruling in 2015, but in 2017 two states (Wyoming and South Dakota) moved toward reinstating such labeling for beef products sold there. In a NAFTA renegotiation, Canada could demand that the US government take measures to block reintroduction of this trade barrier (see chapter 5).

ADDRESSING US CONCERNS

Canadian negotiators have an opportunity to address the US administration's reported desire to create jobs and promote growth. One of the top areas of US focus is the revision of rules of origin, in order to increase production within the United States. Indeed, the United States has threatened to replace or augment NAFTA rules of origin with US rules. Canada's supply management policy is another area of US complaint that could be addressed in a way that increases US exports to Canada. Reforming customs treatment of online shopping could also increase US exports and jobs. Caution is necessary, however, to ensure that policy choices align with the realities of North American value chains.

Bargaining and mutual concessions are possible in two high-profile and contentious areas: revising rules of origin and improving supply management. Concessions by both sides would improve the functioning of both economies, save jobs that could be lost in a standoff, and improve prospects for job creation.

Revising Rules of Origin

NAFTA's rules of origin are very complex and subject to widespread complaints that they raise transactions costs to the extent that numerous producers find paying the most-favored-nation (MFN) tariff a less costly and resource-consuming alternative. Under NAFTA, 62.5 percent of a North American–made vehicle must originate in NAFTA countries. Rules of origin are also important in the energy sector, where crude oil shipments containing diluents sourced outside of the NAFTA area can be subjected to tariffs rather than exported duty free.

Renegotiation of NAFTA could adopt rules of origin for crude oil that were negotiated in the TPP, in which diluent accounts for no more than 40 percent of volume. Any move to increase rules of origin in automobiles to the advantage of US producers would have mixed implications for Canada. Initially, the impact would be negative; in the longer term, the effect would be to reduce foreign competition. The arguments for North American advantages look compelling, but they overlook the realities of competing in global markets. It is likely that anticompetitiveness measures in North America would have negative impacts on global markets and would not increase the competitive positions of exporters or of North American producers in world markets.

Improving Supply Management

US agriculture has been a big winner from NAFTA (see chapter 8 by Cullen Hendrix in this volume). Canada made major concessions in the original NAFTA/Canada-US Free Trade Agreement (CUSFTA) negotiations in order to protect its agricultural marketing boards. Even so, Canada could make goodwill concessions in the NAFTA renegotiation in this area.

Canada's dairy and poultry industries have long been protected by the supply management regime. Canada prices milk based on intended usage, imposes high tariffs on ultrafiltered milk (a protein liquid concentrate used to make cheese), and determines how much milk dairy farmers can produce. This protectionist regime, kept in place by a powerful political lobby, makes it difficult for Canadian producers to access foreign markets. It also exposes Canadian consumers to high milk prices: In 2012 the average price for four liters of milk was \$6.48, compared with \$3.50 in US cities. In 2012 Canada had about 13,000 dairy farms, half of which were located in the province of Quebec, making them a source of sensitivity in Canadian politics (Findlay 2012).

The system is vulnerable to charges by US lobby groups that Canadian policies protect the Canadian market from US exports and therefore destroy American jobs. Canada's room for response is limited by concessions already made to other trade partners in the CETA and TPP negotiations. Market access concessions to Europeans in the CETA negotiations included opening 4 percent of Canadian cheese production (more than 17,000 tons) to European firms. In the TPP negotiations, Canada offered to increase tariff rate quotas gradually over 10–20 years for specified milk products, cheese, eggs, and poultry products (Conference Board of Canada 2017). Refusal to make comparable changes in NAFTA is not an option. Adjustment assistance will also be required for the Canadian industry, something that was already agreed to in the context of the concessions made in CETA and the offer of concessions in the TPP.

Increasing the Threshold for Customs, Duties, and Taxes on Cross-Border Shipments

Canada's levels of value below which international shipments are exempted from customs procedures, duties, and taxes are out of step with its NAFTA partners. The current threshold (C\$20) is one of the lowest in the world. In comparison, the threshold is US\$800 in the United States and US\$300 in Mexico on postal shipments.

Significant benefits could be realized from raising the threshold—not least to taxpayers, given the costs to the government of collecting the duties and taxes (McDaniel, Shropp, and Latipov 2016). Large retailers have resisted change, arguing that it would cost them customers; critics argue that these enterprises have failed to update their business models to account for changing consumer demands. Overlooked are the interests of SMEs, which must become more active in cross-border commerce: The low threshold forces them to pay more than their international competitors do for business inputs. This area is one in which Canada could make concessions to its partners while aiding its own e-commerce and SMEs, which produce the majority of Canadian jobs.

Resolving the Perennial Disputes over Softwood Lumber

These cases illustrate issue areas in which changes in Canadian policy could improve economic efficiency and create jobs in both Canada and the United States. They are logical components of what could be a "quick" negotiation. Other components include an e-commerce chapter, which would be valuable to both countries and to large corporations such as Google and Amazon.

In return, Canada could require concessions on government procurement and antidumping and countervailing duties, which could include an agreed path to resolve the perennial disputes over softwood lumber. Negotiators should aim for a permanent solution, through negotiation that is separate from the main agreement, for reasons outlined below. Should there be temptation to push for quick fixes on such issues as intellectual property or the Chapter 19 panels, the negotiations would likely drag on for years.

Chapter 19 is particularly significant for its use in addressing the softwood lumber dispute. The US market is Canada's most important market for lumber exports (although some diversification to China and other markets has occurred in the past 20 years) and one with a sectoral trade surplus. The core trade issue for American producers is the prices their Canadian competitors pay for their wood. In many parts of Canada, lumber is sourced from public (crown) lands, and provincial governments rather than market forces determine prices (stumpage fees). US complainants allege that Canadian imports are subsidized, giving them an unfair advantage in the US market.

For decades, long-running disputes have been resolved by agreements that establish export charges or quota limits on Canadian exports when market prices fall below established levels. The latest softwood lumber agreement expired in October 2016. In subsequent negotiations the United States sought a market share quota for Canadian exports, while Canada sought to reduce export charges.

When no deal was reached, the US lumber industry exercised its rights to file charges of dumping and subsidies with the US International Trade Commission and the Department of Commerce. Antidumping and countervailing duties have now been temporarily imposed and a final determination is due in September 2017.

Canada can invoke a Chapter 19 panel review to challenge the determination. Chapter 19 was created as part of a series of complex compromises in the CUSFTA negotiations. Canada "paid" for the right to Chapter 19 challenges by, among other things, agreeing to continental free trade in energy. US lumber interests have lobbied for Chapter 19 removal since the system was incorporated into NAFTA, but Canada will never agree to this.

It is in Canada's interest to find a long-term solution to the softwood lumber issue, but institutional differences are at the root of the disagreement. Another Chapter 19 panel review is the most obvious option, but it could exacerbate political tensions and is unlikely to produce a timely decision on the penalties Canadians have already paid.

Canada could seek judicial review in the US Court of International Trade or at the WTO, but neither is likely to provide a clear-cut solution. Some experts predict the US Court's judicial review would likely defer to Department of Commerce subsidy and dumping findings (Johnson 2017). WTO findings would not legally bind the US government.

The remaining option is to recognize the institutional differences and shift the focus away from antidumping or countervailing duties to a permanent negotiated settlement outside of NAFTA. Such an approach could fall victim to special interests, but it could address the institutional differences if Canadian provinces were willing to revise stumpage practices to allow the greater play of market forces. This option may seem politically unpalatable, but it may be the only permanent solution.

CONCLUSION

The goal of NAFTA renegotiation should be to make North America more competitive, by building on the cross-border value chains in energy and manufacturing that have developed since NAFTA was adopted 25 years ago. Focusing narrowly on the trade balance, by which measure Canada is a big loser from NAFTA, is futile. Instead, the perspective should be much broader, focusing on promoting innovation and competitive-ness in today's knowledge-driven world as a common interest shared by all three NAFTA parties. Achieving this goal will require adding a new chapter on e-commerce and updating intellectual property issues. Incorporating forward-looking features agreed to in CETA and the TPP negotiations could help reconcile trade policy interests between Canada and the United States.

REFERENCES

Boldrine, Michele, and David K. Levine. 2013. The Case against Patents. *Journal of Economic Perspectives* 27: 3-22.

Bultman, Matthew. 2017. ITC Patent Cases Rebound to Reach 5-Year High. New York: Law360.

Caliendo, Lorenzo, and Fernando Parro. 2015. Estimates of the Trade and Welfare Effects of NAFTA. *Review of Economic Studies* 82: 1-44.

Cohen, Lauren, Umit G. Gurun, and Scott Kominers. 2016. The Growing Problem of Patent Trolling. *Science* 352: 521-22.

Conference Board of Canada. 2017. NAFTA 2.0: Opportunities for Canada. Ottawa.

Findlay, Martha Hall. 2012. Supply Management: Problems, Politics—and Possibilities. *University of Calgary SPP Research Paper* 5, no. 19.

FTC (Federal Trade Commission). 2011. *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*. Washington: Government Printing Office.

Galasso, Alberto, and Mark Schankerman. 2015. Patents and Cumulative Innovation: Causal Evidence from the Courts. *Quarterly Journal of Economics* 130: 317–69.

Hall, H. Bronwyn, Christian Helmers, and Georg von Graevenitz. 2015. *Technology Entry in the Presence of Patent Thickets*. NBER Working Paper 21455. Cambridge, MA: National Bureau of Economic Research.

Jaffe, Adam B. 2000. The US Patent System in Transition: Policy Innovation and the Innovation Process. *Research Policy* 29: 531-57.

Johnson, Jon. 2017. *Return of the Softwood Lumber Dispute (Part V)*. Intelligence Memo (May 25). C. D. Howe Institute. Available at www.cdhowe.org/intelligence-memos/jon-johnson-return-softwood-lumber-dispute-part-v.

Kapczynski, Amy, Chan Park, and Bhaven Sampat. 2012. Polymorphs and Prodrugs and Salts (Oh My!): An Empirical Analysis of "Secondary" Pharmaceutical Patents. *PLoS ONE* 7: e49470.

Kesselheim, S. Aaron, Jerry Avorn, and Ameet Sarpatwari. 2016. The High Cost of Prescription Drugs in the United States: Origins and Prospects for Reform. *Journal of the American Medical Association* 316: 858-71.

Landes, M. William, and Richard A. Posner. 2004. *The Political Economy of Intellectual Property Law*. Washington: AEI-Brookings Joint Center for Regulatory Studies.

Lerner, Josh. 2000. *150 Years of Patent Protection*. NBER Working Paper 7478. Cambridge, MA: National Bureau of Economic Research.

McDaniel, Christine, Simon Shropp, and Olim Latipov. 2016. *Rights of Passage: The Economic Effects of Raising the DMT Threshold in Canada.* E-Brief (June 23). C.D. Howe Institute. Available at www.cdhowe.org/public-policy-research/rights-passage-economic-effects-raising-dmt-threshold-canada.

Melitz, J. Marc, and Daniel Trefler. 2012. Gains from Trade when Firms Matter. *Journal of Economic Perspectives* 26: 91-118.

Moser, Petra. 2013. Patents and Innovation: Evidence from Economic History. *Journal of Economic Perspectives* 27: 23–44.

Scott Morton, Fiona, and Carl Shapiro. 2015. *Patent Assertions: Are We Any Closer to Aligning Reward to Contribution?* NBER Working Paper 21678. Cambridge, MA: National Bureau of Economic Research.

Varian, R. Hal. 2005. Copying and Copyright. Journal of Economic Perspectives 19: 121-138.

Williams, L. Heidi. 2013. Intellectual Property Rights and Innovation: Evidence from the Human Genome. *Journal of Political Economy* 121: 1–27.