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# Streamlining of NAFTA Tariffs: Benefits for Washington State

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*A key element of the prosperity agenda of the **Security and Prosperity Partnership of North America** is a commitment of the NAFTA partners to liberalize NAFTA rules of origin and to enact minor modifications to third-country tariffs in cases where such changes will increase competitiveness. A recent study for the province of Alberta suggested several criteria for enacting tariff “streamlining” and calculated annual benefit of CAN\$ 80 million for exporters located in Alberta. This study applies the Alberta methodology to examine the results of implementing similar modifications to NAFTA tariffs for exports from Washington and California to Canada. We also identify the impediments to tariff streamlining such as inconsistent tariff line classifications at the 8 and 10-digit level. These inconsistencies point to benefits from adopting comparable intra-NAFTA tariff codes down to the 10-digit level.*

## 1. INTRODUCTION

The *Security and Prosperity Partnership of North America* (SPP) is an initiative launched in 2005 by the leaders of Canada, Mexico, and the United States to promote security and prosperity through cooperation and sharing of information. One component of the prosperity agenda is a Working Group on the movement of goods which was created to pursue the following objectives:

... lower the transaction costs of trade in goods by liberalizing the requirements for obtaining duty-free treatment under NAFTA, including through the reduction of “rules of origin” costs on goods traded between our countries. Each country should have in place procedures to allow speedy implementation of rules of origin modifications. Increase competitiveness by exploring additional supply chain options, such as by rationalizing minor

differences in external tariffs, consistent with multilateral negotiation strategies.

(Source: [http://www.spp.gov/prosperity\\_working/index.asp?dName=prosperity\\_working](http://www.spp.gov/prosperity_working/index.asp?dName=prosperity_working))

This goal involves both the liberalization of NAFTA rules of origin and relatively minor “rationalization” of NAFTA third-country tariffs in cases where the differences between the NAFTA partners’ third-country tariff rates are small.

Rules of origin are a feature of free trade areas such as NAFTA but are not needed within a customs union such as exists within the European Union. Members of a customs union impose a common external tariff on non-members of the customs union, but members of a free trade area are free to set their own tariffs on imports from countries outside of the free trade area. If differences in tariffs are large enough,

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non-members of a free trade area might have an incentive to channel exports to all members of the free trade area through the lowest-tariff country. To eliminate this incentive, free trade areas establish procedures to prevent the routing of non-member exports through a “back door” route via the lowest-tariff partner. In the case of NAFTA, rules of origin are used to establish whether a good originates within North America and is thus able to benefit from preferential NAFTA tariff rates at the borders between the NAFTA partners. Complying with rules of origin is costly for exporters, however, and under the SPP, NAFTA countries are seeking to reduce the burden of rules of origin in order to enhance the competitiveness of North American producers.

Given that the NAFTA countries are pursuing the objective of liberalizing or eliminating rules of origin, policy makers on both sides of the border need to measure the potential impact of liberalizing rules of origin and rationalizing NAFTA tariffs. Such an analysis of tariff rationalization was recently conducted for the province of Alberta by Ballantyne, Hoffman, and Mirus (2004), who proposed an agenda for tariff rationalization which they refer to as a “streamlining” of NAFTA tariffs. The Ballantyne et al study found that a conservative estimate of the savings for Alberta was CAN\$ 80 million per year based on trade patterns from 2002. They argued that a similar

benefit would accrue to U.S. partners so that the tariff modifications enhance the competitiveness of firms on both sides of the Canada-U.S. border. The authors also noted that these benefits can be attained through administrative agreements and therefore would not require high-level trade negotiations that could have the potential to become highly-politicized.

The primary goal of this paper is to apply the Ballantyne et al analysis to the case of Washington State. An additional motivation for the analysis conducted in this study is the focus on a perimeter approach to border policy found in the policy documents of both the SPP and the Perimeter Clearance Coalition. For goods, the core idea of the 2002 version of the Perimeter Clearance Strategy is to “[deal] with goods at point of first arrival” in North America. The customs authority of the receiving country would then share information with a partner country if the good is in transit. This coordination and sharing of information provides an additional opportunity to streamline NAFTA tariffs whenever North American origin can be conferred at the first point of entry to the continent. This study will discuss the complementarities between the goals of tariff streamlining and a perimeter clearance strategy.

2. STUDY METHODOLOGY

NAFTA-related initiatives to liberalize rules of origin have been implemented

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in four batches: on January 1 of 2003 and 2005 and on July 1 of 2005 and 2006. These changes to rules of origin have typically involved removing regional value content restrictions or reducing the degree of tariff classification transformation needed to qualify as originating in North America. For example, among the liberalizations implemented on July 1, 2006, was the removal of restrictions on the use of non-originating printed circuit boards in televisions and monitors. These liberalizations have typically been initiated based on suggestions solicited from industry.

To date, there has been almost no *ex post* analysis of the qualitative and quantitative impacts of liberalizing rules of origin. Nevertheless, the agenda continues to move forward. For example, an August 2007 *Globe and Mail* article quoted Canadian International Trade Minister David Emerson who indicated that “a key topic” of the August 2007 NAFTA Free Trade Commission would be “more talk on changing rules of origin.” Minister Emerson said that these changes would “cover billions of dollars in trade, so it’s actually a very material initiative that most people never think of but it’s of fundamental importance and will greatly enhance the scope of NAFTA.” The fact that there is political will to continue the process of liberalizing rules of origin reveals the benefits that the NAFTA governments expect to derive from the process.

While the SPP raises the possibility of harmonization of third-country tariffs in cases where existing differences are minor, this avenue has not been pursued as aggressively as the liberalization of rules of origin. This paper provides some information regarding the potential to harmonize certain third country tariffs in cases where the United States already charges low or zero tariffs in the general system of preferences. In addition, this study takes the first component of a methodology proposed by Ballantyne et al and applies this component to the case of trade between Washington State and Canada. Ballantyne et al suggested that there are three cases in which Canadian and U.S. third-country tariffs could be streamlined for a particular Harmonized Tariff Schedule (HTS) code:

- (i) Canada and the United States already apply 0 percent tariffs for non-NAFTA countries,
- (ii) Either Canada and/or the United States applies a tariff of no more than 5 percent for non-NAFTA countries,
- (iii) Situation (ii) does not apply but the Canadian and U.S. non-NAFTA tariff rates are within 2 percentage points of each other.

The conditions outlined in these three cases are motivated by the ostensible goal of rules of origin: to prevent goods from non-NAFTA countries from entering one NAFTA country via a NAFTA partner in order to benefit

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from lower third-country tariff rates in the partner country. In case (i) there is no incentive whatsoever to circumvent third-country tariffs by entering the United States via a NAFTA partner. In cases (ii) and (iii) there is a small incentive to use the “back door” entry approach, but the benefit is sufficiently small that it is unlikely to motivate a trade routing decision.

Following Ballantyne et al, we examine the estimated benefits of their first case of proposed tariff streamlining. To accomplish this, we begin by obtaining data on exports from Washington to Canada at the 6-digit HS level. We use the 6-digit level of detail rather than the more precise 8 or 10-digit level because HS codes are only harmonized between Canada and the United States at the

**Table 1: Sources of U.S. Tariff Revenues of HS Chapter**

Chapter Rank	HS Code	Calculated Duties	Chapter Share	Cumulative Share
1	62	\$4,389,441,874	17.4%	17.4%
2	61	\$4,285,014,712	17.0%	34.5%
3	87	\$2,883,414,732	11.5%	45.9%
4	64	\$1,873,663,256	7.4%	53.4%
5	85	\$1,681,935,892	6.7%	60.1%
6	84	\$1,161,471,270	4.6%	64.7%
7	42	\$997,761,085	4.0%	68.7%
8	39	\$769,535,433	3.1%	71.7%
9	63	\$678,851,851	2.7%	74.4%
10	94	\$407,576,790	1.6%	76.0%
11	22	\$319,121,030	1.3%	77.3%
12	29	\$314,423,520	1.2%	78.5%
13	71	\$290,379,112	1.2%	79.7%
14	69	\$286,150,147	1.1%	80.8%
15	90	\$284,384,139	1.1%	82.0%
16	40	\$273,377,671	1.1%	83.1%
17	27	\$258,338,450	1.0%	84.1%
18	73	\$247,323,006	1.0%	85.1%
19	82	\$241,847,428	1.0%	86.0%
20	70	\$201,099,847	0.8%	86.8%
21-30	-	\$1,461,676,302	5.8%	92.6%
31-40	-	\$894,424,188	3.6%	96.2%
41-50	-	\$535,194,982	2.1%	98.3%
1-99	-	\$25,159,011,720	100%	100%

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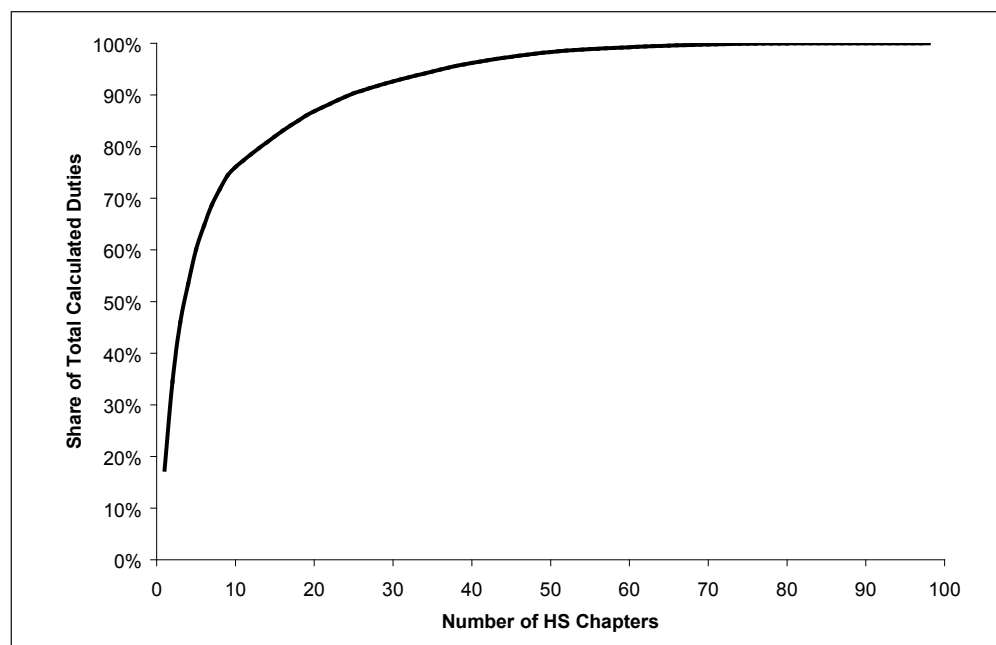
6-digit level. We first use third-country tariff data from the World Trade Organization to identify cases where rules of origin could be eliminated because both Canada and the United States already allow the HS6 category to enter duty free<sup>1</sup>. Existing estimates of the resource costs of rules of origin compliance<sup>2</sup> are then used to determine the competitiveness-enhancing benefits of the tariff streamlining.

### 3. THE STRUCTURE OF TARIFFS IN U.S. TRADE

The benefits of liberalizing rules of origin and streamlining tariffs need to be compared to the costs of these measures. One such cost is the tariff revenue already forgone in cases where both countries have most favored

nation tariffs that are set to zero. A rough measure of the revenue yielded by the current U.S. tariff system is provided by Table 1. This table is based on total value of duties for 2006 as calculated by the on-line Dataweb trade statistics from the web site of the U.S. International Trade Commission<sup>3</sup>. The calculated duties were obtained and sorted for the 99 HS chapters. Table 1 shows that just four chapters accounted for over half of calculated U.S. customs duties, while the top 30 chapters yielded over 90 percent of tariff revenue. Figure 1 plots the cumulative share of tariffs yielded by successive sorted HS chapters. The results in this figure suggest that most tariffs are low and, as a result, the opportunity cost of zero tariffs is not high.

Figure 1: Cumulative Share of U.S. Tariff Revenues



<sup>1</sup> We will use the common term “most favored nation tariffs” to refer to the normal tariffs paid by countries that do not benefit from the NAFTA tariff preference. In the United States, the term “most favored nation tariff” was recently replaced by the term “general tariff” that applies to countries having “normal trade relations” with the United States but not benefiting from a bilateral trade agreement. As of November 2007, the only countries that do not benefit from either normal trade relations or a bilateral trade agreement with the United States are Cuba and North Korea.

<sup>2</sup> Compliance cost figures are cited by Ballantyne et al and also available from Kunimoto and Sawchuk (2005).

<sup>3</sup> These data can be accessed at <http://dataweb.usitc.gov/>.

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The results presented in Table 1 and Figure 1 suggest that many HS chapters provide very little tariff revenue. Indeed, in 2006 four HS chapters generated no tariff revenue at all while calculated tariffs were under one million dollars for an additional 11 HS chapters. These chapters, and perhaps others generating minimal tariff revenue, are certainly candidates for elimination of rules of origin because tariff revenues and most favored nation tariff rates are so low that there is little or no concern about entry of U.S. imports through Canada. The next section of this paper examines the nature of Washington State exports to Canada in order to determine how much trade is a candidate for tariff streamlining through elimination of rules of origin.

4. A DESCRIPTION OF TRADE  
BETWEEN WASHINGTON STATE  
AND CANADA

According to origin of movement state export data from the U.S. Census Bureau, the total value of exports from the state of Washington to Canada was \$6.2 billion in 2006<sup>4</sup>. The simplest

strategy for tariff streamlining would involve the removal of rules of origin for any 6-digit HS code where both Canada and the United States charge most favored nation tariffs of zero. Rules of origin are non-binding constraints for Canada-U.S. trade in this case because there is no incentive for third-country imports to circumvent higher tariffs in either Canada or the United States simply by entering through the country with the lower third-country tariffs. We used 2006 tariff schedules for Canada and the United States and identified 1,464 6-digit HS codes with tariffs of zero for all lines within these codes<sup>5</sup>. Mexico is not included in the analysis of this paper because the number of HS6 codes where all three NAFTA partners have a zero external tariff is very small.

The properties of the 1,464 6-digit HS codes with zero tariffs in both countries are examined in Table 2. These “0/0” HS codes are grouped into six broad categories based on the industrial sector. For example, we found that electrical equipment accounts for just 5 percent of the 0/0 HS6 codes, while

<sup>4</sup> The origin of movement data released by the U.S. Census Bureau are intended to capture the state where the shipment of goods originated rather than the state where the goods left the United States.

<sup>5</sup> Canada and the United States frequently use 8-digit and 10-digit categories within a 6-digit category. As a result, third-country tariffs might be zero for just a portion of a 6-digit HS code.

Table 2: Sectoral Description of Free 6-digit HS Categories

Category	Chapters	% of all lines	% Free
Agriculture	1-24	13%	26%
Energy Products	25-39	20%	27%
Other Commodities	40-83	38%	27%
Machinery & Equipment	84	15%	42%
Electrical Equipment	85	5%	27%
Other Manufactured Products	86-97	9%	24%

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commodities other than agricultural and energy commodities were 38 percent of the 1,464 HS codes identified as candidates for streamlining. The fraction of the total HS codes that are free for Canada and the United States is constant for most of these industrial sectors with the exception of Chapter 84, where the percentage of free HS6 codes is much higher because of the sectoral customs union in computers and computer parts built into the original NAFTA agreement.

To measure the potential benefits of streamlining rules of origin for trade between Washington and Canada we first find the total amount of exports from Washington to Canada in the 1,464 free/free HS6 codes. These HS codes themselves account for almost

40 percent of the total amount of exports from Washington to Canada and have a dollar value of \$2.45 billion. This amount suggests that significant benefits could be obtained for trade between Washington state and Canada even if the scope of tariff streamlining is relatively unambitious and limited in scope to just a small set of high-value export categories.

While it is impractical to describe all of the 1,464 tariffs that are zero for Canada and the United States, Table 3 describes the largest 25 HS6 codes for Washington-Canada trade and identifies the 16 of these 25 HS6 codes where *both* Canada and the United States apply third-country tariffs equal to zero. In contrast, Table 4 illustrates the codes out of the top 25 where at least

**Table 3: Washington State Exports to Canada - Top 25 6-digit HS Products**

Rank	HS Code	Dollar Amount	Rank	HS Code	Dollar Amount
1	880240	\$682,477,746	14 *	160411	\$55,871,874
2 *	271019	\$679,493,038	15 *	080920	\$54,715,318
3 *	870120	\$218,243,200	16 *	392330	\$50,502,144
4 *	870423	\$212,536,760	17 *	760612	\$50,178,966
5	721420	\$114,899,438	18	851750	\$44,828,959
6	880330	\$109,353,434	19	950410	\$44,509,829
7	950490	101,444,160	20 *	842720	\$43,134,024
8 *	080810	\$98,586,732	21 *	761290	\$42,956,680
9	852812	\$84,503,341	22 *	852990	\$42,801,482
10 *	760120	\$73,408,501	23 *	200410	\$39,518,023
11	260800	\$67,282,831	24	843149	\$39,504,952
12 *	890392	\$64,286,104	25 *	190410	\$35,449,023
13 *	870324	\$62,817,772			

*\*Indicates code for which both countries apply third-country tariff of 0.*

**Table 4: Washington State Exports to Canada - Top 25 6-digit HS Products:  
Non-Zero MFN Tariffs and Multiple 6-digit lines**

HS Code	Canada		United States	
	Tariff Lines	Min/Max Tariff (%)	Tariff Lines	Min/Max Tariff (%)
271019	5	0 / 8	11	5.8 / 7
870120	1	6	1	4
870423	1	6.1	1	25
080810	2	0 / 8.5	1	0
760120	19	0	3	0 / 2.6
890392	1	9.5	1	1.5
870324	1	6.8	1	2.5
160411	1	2	2	0 / 6
080920	6	0 / 6	1	0
392330	2	0 / 6.5	1	3
760612	2	0 / 3	2	3 / 6.5
842720	4	0 / 6	2	0
761290	2	6.5	2	0 / 5.7
852990	41	0	34	0 / 5
200410	1	6	2	6.4 / 8
190410	7	4 / 6	1	1.1

one of the two countries applies a non-zero third-country MFN tariff or where there are multiple and inconsistent 6-digit tariff “lines” within the 6-digit HS codes. In some cases Canada and the United States have the same number of tariff lines but different MFN tariff rates. An example is 870423 (diesel trucks weighing more than 20 metric tons) where the Canadian tariff is 6.1 percent and the U.S. tariff is 25 percent. An example of inconsistent tariff lines within a 6-digit category is the HS6 code 271019 (an “other” category within the broader subheading of petroleum oils) which has 5 separate tariff lines in

Canada and 11 lines in the United States. These inconsistencies are due to the fact that the two countries use inconsistent product definitions and tariff codes at the 8-digit level and this inconsistency precludes tariff streamlining in HS6 codes such as 271019.

## 5. BENEFITS OF TARIFF STREAMLINING FOR WASHINGTON STATE EXPORTS TO CANADA

To estimate the benefits of tariff streamlining for Alberta, Ballantyne et al applied a range of possible transaction-cost values (expressed as percentages of

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overall value of a shipment) to obtain a per-year cost of rules of origin for Alberta's exports that were candidates for tariff streamlining. The transaction costs used in the Alberta study were obtained from other research for free trade areas such as the EFTA and ranged in value from 0.25 percent to 2 percent per year. The benefit of tariff streamlining is that these costs can be eliminated. For Washington State exports to Canada, applying these two percentages as lower and upper bounds on transactions/compliance costs related to rules of origin yields annual savings in 2006 of between \$6.1 million and \$48.8 million per year. With the 4 percent discount rate used by Ballantyne et al, this translates into a savings of between \$153 million and \$1.22 billion in present value terms. It is worth noting that these benefits are associated with the tariff streamlining that would be most easily implemented, because these are for cases of 6-digit HS codes where neither Canada nor the United States applies MFN duties. No tariff revenue would be lost from these changes to rules of origin.

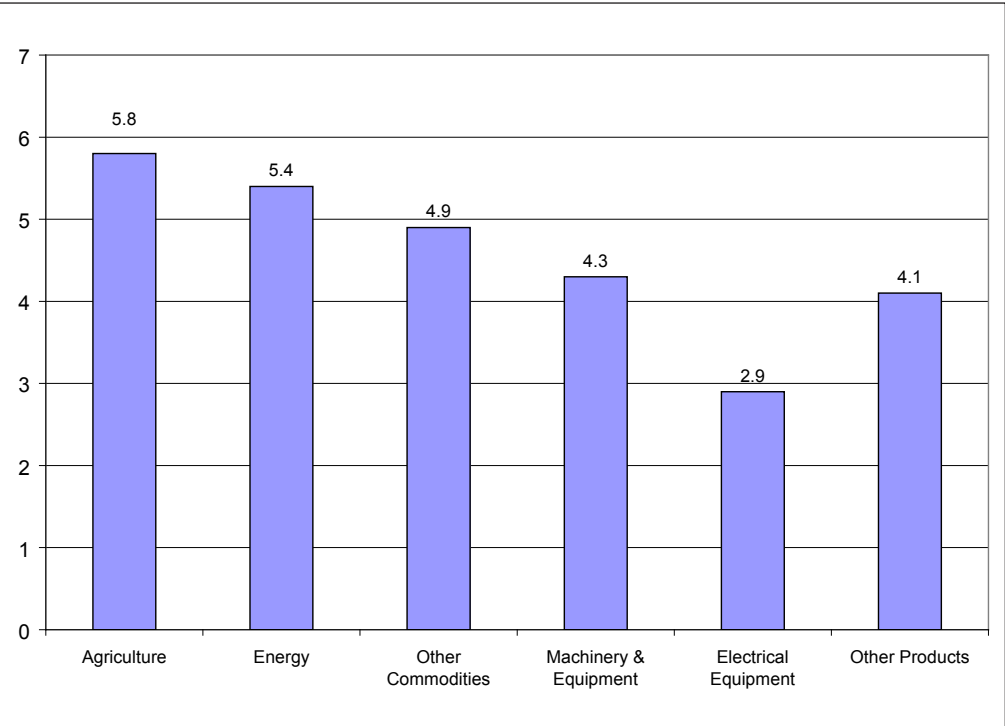
While these values for the benefits of tariff streamlining are significant even under the lowest percentage rate assumptions, it would be useful to refine the values in future work. One possible way to do this is to determine the restrictiveness of the rule of origin. The more complicated and constraining a rule of origin is, the more resources

will be expended to meet the rule. Some evidence of this effect is provided in the average restrictiveness column of Figure 2. For each of the 1,464 HS6 codes, we determined the value of the Estevadeordal (2000) rules-of-origin restrictiveness index. The values of this index range from 1 to 7, with higher values indicating a more restrictive rule. For example, a value of 6 indicates that a transformation between chapters of the HS code is needed while a value of 4 means that a transformation between headings within a chapter is necessary to establish North American origin. Work by Kunimoto and Sawchuk (2005) has shown that the utilization of NAFTA preferences tends to decline as rules of origin become more restrictive. This suggests that removing the rules of origin for the most restrictive rules would increase use of NAFTA preferences and encourage intra-NAFTA trade.

As shown in Figure 2, we find that restrictiveness levels are generally quite high for the items in the agricultural, energy, and commodity categories. For some agricultural categories such as live animals, the requirement of a chapter-level change simply reflects the fact that these items can't be "produced" from a mixture of originating and non-originating components. The restrictiveness level tends to be lower when manufactured goods are considered because of the greater ability to transform intermediate products or raw materials into a new manufactured item.

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Figure 2: Average Restrictiveness of Rules of Origin by Sector



One factor that could potentially reduce the benefits of tariff streamlining is the presence of a NAFTA “mini” customs union in computers and computer parts. This sectoral customs union is confined to Chapters 84 and 85 of the tariff schedule and we would expect no benefits from tariff streamlining for HS codes that are already part of the mini-union. To investigate the effect of this for Washington State, we recalculate the benefits of tariff streamlining with Chapters 84 and 85 excluded from the trade figures. This adjustment for the effect of the mini-union lowers the annual benefits of tariff streamlining from a range of \$6.1 - \$48.8 million

to \$5.1 - \$40.8 million. The reduction for Washington is less extreme than for other states such as California whose exports to Canada include a greater proportion of HS6 categories that are covered by the mini-union.

6. CONCLUSIONS

This study has identified several promising cases where simple changes to administrative rules would result in significant savings of transactions costs for the state of Washington. Removal of rules of origin requirements for a number of products would also allow border personal to shift some of their time from rules of origin verification to a focus on interdicting undesirable

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goods or individuals seeking entry to the United States. This ability to shift resources from low-value revenue collection tasks to higher-value security activities is one of the benefits of the perimeter approach to border security.

The benefits of tariff streamlining for Washington are significantly lower than those calculated by Ballantyne et al who found that just over CAN\$ 25 billion in trade would be liberalized under their three criteria. The vast majority of this amount – CAN\$ 23 billion – is from the Canada-U.S. zero MFN criterion also applied in this study for Washington State. Over half of the trade figure for Alberta (CAN\$ 14.4 billion) was derived from Alberta's exports of natural gas. Several factors account for our finding that the total amount of exports from Alberta that would benefit from proposed streamlining is greater than our corresponding amount for Washington:

- Ballantyne et al included a wider range of products with low tariffs.
- Alberta has a large proportion of its trade in a single commodity (natural gas) that meets the streamlining criteria.
- The volume of exports from Alberta to the United States is much larger than the volume of exports from Washington State to Canada.

The results of our analysis for Washington are sufficiently promising

to encourage further analysis of the potential U.S. benefits from tariff streamlining. It is worth noting that much of the benefit of tariff streamlining can be obtained by eliminating rules of origin for a few HS6 codes with large amounts of trade. In the case of Washington, the increase in benefits from examining the top 50 categories, versus just the top 25, was relatively modest: the range of estimated benefits extends from \$3.76 million to \$30.1 million rather than from \$3.2 million to \$25.8 million. On the other hand, perhaps the greatest benefits of NAFTA derive from the possibility of increased trade by smaller exporters dealing with less commonly traded goods. These exporters might not benefit if the elimination of rules of origin was limited to a few large categories.

In future work, we will also examine a wider range of MFN categories, an approach that appears promising given our finding that tariff revenues are largely derived from a relatively small number of tariff categories. Finally, we will investigate the benefits for other U.S. states with eleventh export flows to Canada. As shown in Table 5, Washington is ranked tenth among states in terms of exports to Canada (Washington is not one of the roughly 38 states that have Canada as their top export market). The results of this future analysis have the potential to point toward a fruitful new avenue for trade liberalization and enhanced prosperity

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**Table 5: Rank of States by Exports to Canada, 2006**

Rank	State	Exports	Rank	State	Exports
1	Michigan	23,794,064,614	28	Colorado	1,849,335,720
2	Unspecified	18,538,115,825	29	Arizona	1,841,227,759
3	Ohio	18,265,575,610	30	Louisiana	1,787,714,289
4	Texas	15,630,528,347	31	Oklahoma	1,716,650,338
5	California	14,194,028,221	32	Vermont	1,670,214,132
6	Illinois	12,332,757,035	33	Maryland	1,491,291,136
7	New York	12,225,961,099	34	Puerto Rico	1,387,530,482
8	Indiana	9,841,736,504	35	Arkansas	1,129,873,310
9	Pennsylvania	8,886,413,076	36	Mississippi	1,068,683,897
10	Tennessee	6,925,453,887	37	Nebraska	1,027,151,963
11	Washington	6,205,917,164	38	West Virginia	923,282,349
12	Kentucky	5,857,587,464	39	Maine	922,204,620
13	New Jersey	5,713,856,150	40	Utah	888,531,508
14	Wisconsin	5,446,924,974	41	North Dakota	726,737,792
15	North Carolina	5,379,008,696	42	Nevada	696,792,037
16	Missouri	4,818,171,600	43	Delaware	633,703,328
17	Georgia	4,706,549,260	44	NH	597,975,305
18	Minnesota	4,090,154,512	45	Idaho	561,323,984
19	Massachusetts	3,155,104,246	46	Rhode Island	548,178,866
20	South Carolina	3,151,955,223	47	Alaska	444,904,161
21	Iowa	3,065,278,684	48	South Dakota	438,180,037
22	Florida	2,992,233,765	49	Montana	433,532,268
23	Oregon	2,693,539,425	50	Wyoming	232,929,944
24	Virginia	2,635,557,781	51	New Mexico	194,284,677
25	Kansas	2,267,968,989	52	DC	25,861,148
26	Alabama	2,246,168,787	53	Hawaii	16,105,767
27	Connecticut	1,931,582,958	54	Virgin Islands	10,401,786

for the NAFTA countries. Security would also be enhanced as border agency resources can be switched from revenue collection and enforcement of rules of origin to security-related duties.

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