

## Modeling the Economic Effects of Raising the *De Minimis* Threshold in Canada

Olim Lapitov, Christine McDaniel and Simon Schropp\*

### Introduction

Imports of small-value items have traditionally been exempted from customs duties and taxes. This should be welcome in principle, since duties and customs procedures can distort market activity and cross-border trade, and impede the efficient allocation of resources internationally. From the importing government's view, such tax and duty exemptions also seem a sensible choice because costs relating to customs assessment and clearance procedures can easily outweigh the tax and duty revenue generated by these small-item imports.

As such, governments set a valuation ceiling for imports, below which no duty or tax is charged and the clearance procedures are minimal. This ceiling is referred to as the *de minimis* threshold, or DMT. The benefits of setting such a threshold at a reasonably high level relate to freer trade and fewer and less costly customs procedures for smaller shipments. An international agreement or a voluntary unilateral commitment to fairly high DMTs for entry of low-value imports<sup>1</sup> would seem like the natural outcome.

As often, however, things are not as straightforward in practice. Countries have not established binding international DMTs. The “International Convention on the Simplification and Harmonization of Customs Procedures (as amended)”, better known as the Revised Kyoto Convention, in which signatories affirmed their commitment to transparent, predictable and simple customs procedures and minimum necessary customs controls does not set any binding DMT for the Convention's signatories. Subsequently, the level of DMT is left to the discretion of each signatory.<sup>2</sup>

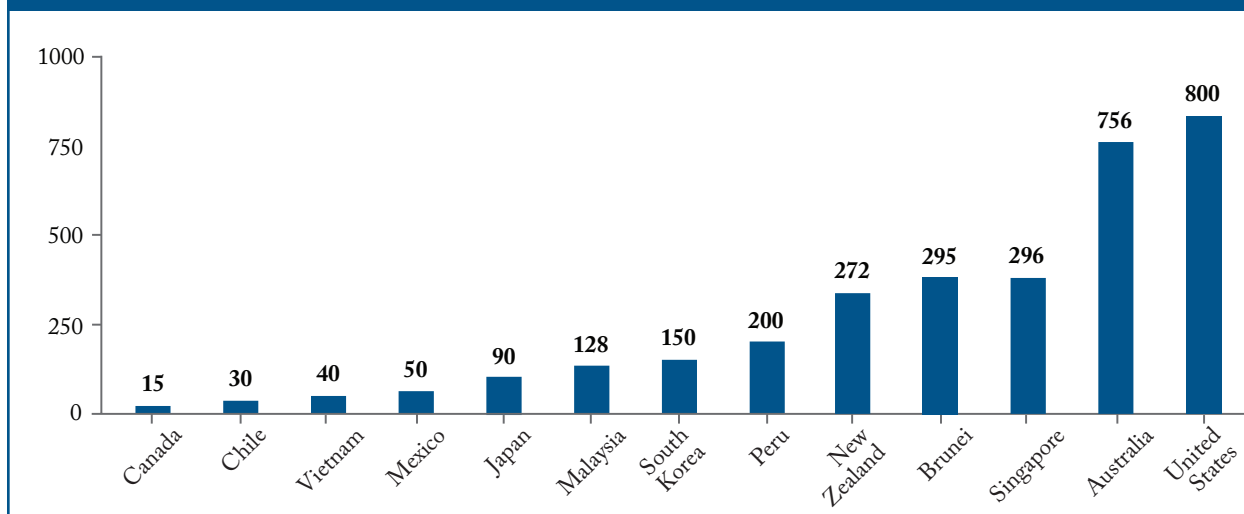
There is considerable heterogeneity in DMTs applied around the globe. Figure 1 shows the wide range of DMTs across members of the Trans-Pacific Partnership (TPP) region. For instance, the average DMT across the TPP region is US\$ 240, but ranges between US\$ 15 (Canada) to US\$ 800 (United States).<sup>3</sup>

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\* Olim Lapitov is an economist with Sidley Austin, LLP (Geneva); Christine McDaniel is a senior economist with Sidley Austin, LLP (Washington, DC) and corresponding author at [cmcdaniel@sidley.com](mailto:cmcdaniel@sidley.com); Simon Schropp is a managing economist with Sidley Austin, LLP (Washington, DC). All views are those of the authors and do not necessarily reflect the views of Sidley Austin or any of the firm's clients. The authors wish to thank eBay Canada, the Global Express Association, CD Howe Institute, and several reviewers for their very helpful comments. All errors are our own.

- 1 The ICC Customs Guideline defines “*de minimis*” as a valuation ceiling for goods, including documents and trade samples, below which no duty or tax is charged and clearance procedures, including data requirements, are minimal, available at <http://goo.gl/WpHBNm>.
- 2 Transitional Standard 4.13 of the Revised Kyoto Convention leaves it to every Member's customs administrations to specify its own DMT (“a minimum value or minimum amount of duties and taxes below which no duties and taxes will be collected”). See United Nations, Revised Kyoto Convention, World Customs Organization, 2006, available at <http://goo.gl/M3Kc0i>.
- 3 In February 2016, the US Congress passed legislation accepting an increase in DMT from US\$ 200 to US\$ 800.

### De Minimis Values across Countries (US\$)



Source: Global Expresses Association, “GEA Overview of *De Minimis* Regimes Worldwide,” April 2016. All figures in USD. The simple average is \$240, and the median is \$150.

The wide range in DMT levels around the globe reflects domestic interests and historical factors. From the point of view of domestic stakeholders, there are conflicting positions over the ideal DMT level:

- *Customs authorities* in importing countries may have a preference for higher DMT levels, which would free up resources and increase their ability to focus on high-risk shipments, including prohibited or dangerous items, and large scale trademark or copyright violations.
- *Domestic import-competing businesses* (mainly retailers) tend to favor low DMTs and claim that generous exemptions at the border put them at a disadvantage vis-à-vis foreign sellers, since the former may have to charge sales or value-added taxes even for small items while the latter are exempted and are able to “hitch a free ride.”<sup>4</sup>
- *Importers and foreign “e-tailers”* favor high DMTs because of the relatively high transaction costs in connection with the importation of low-value items. These groups see low DMTs as a barrier to trade, and claim that the high transaction costs (fees, delays, official procedures) and the high costs of product returns have an overall “chilling effect” on imports writ large, that is, a reluctance of domestic consumers to purchase internationally out of concern for any real or potential transaction costs they may incur when purchasing small-value items from abroad.
- *Small businesses* tend to favor higher DMTs, which facilitate lower fees, less paper work, less delay, and easier product returns. Small businesses that engage in cross border trade for supplies, intermediate inputs, and direct business-to-consumer commerce are at a material competitive disadvantage relative to the US competition because they incur duties, tax paperwork, brokerage fees, and delays for imports over \$20 while their US competition enjoys relatively hassle-free imports up to \$800.

<sup>4</sup> We consider the arguments of Canadian retailers in Box 1 below.

- *Express courier service providers* charged with the logistics of inbound parcels complain about the burdensome administrative tasks for low value parcels, which often require significant resources that are outside their core business.<sup>5</sup>
- *Consumer groups* point out that low DMTs disadvantage consumers that live far away from the border, because duties and charges are typically only levied on inbound parcels, while cross-border commuters that carry imported goods with them are exempted.
- *For large businesses*, the issue is less that of transaction costs of small-value items, but rather the backlog that a low DMT creates at the border for large-scale imports.<sup>6</sup>

Given these conflicting interests, the prospect of increasing the DMT can be controversial. Over the past few years, a discussion has emerged in Canada over increasing the level of DMT. With C\$ 20 (US\$ 19), Canada's DMT is among the lowest in the world, and the lowest of any industrialized country. Canada's DMT has not been raised in decades, meanwhile the internet and e-commerce (as well as m-commerce) have become prevalent.<sup>7</sup>

This paper reports the findings of an economic study aimed at assessing the economic effects of an increase of DMT on key Canadian stakeholders. In so doing, we hope to make an analytical contribution to the policy debate in Canada and other countries deliberating the DMT issue. Specifically, we address the following research questions:

1. What is the fiscal impact of an increase in DMT for the provincial and federal levels of the Government of Canada (the "GC")?
2. What are the direct economic costs and benefits to Canadian consumers? and
3. What are the direct economic costs and benefits to Canadian businesses, particularly small and medium businesses ("SMBs")?<sup>8</sup>

We apply standard economic techniques to estimate the direct economic effects as the economy moves from the actual the "actual" (the situation with the current DMT of C\$ 20) to a series of counterfactuals (but-for situations) in which the DMT in Canada is increased various levels, namely C\$ 80, C\$ 100, and C\$ 200.<sup>9</sup>

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5 Express courier positions have been noted in "Economic Competitiveness and Border Efficiency through Simplified Processing of Low-Value Shipments," Global Express Association, January 2016; and Express Delivery Services: Competitive Conditions Facing U.S.-based Firms in Foreign Markets, Inv. No. 332-456, USITC Publication 3678, April 2004, USITC. Similar concerns were expressed in our informational interviews with express couriers.

6 See for example, "Low duty minimums cause pain for online retailers", *The Globe and Mail*, Oct. 1, 2015, available at <http://www.theglobeandmail.com/report-on-business/small-business/sb-managing/low-duty-minimums-cause-pain-for-online-retailers/article26352022/>: "Both the Canadian and Ontario Chambers of Commerce said that the low *de minimis* level is taking up too many resources at the border and is slowing down the process. For domestic manufacturers, according to the Ontario Chamber, that means clogging the manufacturing supply chain".

7 Under the current system, duty and sales taxes apply to shipped products valued at C\$ 20 or more. The *de minimis* threshold in Canada is set by the Government of Canada through the *Postal Imports Remission Order* and the *Courier Imports Remission Order*.

8 We focus on SMBs as smaller firms are more likely to import in small batches, and because they face a disproportionately high cost of compliance with import procedures and low-value parcels.

9 Our analysis does not address fraud or misrepresentation of the reported value of parcels. There is no data on the degree of fraud that occurs, and existing information indicates that fraud is a minimal occurrence. While there may be an incentive for the shipper to under-report the value of the parcel in order to avoid taxes and duties, penalties in Canada appear to be sufficient to discourage fraud at a material level. Express couriers strongly discourage under-reporting by shippers. A review of several public forums of ecommerce shippers and consumers reveals a general consensus that the risk of under-reporting is not worth the reward: If caught, in addition to the monetary penalties, shippers may find themselves on a CBSA 'watch list' and buyers face lengthy and cumbersome additional import procedures. Under-declared parcels that get lost en route are naturally also under-insured, which works as an additional deterrent against fraud.

Our model focuses on the *direct* channels of economic costs and benefits accruing to the key economic stakeholders. This means we ignore *indirect* economic effects on stakeholders, such as (i) pro-competitive effects from increased competition due to relatively lower import prices, (ii) increased cost advantages to those Canadian firms that import products, (iii) productivity effects on businesses that have faster access to intermediate inputs, (iv) an income effect for Canadian consumers; (v) faster customs clearance procedures for higher-value and bulk imports (since lower-value imports are no longer clogging the ports of entry); and (vi) a demand effect (higher levels of import) resulting from lower DMTs. We leave this quantification of indirect effects for future research. We note, however, that the inclusion of indirect effects would likely increase the economic benefits of raising the DMT and therefore the results reported here are likely an under-estimate of the total economic effects.

This is not the first study to quantitatively examine the impact of higher DMT levels. Previous studies include:

- A study by International Trade Strategies (ITS, 2012) estimates the effects of raising the *de minimis* threshold for 12 APEC countries. The ITS study focuses on standard assessment and processing costs, such as import delays, public administration, and compliance. The authors find that an increase in Canada's DMT to C\$ 200 would result in a net economic benefit of C\$ 4.37 billion.<sup>10</sup> These figures for Canada likely overestimate the benefits because the authors assume that the entire cost of processing a consignment at the border (estimated at C\$ 38.74) will be recovered for those inbound parcels between the old and the new DMT. In Canada, however, only a share of the costs would be recovered by the government (the total resource cost less the brokerage fee). The calculations appear to rely on the distribution of inbound parcels across consignment value for Indonesia. Notwithstanding, the ITS study suffers from a certain degree of opacity and neither the underlying data nor calculations are apparent, which makes a complete peer review difficult.
- The Conference Board of Canada (2014) published a short memorandum quantifying the fiscal impact (i.e., costs to the Canadian Government) of raising the DMT in Canada. The authors base their findings on the ITS estimates (above) and find that an increase in the DMT to C\$ 200 in Canada would result in forgone government revenues of between C\$ 193 and C\$ 237 million. The analysis is a plausible 'back-of-the-envelope' approach, however the authors rely on the results of the ITS study and hence incorporate all the weaknesses from that study while also rely on outdated information and data. Further, they do not distinguish between Post and express courier parcels, which is important to accurately identify the distribution of parcels across consignment value. Finally, their underlying assumptions regarding assessment rates are not supported by the more detailed data and industry information we have uncovered.
- Hufbauer and Wong (2011) offer a more developed analytical approach focusing on the United States. The authors consider the direct costs and benefits of raising the DMT in the United States from US\$ 200 to US\$ 800, including time delays for customers, paperwork and administrative costs for customers, costs for express firms and the US Postal Service, costs for the customs agency, and lost tariff revenue. They find that the loss of tariff revenues and fees of US\$ 26 million to the US Government is more than offset by the savings to stakeholders in the delivery chain. Due to lack of import data, the authors must make a simplifying assumption regarding the volume of parcels, and have no information on the distribution of parcels across consignment values. This results in a fairly rigid approach and the inability to subject the results to any robustness checks.

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<sup>10</sup> More specifically, the net benefit to Canada of C\$ 4.37 billion is composed of C\$ 4.3969 billion of total benefits, minus C\$ 26.2 million in forgone tax revenues. Over 70% of these benefits are from government savings.

- Hints et al. (2014) conduct a detailed study for the EU. Measuring costs and benefits to government and private sector, they find the VAT DMT should be raised to 80 EUR from the current 22 EUR, due to the total collection costs faced by Customs administrations and the private sector exceeding the revenues collected. They also find that any change in the buying behavior of consumers is not likely to be significant.

We believe that our approach stands out from the existing literature in the following important respects.

- *First*, data availability. We were granted access to import data of parcels into Canada through confidentiality agreements with eBay Canada and the Global Express Association, which is a global trade association for the express delivery industry. Private business data generated by the leading express courier service providers (DHL, FedEx and UPS) were aggregated into categories of consignment values. The eBay Canada data was provided to us at the transaction level (in a way the individuals and companies were made anonymous).<sup>11</sup> Together, these data informed us of the distribution of parcels across consignment values and the split between inbound parcels handled by Canada Post and express couriers.
- *Second*, our model allows us to distinguish between economic effects on the government, consumers and businesses. While other models only looked at the fiscal impact (Conference Board of Canada) or at the economy as a whole (ITS), we are able to report results for each individual key stakeholder group. This could be particularly relevant for Canadian policymakers that are concerned about balanced budgets and fiscal neutrality of new policies. It could also be useful for industry coalitions and consumer associations.
- *Third*, our model incorporates key policy parameters and offers a flexible modeling approach. The economic effects of an increase of DMT in Canada fundamentally depend on a set of parameters, some of which are private information to the GC and its agencies and for which there is no precise publicly available data.<sup>12</sup> While our preferred set of results is based on what we consider to be the most reasonable and robust parameter values in light of existing research, available information, and interviews we have conducted with industry specialists, our model is programmed in a flexible manner that allows to test for the sensitivity of the model results to modifications of any (combination of) policy parameters.
- *Fourth*, we more precisely estimate the resource savings for Canada where previous studies likely over estimate it. In Canada, a portion of private sector costs and government costs are passed onto the consumer as a brokerage fee and hence government savings should reflect the total resource costs less the brokerage fee.<sup>13</sup> In contrast, previous studies consider the entire resource cost as savings and hence over-estimate the cost savings of a higher DMT.

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11 There are two major streams of inbound parcels: Canada Post and express couriers. Data on inbound parcels through Canada Post and consignment values were collected from publicly available sources and expert interviews. The confidential eBay data was useful as a plausibility check for the publicly available data and vice-versa.

12 Examples for parameters whose values are private information to the GC and its agencies include: (i) the assessment rate, *i.e.*, the rate with which inbound parcels that are assessed for tax and duty; (ii) the “slippage” rate, *i.e.*, the degree to which high-value parcels take more time to assess than low-value parcels; (iii) the delivery delay faced by buyers if an inbound parcel is assessed by customs officials; and (iv) the total cost of assessing parcel and collecting the taxes and duties.

13 For instance, the total government and private sector costs of assessing a parcel and collecting taxes and duties (including brokerage fees) in Canada have been estimated at \$38.74 per parcel (see “*De Minimis* Thresholds in APEC,” ITS, p.54). In Canada, all private sector costs and some of government costs are passed on to the end customer as a brokerage fees (typically between \$9.95 for a Canada Post parcel and up to \$25 for a parcel delivered by express couriers). As a result, government savings reflects from higher DMT levels reflect only a portion of the amount of \$38.74: the government saves \$28.52 for Canada Post parcels (\$38.74 – \$9.95) and \$13.74 for express courier parcels (\$38.74 – \$25). Previous studies for Canada fail to exclude the brokerage fee when calculating actual cost savings to the government and hence include (incorrectly) the entire resource cost as savings to the government. As a result, these studies over-estimate the cost savings of a higher DMT to the GC.



The paper proceeds as follows. Section II discusses the various channels by which changes in Canada's DMT would affect Canadian government revenues, consumers and businesses, and presents key inputs, parameters, and data sources we use to quantify these effects. Section III summarizes the results of our study, including alternative policy scenarios and robustness checks. Section IV concludes that Canada would benefit from raising its *de minimis* threshold.

## The model

The model offers a transparent and flexible approach for DMT analysis, and allows experimentation with a range of reasonable parameters to estimate the direct economic effects of increasing the DMT in Canada to various levels. The framework allows for the simultaneous assessment of DMT policy changes for government revenues, consumers, and businesses. The model compares the actual (the situation with the current DMT of \$20) with a series of counterfactuals (but-for situations in which the DMT is increased to higher levels of \$80, \$100 or \$200). The model calculates the changes to government revenues, costs and benefits to consumers, and costs and benefits to businesses as the economy moves from the actual scenario to the counterfactual scenario.

All else equal, a higher DMT will free up government resources, and we consider two options for those government resources. In Option 1, the government redirects freed-up resources that were expended on low-value parcels to higher value parcels. Subsequently, the assessment rate on higher value parcels increases. That is, the government foregoes taxes and duties on *de minimis* consignments, but gains additional taxes and duties on higher value parcels. The net budget effect depends on the distribution of parcels across consignment value, among other factors.<sup>14</sup> In Option 2, the assessment rate on higher-value parcels does not change, and the GC realizes the cost savings internally, while entirely foregoing taxes and duties on *de minimis* consignments.

Consumers and businesses realize cost savings in both options from no longer paying duties, taxes and brokerage fees, and enduring time-consuming import assessment procedures for low-value parcels (i.e., those above \$20 and under the new DMT). In Option 1, however, consumers and businesses face a higher assessment rate on higher value parcels and this reduces the net benefits. Below we present the specific calculations for the direct effects for each stakeholder, under Option 1 and 2.

### a. Effects on Canadian Government Revenue

#### *Import duty and sales tax revenue channel<sup>15</sup>*

As the DMT increases, the GC foregoes tax and duty revenues on low-value parcels that are no longer subject to taxes and duties. The GC also saves costs in no longer expending resources on those low-value parcel assessments. For instance, as the DMT increases from \$20 to \$80, government agencies such as Canada Post and CBSA no longer expend resources to assess the parcels between \$20 and \$80, which is a cost savings. On the other hand, the GC no longer collects taxes and import duties on parcels between \$20 and \$80, which is a

<sup>14</sup> The Appendix reports the results across the various distributions.

<sup>15</sup> Canada imposes a value-added tax or a VAT on most goods and services, and these taxes are the good and services tax (GST), harmonized sales tax (HST), and provincial sales tax (PST).

government revenue forgone.<sup>16</sup> The net government revenue effect depends on a number of factors, such as the volume of parcels, the distribution of those parcels across consignment values, the initial assessment rate on low-value parcels, and the government-borne costs of assessment. It also depends on what the GC decides to do with the newly freed up resources.<sup>17</sup> We consider two general government policy options below.

Under Option 1, the government redirects freed-up resources that were expended on low-value parcels to higher value parcels and the assessment rate increases for higher value parcels. In other words, the assessment rate of higher-value parcels (above the new DMT level) is higher in the counterfactual than in the actual scenario. As a result, tax and duty revenues to the GC on assessed low-value parcels are forgone, while additional tax and duty revenues are generated from the increased assessment rates on higher value parcels. The net effect for GC is calculated as the difference between additional revenue and forgone revenue.

Under Option 2, the assessment rate on high-value parcels does not change, and the GC realizes the cost savings internally, such as through a redeployment of government priorities or a more efficient allocation of resources. (The assessment rate of higher-value parcels does not change.) As a result, tax and duty revenues to the GC on assessed low-value parcels are forgone, while GC saves the costs of assessing those low-value parcels. Revenues forgone for the GC are equal to the cost saving incurred by consumers and businesses. The net effect for GC is calculated as the difference between cost savings and forgone revenue.

Specifically, the change in tax and duty revenue for the government is a function of the number of assessed parcels in the relevant value range, the average value of a parcel in that value range, tax rate, and duty rate. Under Option 1, the government's forgone revenues and additional tax and duty revenues are calculated as follows (there is no resource savings as the GC redirects resources from low value parcels to high value parcels):

- Forgone tax revenue = (number of assessed consumer parcels above \$20 and below the new DMT) x (average value of the parcels in that range) x (tax rate)
- Forgone duty revenue = (number of assessed parcels above \$20 and below the new DMT) x (average value of the parcels in that range) x (duty rate)
- Additional tax revenue = (additional number of assessed consumer parcels above the new DMT) x (average value of the parcels in that range) x (tax rate)
- Additional duty revenue = (additional number of assessed parcels above the new DMT) x (average value of the parcels in that range) x (duty rate)

Under Option 2, the government's forgone revenues and cost savings are calculated as follows:

- Forgone tax revenue = (number of assessed consumer parcels above \$20 and below the new DMT) x (average value of the parcels in that range) x (tax rate)
- Forgone duty revenue = (number of assessed parcels above \$20 and below the new DMT) x (average value of the parcels in that range) x (duty rate)
- Government cost savings = (number of assessed parcels above \$20 and below the new DMT) x (portion of the total cost of assessing parcel and collecting tax/duty that government incurs)

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16 We incorporate the input tax credit, which allows GST/HST registrants to recover GST/HST taxes paid on purchases and expenses related to the registrant's commercial activities. Ignoring the input tax credit would lead to over-estimating the losses to government revenues and cost savings to businesses.

17 As the DMT increases, government agencies such as Canada Post and CBSA will no longer need to expend resources to assess the low-value parcels.

## b. Effects on Canadian Consumers

For consumers, there are three main channels of economic effects to consider: (i) duties and taxes; (ii) brokerage fees; and (iii) importation delays (or time to import). As the DMT increases, consumers no longer pay duties, taxes or brokerage fees for parcels above \$20 and below the new DMT. Additionally, they no longer endure costly delays in transit times due to time-consuming import assessment procedures.

### *Import duty and tax savings channel*

As the DMT increases, consumers no longer pay import duties and taxes for parcels above \$20 and below the new DMT, which is a cost savings for the consumer. In Option 1, these consumer savings are somewhat countered by the additional import duties and taxes payable by consumers from the increased assessment rates on higher-value parcels, and the net effect for consumers is the difference between these benefits and costs. Under Option 1, consumer net savings on taxes and duties are calculated as:

- Consumer tax savings = [(number of assessed parcels above \$20 and below the new DMT) x (tax rate)] – [(additional number of assessed parcels above the new DMT) x (tax rate)]
- Consumer duty savings = [(number of assessed parcels above \$20 and below the new DMT) x (duty rate)] – [(additional number of assessed parcels above the new DMT) x (duty rate)]

Under Option 2, the assessment rate on higher value parcels does not change and therefore the consumer savings are simply calculated as:

- Consumer tax savings = (number of assessed parcels above \$20 and below the new DMT) x (tax rate)
- Consumer duty savings = (number of assessed parcels above \$20 and below the new DMT) x (duty rate)

### *Brokerage fee savings channel*

Similarly, as the DMT increases, consumers no longer pay brokerage fee for parcels above \$20 and below the new DMT, which is a consumer savings. In Option 1, these consumer savings are countered by the additional brokerage fees from the increased assessment rates on higher-value parcels, and consumer net savings on brokerage fees are calculated as:

- Brokerage fee savings = [(number of assessed parcels above \$20 and below the new DMT) x (brokerage fee)] – [(additional number of assessed parcels above the new DMT) x (brokerage fee)]

Under Option 2, the brokerage fee savings are simply calculated as:

- Brokerage fee savings = (number of assessed parcels above \$20 and below the new DMT) x (brokerage fee)

### *Importation time-savings channel*

With a higher DMT, consumers also benefit from avoiding time-consuming import assessment procedures for parcels above \$20 and below the new DMT. In Option 1, these consumer savings are somewhat offset by additional delays from the increased assessment rates on higher value parcels, and the net consumer importation time savings are calculated as:

- Importation time savings = [(number of assessed parcels above \$20 and below the new DMT) x (delay in days) x (time transit cost equivalent duty rate per day)] – [(additional number of assessed parcels above the new DMT) x (delay in days) x (time transit cost equivalent duty rate per day)]



Under Option 2, the time savings are simply calculated as:

- Importation time savings = (number of assessed parcels above \$20 and below the new DMT) x (delay in days) x (time transit cost equivalent duty rate per day)

### c. Effects on Canadian Businesses

Businesses realize cost savings through four main channels: (i) duties; (ii) brokerage fees; (iii) tax refund paperwork time, and (iv) importation delays (or time to import). The main difference between business and consumer effects is related to taxes. Canadian businesses can claim a tax refund with the Input Tax Credit and hence there is no tax savings for businesses per se,<sup>18</sup> although businesses experience some cost savings in the form of reduced paperwork and lower transaction costs from no longer needing to claim the tax refund. These savings were calculated based on the time expended on paperwork and administrative tasks in completing customs documentation (on average, 0.15 hours per parcel) and the average hourly wage in Canada.

Small- and medium-sized businesses (SMBs) have fewer resources than large firms to expend on administrative tasks, and face a disproportionately high cost of compliance with import procedures and low-value parcels, including the high cost of product returns.<sup>19</sup> Hence administrative costs such as those relating to customs procedures tend to disproportionately affect SMBs.<sup>20</sup> Increasing the DMT would eliminate the brokerage fee and other paperwork costs on cross border returns and hence the corresponding benefits would be more greatly realized by SMBs.

#### *Import duty savings channel*

As the DMT increases, businesses save import duty costs on parcels above \$20 and below the new DMT, although these benefits are offset somewhat in Option 1 by the additional import duties payable by businesses from the increased assessment rates on higher value parcels. In Option 1, business duty savings are calculated as:

- Business duty savings = [(number of assessed parcels above \$20 and below the new DMT) x (duty rate)] – [(additional number of assessed parcels above the new DMT) x (duty rate)]

In Option 2, business duty savings are simply:

- Business duty savings = (number of assessed parcels above \$20 and below the new DMT) x (duty rate)

#### *Brokerage fee savings channel*

Similarly, as the DMT increases, businesses save brokerage fee costs for parcels above \$20 and below the new DMT, and again these savings are offset somewhat under Option 1 by the additional brokerage fees payable on higher value parcels. In Option 1, business brokerage fees are calculated as:

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18 The GC does not collect GST/PST/HST from GST/PST/HST registrants paid on legitimate business expenses. See Input Tax Credits, Canada Revenue Agency, available at <http://goo.gl/nGcCmK>.

19 Regulatory costs per employee have been estimated to be at least 36 percent higher in small firms than in medium and large firms (see Crain et al, “The impact of regulatory costs on small firms,” for the U.S. Small Business Administration, September 2010). Also, it has been shown that large firms can more easily overcome fixed trade costs (see Chaney, “Distorted gravity: the intensive and extensive margins of international trade, *American Economic Review*, 98:4, 2008.)

20 Industry observers note that businesses that deal with cross border return items often absorb brokerage and any other additional import fees rather than spend the time going through the paperwork. We do not include this effect in our empirical analysis although such costs are likely to disproportionately affect SMBs.

- Business brokerage fee savings = [(number of assessed parcels above \$20 and below the new DMT) x (brokerage fee)] – [(additional number of assessed parcels above the new DMT) x (brokerage fee)]

In Option 2, business brokerage savings are simply:

- Business brokerage fee savings = (number of assessed parcels above \$20 and below the new DMT) x (brokerage fee)

#### *Administrative cost savings channel*

As the DMT increases, businesses save in administrative costs as they no longer need to file for the tax refund for parcels above \$20 and below the new DMT. Again, these cost savings are somewhat offset in Option 1 to the extent they endure additional paperwork for higher-value parcels. The administrative cost savings for businesses is a function of the number of assessed parcels in the relevant value range, time expended on paperwork and administrative tasks in completing customs documentation (on average, 0.15 hours per parcel) and the average hourly wage in Canada. Specifically, in Option 1, net business administrative cost savings are calculated as:

- Business administrative cost savings = [(number of assessed parcels above \$20 and below the new DMT) x (0.15 hours paperwork time) x (average hourly wage)] – [(additional number of assessed parcels above the new DMT) x (0.15 hours paperwork time) x (average hourly wage)]
- In Option 2, business administrative cost savings are simply:
- Business administrative cost savings = (number of assessed parcels above \$20 and below the new DMT) x (0.15 hours paperwork time) x (average hourly wage)

#### *Importation time savings channel*

Time has an economic cost and the longer a product takes to get from the producer to the final consumer, the more likely the product is to perish, be out of date or be displaced by a superior alternative. There is also an opportunity cost in having working capital tied up in inventory. With a higher DMT, businesses endure fewer costly delays in transit times for parcels above \$20 and below the new DMT, and again these savings are somewhat offset in Option 1 from some additional delays on higher value parcels. Hence saving the time that merchandise spends in transit has an economic benefit. In Option 1, net business importation time savings are calculated as:

- Business importation time savings = [(number of assessed parcels above \$20 and below the new DMT) x (delay in days) x (time transit cost equivalent duty rate per day)] – [(additional number of assessed parcels above the new DMT) x (delay in days) x (time transit cost equivalent duty rate per day)]

Under Option 2, the time savings are simply calculated as:

- Importation time savings = (number of assessed parcels above \$20 and below the new DMT) x (delay in days) x (time transit cost equivalent duty rate per day)

### **d. Model data and parameters**

The central data inputs for our model include (i) the number of inbound parcels serviced by Canada Post and express couriers; (ii) the average value per parcel; (iii) the distribution of parcels across the values and (iv) distribution of parcels among consumers and businesses and (v) parcel assessment rates. Data on inbound parcels through Canada Post and the distribution of parcels across consignment values were collected from publicly available sources (Canada Post, Canada Border Services Agency or CBSA) and eBay transaction-level

data. Specifically, we use the aggregate number of inbound parcels reported by Canada Post<sup>21</sup>, and let the detailed eBay data inform us of how those inbound parcels are distributed across consignment values. We adjusted the Canada Post data for letter mail. Data on inbound parcels through express couriers, the distribution across consignment values and the distribution among consumers and businesses were kindly provided to us by the trade association for the global express delivery industry, the Global Express Association. Combined, these datasets enable us to calculate the volume and value of total inbound parcels, by consignment value, distinguishing between personal and commercial parcels.

### *Key parameters of the model*

The model includes a number of parameters that, in part, affect the direct economic costs and benefits for each stakeholder group. Parameter values are based on available data and information although in some cases there is no publicly available data. For instance, the precise assessment rate of inbound parcels that enter through Canada Post is essentially only known to the GC and its agencies. In those cases, we specify a value range for the parameter based on best available information and thus make the value of the parameter flexible. We present the results of the model under various values of the flexible parameters.

The key parameters of the model are as follows:

- Assessment rate:** The assessment rate is the percentage of inbound parcels that are assessed for tax and duty. There is no publicly available data on the official assessment rate for parcels that go through Canada Post. We assume the assessment rate for Canada Post parcels is far less than 100%. Available information and interviews with industry participants suggest the current assessment rate may be approximately 20 to 40% for lower value parcels with the value between \$20 and \$100, and 70 to 80% for higher value parcels with the value above \$100. The assessment rate is important because it governs the magnitude of forgone revenues, and potential additional revenues if government resources are redirected towards higher value parcels. In similar way, it governs the magnitude of the cost and benefit to the consumers and businesses through various channels as explained above. Interviews with industry participants and a review of online public forums in which individuals posted their experiences revealed a potentially broad range and our model allows for different assessment rates under each of the value ranges of \$20 to \$80, \$80 to \$100, \$100 to \$200 and above \$200 for Canada Post parcels. Given the uncertainty around the assessment rate (only government agencies would have this information), we make it a flexible parameter within the ranges described above, in the actual scenario. Other studies implicitly assume a 100% assessment rate, which, all else equal, would lead to over-estimating the losses to government revenue and cost savings to consumers and businesses. As explained above, under Option 1, the assessment rate on parcels above the new DMT increases from the initial level to a higher level due to redirecting of freed-up resources that were expended on the assessed low-value parcels above \$20 and below the new DMT.
- Slippage rate:** the extent to which high-value parcels take more time to assess than low-value parcels. We specify a range between 70% and 100%, with the parameter set to 80% initially (i.e., 20% less time is needed for low-value parcels than for high-value parcels). A slippage rate of 0.90 indicates that 10% less time is needed for low-value parcels; a slippage rate of 0.70 indicates that 30% less time is needed for low-value parcels, and so on. This rate is only used under Option 1, and it specifies the effect of freed-up resources expended on the low-value parcels above \$20 and below the new DMT on increasing the assessment rate on parcels above the new DMT.

21 Canada Post Corporation 2014 Annual Report, page 77.

[https://www.canadapost.ca/assets/pdf/aboutus/financialreports/2014\\_ar\\_complete\\_en.pdf](https://www.canadapost.ca/assets/pdf/aboutus/financialreports/2014_ar_complete_en.pdf)

- **Average GST/HST/PST rate:** we consider the total tax rate choices in terms of the simple average among provinces (10.61%), the population-weighted average (12.32%), and the retail trade-weighted average (11.96%). Total tax rate includes both federal and provincial components of sales taxes as of 2013. We also include 5% as a parameter choice for GST only in order to calculate the effect of federal sales tax.<sup>22</sup>
- **Average duty rate:** the import tax or duty rate; we specify a range between 0 and 2%. Based on publicly available data and estimates of Canada's applied tariff rate for consignments under \$200, 1% is a reasonable initial benchmark.<sup>23</sup>
- **Delay for assessed post parcels (in days):** It is time spent by government agencies on assessing post parcels. We specify a range between 0 and 10, and use 3.7 as the initial benchmark, which is based on the literature and our discussions with industry participants.<sup>24</sup> We also note that, based on our discussions with industry participants, express courier parcels are not delayed while being assessed.
- **Time transit cost equivalent duty rate:** Research suggests that each additional day in transit is equivalent to an ad valorem tariff of approximately 0.6 to 2.1 percent. Country-specific estimates indicate this value is 1.0 percent for Canada, specifically.<sup>25</sup> We specify a range between 0 and 2% with the parameter set to 1.0 percent initially.
- **Canada post handling cost:** a handling fee or brokerage fee of \$9.95 per dutiable or taxable mail item.<sup>26</sup>
- **Courier handling cost:** express couriers (DHL, FedEx, and UPS) typically charge a brokerage fee generally between \$20-25.<sup>27</sup>
- **Total cost of assessing parcel and collecting tax/duty:** the estimated total resource cost for a *de minimis* clearance is \$38.74.<sup>28</sup> The total government and private sector cost of assessing the parcel and collecting taxes and duties including brokerage fees in Canada is assumed to be \$38.74 per parcel. All private sector costs and some of government costs are passed onto the customer as a brokerage fee, and hence the government savings reflects only a portion of the \$38.74: the government saves \$28.52 for Canada Post parcels (\$38.74 – \$9.95) and \$13.74 for express courier parcels (\$38.74 – \$25). These figures reflect the government inefficiency of expending resources on assessing low-value parcels.

22 See "GST/HTS rates", Canada Revenue Agency, available at: <http://www.cra-arc.gc.ca/tx/bsnss/tpcs/gst-tps/rtse-eng.html> and "GST and HST Rates," Retail Council, <http://www.retailcouncil.org/quickfacts/taxrates>

23 See "Weighted Average Tariff Rates on Import Consignments", p. 55; and Applied Tariff Rates, World Development Indicators, World Bank. Holloway and J. Rae, "De Minimis Thresholds in APEC", *World Customs Journal*, 2012, vol. 6, no. 1, see table 4.8.

24 See ITS Global Asia Pacific, "De Minimis Thresholds in APEC", May 2012, see table 3.1, "Time Taken by and Cost of Import Procedures", p. 34.

25 See D. Hummels and G. Schaur, 2013, "Time as a Trade Barrier". *American Economic Review*, 103(7): 2935-59; and "Calculating Tariff Equivalents for Time in Trade", Nathan Associates Inc. prepared for US Agency for International Development, table A-1, March 2007.

26 See "Customs Duties and Taxes", Customs Requirements, Canada Post.

27 See "Customs Clearance into Canada" UPS, <https://goo.gl/TK7ehP>; "Fees and Other Shipping Information", FedEx, Jan. 4, 2016, (see p. 3), <http://goo.gl/x4mDir>. See also "The Canada-USA Price Gap", Report of the Standing Committee on National Finance, p. 28, <http://goo.gl/2vDXQk>.

28 See "De Minimis Thresholds in APEC", ITS, May 2012, p. 54.

- **Cost of 0.15 hour of employee time spent on the tax refund paperwork:** we follow the literature and assume a savings in employee time of 0.15 hours in completing the tax refund documentation for a low-value transaction<sup>29</sup>; then, based on the average hourly wage of \$25.55<sup>30</sup>,  $0.15 \times \$25.55 = \$3.83$ .
- **Number of total inbound Canada Post valuable transactions:** To ensure our headline numbers concord with publicly available data, we use the detailed eBay transaction-level data to inform the distribution over consignment value and estimate total inbound Canada Post valuable transactions with the following steps:
  - i. Canada Post reports that there are 37 million (mln) inbound parcels and 234 mln inbound letter posts.<sup>31</sup> The total number of inbound transactions that have value will be all of the 37 mln inbound parcels plus a share of the 234 mln inbound letter posts (in many cases, an 'inbound letter post' may include a low-value item such as coins or stamps).
  - ii. We apply the letter-parcel split of domestic Canada-to-Canada eBay transactions to inbound Canada parcels. Of all Canada-Canada eBay transactions, 30% letter and 70% parcel, and assuming all eBay transactions have some value, then that 30-70 split can be applied to all inbound Canada transactions that have value.
  - iii. It follows then that the 37 mln inbound parcels with value is 70% of the total number of inbound transactions with value (or "x").  $70\% \text{ of "x"} = 37 \text{ mln}$ .  $\text{"x"} = 53 \text{ mln}$ . That is, there are 53 mln inbound transactions with value.
  - iv. Applying the 30-70 split to the 53 mln inbound transactions with value results in 37 mln inbound parcels with value and 16 mln inbound letters with value.

The number of valuable transactions is a flexible parameter between 45 and 65 million, with 53 million as the initial benchmark.
- **Consumer share of Canada Post parcels** (parcels destined to individual consumers): we decompose the consumer and business portions of the Canada Post parcels in order to estimate the net effect on government, consumers and businesses. Based on the literature in this area, we specify the consumer share of Canada Post parcels to be between 50 and 90% and use 80% as the initial benchmark.<sup>32</sup>
- **Distribution of parcels across consignment values:** we base our main results on the industry interview-informed distribution. For robustness checks we also consider two additional distributions of consignment values: one is based on a compilation of the literature and the other is based on information from aggregate express courier data.

## Results

Below we report the results of increasing the DMT from the current level of \$20 to a higher threshold: we consider \$80, \$100 and \$200. A summary of the results is provided in Table 1, and Tables 2 and 3 report the detailed results from base scenario parameters for government policy Options 1 and 2, respectively. The appendix reports additional scenarios in which we vary parameter values for sensitivity analysis.

29 "De Minimis Thresholds in APEC", ITS, May 2012, p. 55

30 Statistics Canada, Average hourly wages of employees, Dec. 2015

31 Annual Report 2014, Canada Post, see Table Revenues and Volumes by Line of Business, p. 76.

32 See "Estimates of Cross Border Shopping, 2006 to 2012", P. Corbi, Statistics Canada, Oct. 8, 2014, see table 3, p. 9.



In Option 1, the government redirects freed up resources to assessing parcels with a consignment value above the new DMT. For instance, as the DMT increases to \$80 (first column), the GC experiences a net revenue loss of \$4 million, reflecting a revenue loss of \$39 million (forgone taxes and duties on low-value parcels) and a revenue gain of \$34 million (additional taxes and duties collected on higher-value parcels). Consumers experience a net gain of \$104 million, which includes a \$3 million net cost savings in duties and taxes, a net savings of \$106 million in brokerage fees, and a \$6 million cost in costly import transit delays for those additional parcels above the new DMT that are now being assessed. Overall, the consumer cost savings on parcels between \$20 and \$80 outweighs the additional consumer costs on parcels above \$80, which results in a net consumer cost savings. Similarly, businesses experience net cost savings in many of the same channels, and small (negligible) net costs in import delays on higher value parcels. Businesses also experience a net administrative cost savings in the form of reduced paperwork and lower transaction costs. Recall that with the Input Tax Credit, there is no tax savings for businesses *per se*.<sup>33</sup> However, businesses will experience a cost savings to the extent they no longer have to do the paperwork on low-value parcels to claim the Input Tax Credit. As discussed, these savings were calculated based on the time expended on paperwork and administrative tasks in completing customs documentation (on average, 0.15 hours per parcel) and the average hourly wage in Canada. The business cost savings in paperwork time and transaction costs would be expected to benefit SMBs more, as such administrative costs tend to disproportionately affect smaller firms.

**Table 1. Summary of Economic Effects of Raising the *De Minimis* Threshold (DMT) in Canada**

	Base Scenarios (results in C\$ millions)		
	\$80 DMT	\$100 DMT	\$200 DMT
<b>Government</b>	-\$4 to \$127	-\$22 to \$138	-\$68 to \$161
<b>Consumers</b>	\$104 to \$156	\$146 to \$190	\$257 to \$313
<b>Business</b>	\$102 to \$108	\$121 to \$125	\$172 to \$174
<b>Total Direct Economic Effects</b>	\$202 to \$391	\$245 to \$453	\$361 to \$648

Source: Authors' calculations. Results reflect the range across the two options, based on the initial benchmark assumptions. All dollar figures are in Canadian dollars.

Table 1 summarizes the economic effects for each stakeholder across three counterfactuals: C\$ 80, C\$ 100, and C\$ 100. The net effect of an increase of the DMT to \$80 on government revenue is between a (negligible) loss of \$3.8 mln and a (small) gain of \$132 mln. We would consider this effectively fiscally neutral. The effects on consumers and businesses are positive in every scenario. Overall, the total direct economic effects are clearly positive and between \$201 million and \$391 million.

33 The GC does not collect GST/HST from GST/HST registrants paid on legitimate business expenses, see Input Tax Credits, Canada Revenue Agency, available at <http://goo.gl/nGcCmK>.

**Table 2. Economic Effects of Raising the *De Minimis* Threshold (DMT) in Canada under Option 1: Assessment Rate Increase on Higher Value Parcels**

Option 1: Assessment rate increase on higher value parcels - Base Scenario (C\$ millions)			
	\$80 DMT	\$100 DMT	\$200 DMT
<b>Government</b>			
Revenue forgone	\$39	\$52	\$117
Additional revenue	\$34	\$30	\$48
<b>TOTAL - Government</b>	-\$4	-\$22	-\$68
<b>Consumers</b>			
Duty and tax revenue net effect	\$3	\$20	\$64
Brokerage fee net effect	\$106	\$130	\$188
Import time net effect	-\$6	-\$4	\$5
<b>TOTAL - Consumers</b>	\$104	\$146	\$257
<b>Business</b>			
Duty revenue net effect	\$1	\$2	\$4
Brokerage fee net effect	\$89	\$103	\$143
Paperwork time net effect	\$14	\$17	\$24
Import time net effect	-\$1	-\$1	\$1
<b>TOTAL - Business</b>	\$102	\$121	\$172
<b>Total Direct Economic Effects</b>	\$202	\$245	\$361
Source: Authors' calculations. Results reflect the initial benchmark assumptions. All figures are in Canadian dollars.			

**Table 3. Economic Effects of Raising the *De Minimis* Threshold (DMT) in Canada under Option 2: Government Cost Savings**

Option 2: Government Cost Savings - Base Scenario (\$ millions)			
	\$80 DMT	\$100 DMT	\$200 DMT
<b>Government</b>			
Revenue forgone	\$39	\$52	\$117
Cost saving	\$166	\$190	\$278
<b>TOTAL - Government</b>	<b>\$127</b>	<b>\$138</b>	<b>\$161</b>
<b>Consumers</b>			
Duty and tax revenue net effect	\$37	\$50	\$112
Brokerage fee net effect	\$116	\$137	\$191
Import time net effect	\$3	\$3	\$10
<b>TOTAL - Consumers</b>	<b>\$156</b>	<b>\$190</b>	<b>\$313</b>
<b>Business</b>			
Duty revenue net effect	\$2	\$2	\$4
Brokerage fee net effect	\$91	\$105	\$143
Paperwork time net effect	\$15	\$17	\$24
Import time net effect	\$1	\$1	\$2
<b>TOTAL - Business</b>	<b>\$108</b>	<b>\$125</b>	<b>\$174</b>
<b>Total Direct Economic Effects</b>	<b>\$391</b>	<b>\$453</b>	<b>\$648</b>
Source: Authors' calculations. Results reflect the initial benchmark assumptions. All figures are in Canadian dollars.			

Tables 2 and 3 report the results from the same set of counterfactuals with a further breakdown of the results. The net effect on government revenue includes the revenue forgone and the additional revenue; the net effect on consumers include duty and tax revenue effects, brokerage fees, import time costs; and the net effect on business includes duty revenue effects, brokerage fees, administrative costs, and import time costs. The first two rows of Table 3 illustrate that relatively low DMTs can be a costly endeavor for governments. For instance, increasing the DMT from \$20 to \$80 shows that GC is spending \$166M to collect \$39M in revenues.

In sum, our results indicate that increasing the DMT in Canada would be fiscally neutral or even positive for the GC, with clear benefits for consumers and businesses, particularly small- and medium-sized businesses because the cost savings for smaller entities is disproportionately large. Tax and duty assessments on *de minimis* parcels is inefficient, and raising the DMT can alleviate these inefficiencies and yield benefits in terms of cost savings from a reduction in brokerage fees, costly import delays, and administrative costs for government, consumers and businesses.

## Policy recommendations

Overall, the results suggest that an increase in Canada's DMT would result in positive direct economic effects, including net cost savings for consumers and businesses, and a fiscally neutral or positive net effect on government revenues (depending on how the government realizes its cost savings). An increase in the DMT to \$80 under Option 2 where the GC realizes its cost savings shows that currently the Government is spending \$166M to collect \$39M. These results reflect the relative inefficiency of *de minimis* assessments. While identifying an 'optimal' DMT is outside the scope of this paper, these results clearly indicate that increasing the DMT from the current level of C\$ 20 is likely to yield a net economic benefit for Canada.

### Box 1. Increasing the *de minimis* threshold and potential effects on Canadian Retailers

This paper considers direct effects of raising the DMT on government revenues, consumers, and businesses, and we do not examine empirically the effect on Canadian retailers. Canadian retailers claim that the increase of DMT would hurt them, but from the perspective of a policymaker there are other key stakeholders in the economy to also consider such as the government, consumers, and business, particularly small and medium businesses (SMBs) that engage in international commerce. The results presented above suggest that increasing the DMT is effectively fiscal neutral for the Government of Canada (GC), with net government revenue effects ranging from small but negative, to larger and positive. The net government revenue effect depends on how the GC decides to utilize the freed up resources. The results also show that consumers and SMBs clearly benefit across all scenarios. Overall, the total direct economic effect for Canada is positive, ranging from \$200 million to \$648 million.

Retailers' main argument is about tax fairness: "It's also unfair, Canadian retailers argue, to let consumers buy goods shipped from other countries without charging them the taxes they'd have to pay if they shopped at a store in Canada" (see "Price gap help: Tax cuts for cross-border orders could pay off," L. Payton, CBC News, Dec. 18, 2014). At present, however, receivers of \$20-\$80 parcels pay (i) taxes and duties and (ii) brokerage fees. As a percentage of the value, the brokerage fee is much larger than taxes and duties. From the consumer's perspective, therefore, it is inequitable for consumers of goods shipped from other countries to pay taxes, fees and duties in multiple amounts of what they would have paid had they shopped at a store in Canada. Canadian retailers, therefore are benefiting at the expense of consumers from the current low level DMT due to these relatively large costs charged to the consumers.

The potential effects of increasing the DMT includes relatively large consumer benefits with relatively small Canadian retailer costs. Note, however, that any cost to the retailers will be realized not by the tax unfairness but by the removal of unnecessary costs to the consumers.

(continued)

There are four main effects of an increase in the DMT on Canadian retailers:

- i. Small but positive sales effect. As discussed in the analysis above, as the DMT increases, consumers no longer pay duties and taxes on inbound parcels between \$20 and \$80. This is realized as an income effect, which results in a slight increase in disposable Canadian consumer income, part of which will be spent on Canadian retailers.
- ii. Efficiency gain for the overall economy. As the DMT increases, consumers and SMBs no longer pay brokerage fees, which can range from 12% to 125% of the parcel value for consignment between \$20 and \$80. Revenues collected from taxes range from 5% to 12.32. Canadians are expending a relatively large amount of resources to collect a small amount of revenue. For instance, brokerage fees range from 16.6% to 41.7% on a \$60 parcel (see table below).

### Brokerage Fee as a Percent of Parcel Value

	Value of parcel (\$)					
	20	40	60	80	100	200
<b>Brokerage fee per parcel (\$)</b>						
Canada Post: \$9.95	49.8	25.5	16.6	12.4	10.0	5.0
Express Courier: \$20	100.0	51.3	33.3	25.0	20.0	10.0
Express Courier: \$25	125.0	64.1	41.7	31.3	25.0	12.5

Source: Canada Post, CBSA, DHL, FedEx, UPS, and Sidley calculations. All figures are in Canadian dollars.

These figures reflect the inefficiency of expending resources on assessing low value parcels. Specifically, the Canadian Government is spending more money than it is collecting on many of these low value parcels. For instance, take a parcel valued at \$40. Government resources expended on assessment are \$13.74 to \$28.52 (\$38.74 less the brokerage fees, which are \$9.95 for Canada Post and \$20-\$25 for express couriers). Yet taxes and duties collected by the Canadian Government would be just \$5.33 (assuming a 1% duty and 12.32% GST/HST/PST). Increasing the DMT will help to eliminate such inefficiencies and result in a more efficient allocation of resources.

- iii. Trade diversion of consumption towards foreign retailers. Trade diversion occurs to the extent that — as a result of consumers no longer paying taxes and duties on inbound parcels between \$20 and \$80, Canadian consumers divert their purchases in that range from domestic to foreign retailers.
- iv. Complementarity between online and traditional sales. Recent studies show that consumers spend more when they use multiple channels, such as online and physical stores (Demystifying the online shopper: 10 myths of multichannel retailing,” Jan. 2013 (see p. 30).) To the extent that ecommerce grows as a result of a higher DMT, then Canadian retailers that offer online purchasing are likely to experience increased sales as well.



*(continued)*

In sum, increasing the DMT to \$80 may have a small negative effect on Canadian retailers, but a larger, positive effect on the overall Canadian economy. In the short term, the Canadian retail sector may experience a small negative effect from trade diversion as some consumers divert purchases from local retailers to international ecommerce. Meanwhile, the overall economy experiences an efficiency gain due to the elimination of inefficient money collection processes. In the medium to long term, the Canadian retail sector is likely to experience a small positive effect as consumers have slightly more income from lower taxes, duties, and fees, and consumers use a portion of that increased income in increased retail purchases. Further, there is potential for a complementarity effect and increased sales for the Canadian retailers that offer online purchasing.

## Appendix

This appendix contains a relatively comprehensive series of results from various scenarios. Table A0 lists the distributions of consignment value based on industry interviews, the literature and express courier data. Tables A01 report the results for the three distributions and the tables are organized by government effects, consumer effects, and business effects, and for Option 1 and 2, in order to help the reader compare and contrast the different results. The results vary some although not to a great extent across distributions. The literature-based and express courier-based distributions are fairly similar and it follows that the sets of results based on those two distributions are similar as well. In the industry interview-based distribution, however, 70% of parcels are under \$20, 21% are between \$20 and \$80, and only a small is disbursed across the higher values. This leaves little to expect from redirecting resources towards higher value consignments. As the results show, how the Government redeploys its cost savings makes the bigger difference, that is, the difference between Option 1 and Option 2. Table A1 lists the input parameters for a variety of scenarios, including our base scenario, a set of conservative parameter choices that yield minimum cost savings, and a set of aggressive parameter choices that yield more generous cost savings. Table B reports the fiscal impacts across those three scenarios (base, conservative, high), for Option 1 and Option 2, and for the three higher DMTs (\$80, \$100, and \$200). Table C reports the direct economic effects for government, consumers and businesses across the three scenarios, for Option 1 and Option 2, and for the three higher DMTs (\$80, \$100, and \$200). Across all scenarios, the effect on government revenue is between a very small loss — sufficiently small such that we could consider it fiscally neutral — and a modest gain; with net benefits for consumers and small businesses.

A0. Distributions of Consignment Value			
	Based on industry interviews	Based on the literature	Based on express courier data
Consignment value distribution: under \$20	70%	40%	36%
Consignment value distribution: C\$20 - C\$80	21%	25%	33%
Consignment value distribution: C\$80 - C\$100	2%	5%	6%
Consignment value distribution: C\$100 - C\$200	4%	12%	14%
Consignment value distribution: above C\$200	3%	18%	11%

### A01. Base Scenario Results Across the Different Distributions: Effects on Government Revenues (Option 1)

#### Effects on Canadian Government Revenue - DMT of C\$80 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Revenue forgone	\$39	\$41	\$45
Additional revenue	\$34	\$86	\$95
<b>TOTAL – Government</b>	<b>-\$4</b>	<b>\$46</b>	<b>\$51</b>

#### Effects on Canadian Government Revenue - DMT of C\$100 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Revenue forgone	\$52	\$57	\$63
Additional revenue	\$30	\$115	\$110
<b>TOTAL – Government</b>	<b>-\$22</b>	<b>\$58</b>	<b>\$48</b>

#### Effects on Canadian Government Revenue - DMT of C\$200 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Revenue forgone	\$117	\$178	\$194
Additional revenue	\$48	\$234	\$180
<b>TOTAL - Government</b>	<b>-\$68</b>	<b>\$55</b>	<b>-\$14</b>

### A01. Base Scenario Results Across the Different Distributions: Effects on Government Revenues (Option 2)

#### Effects on Canadian Government Revenue - DMT of C\$80 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Revenue forgone	\$39	\$41	\$45
Additional revenue	\$166	\$177	\$203
<b>TOTAL – Government</b>	<b>\$127</b>	<b>\$136</b>	<b>\$158</b>

#### Effects on Canadian Government Revenue - DMT of C\$100 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Revenue forgone	\$52	\$57	\$62
Additional revenue	\$190	\$209	\$239
<b>TOTAL – Government</b>	<b>\$138</b>	<b>\$152</b>	<b>\$176</b>

#### Effects on Canadian Government Revenue - DMT of C\$200 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Revenue forgone	\$117	\$178	\$194
Additional revenue	\$278	\$391	\$438
<b>TOTAL - Government</b>	<b>\$161</b>	<b>\$213</b>	<b>\$244</b>

### A01. Base Scenario Results Across the Different Distributions: Effects on Consumers (Option 1)

#### Effects on Canadian Consumers - DMT of C\$80 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty and tax revenue net effect	\$3	-\$46	-\$51
Brokerage fee net effect	\$106	\$103	\$104
Import time net effect	-\$6	-\$18	-\$19
<b>TOTAL – Consumers</b>	<b>\$104</b>	<b>\$39</b>	<b>\$35</b>

#### Effects on Canadian Consumers - DMT of C\$100 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty and tax revenue net effect	\$20	-\$59	-\$48
Brokerage fee net effect	\$130	\$122	\$126
Import time net effect	-\$4	-\$23	-\$21
<b>TOTAL – Consumers</b>	<b>\$146</b>	<b>\$41</b>	<b>\$57</b>

#### Effects on Canadian Consumers - DMT of C\$200 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty and tax revenue net effect	\$64	-\$59	\$9
Brokerage fee net effect	\$188	\$207	\$226
Import time net effect	\$5	-\$6	\$9
<b>TOTAL – Consumers</b>	<b>\$257</b>	<b>\$142</b>	<b>\$245</b>



### A01. Base Scenario Results Across the Different Distributions: Effects on Consumers (Option 2)

#### Effects on Canadian Consumers - DMT of C\$80 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty and tax revenue net effect	\$37	\$39	\$43
Brokerage fee net effect	\$116	\$119	\$126
Import time net effect	\$3	\$3	\$4
<b>TOTAL – Consumers</b>	<b>\$156</b>	<b>\$161</b>	<b>\$174</b>

#### Effects on Canadian Consumers - DMT of C\$100 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty and tax revenue net effect	\$50	\$55	\$60
Brokerage fee net effect	\$137	\$142	\$150
Import time net effect	\$3	\$4	\$6
<b>TOTAL – Consumers</b>	<b>\$190</b>	<b>\$202</b>	<b>\$216</b>

#### Effects on Canadian Consumers - DMT of C\$200 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty and tax revenue net effect	\$112	\$173	\$189
Brokerage fee net effect	\$191	\$222	\$235
Import time net effect	\$10	\$24	\$28
<b>TOTAL – Consumers</b>	<b>\$313</b>	<b>\$420</b>	<b>\$452</b>

### A01. Base Scenario Results Across the Different Distributions: Effects on Businesses (Option 1)

#### Effects on Canadian Businesses - DMT of C\$80 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty revenue net effect	\$1	\$0	\$0
Brokerage fee net effect	\$89	\$88	\$88
Paperwork time net effect	\$14	\$14	\$14
Import time net effect	-\$1	-\$4	-\$5
<b>TOTAL – Business</b>	<b>\$102</b>	<b>\$97</b>	<b>\$97</b>

#### Effects on Canadian Businesses - DMT of C\$100 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty revenue net effect	\$2	\$0	\$0
Brokerage fee net effect	\$103	\$101	\$102
Paperwork time net effect	\$17	\$16	\$16
Import time net effect	-\$1	-\$6	-\$5
<b>TOTAL – Business</b>	<b>\$121</b>	<b>\$112</b>	<b>\$114</b>

#### Effects on Canadian Businesses - DMT of C\$200 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty revenue net effect	\$4	\$3	\$4
Brokerage fee net effect	\$143	\$147	\$152
Paperwork time net effect	\$24	\$25	\$27
Import time net effect	\$1	-\$2	\$2
<b>TOTAL – Business</b>	<b>\$172</b>	<b>\$175</b>	<b>\$186</b>

### A01. Base Scenario Results Across the Different Distributions: Effects on Businesses (Option 2)

#### Effects on Canadian Businesses - DMT of C\$80 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty revenue net effect	\$2	\$2	\$2
Brokerage fee net effect	\$91	\$92	\$94
Paperwork time net effect	\$15	\$15	\$16
Import time net effect	\$1	\$1	\$1
<b>TOTAL – Business</b>	<b>\$108</b>	<b>\$109</b>	<b>\$112</b>

#### Effects on Canadian Businesses - DMT of C\$100 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty revenue net effect	\$2	\$2	\$2
Brokerage fee net effect	\$105	\$106	\$108
Paperwork time net effect	\$17	\$18	\$19
Import time net effect	\$1	\$1	\$1
<b>TOTAL – Business</b>	<b>\$125</b>	<b>\$127</b>	<b>\$131</b>

#### Effects on Canadian Businesses - DMT of C\$200 (results in C\$ millions)

	Based on industry interviews	Based on the literature	Based on express courier data
Duty revenue net effect	\$4	\$5	\$6
Brokerage fee net effect	\$143	\$151	\$154
Paperwork time net effect	\$24	\$27	\$28
Import time net effect	\$2	\$6	\$7
<b>TOTAL – Business</b>	<b>\$174</b>	<b>\$190</b>	<b>\$195</b>

### A1. Input Parameters under Various Scenarios

	Base Scenario	Conservative Government Effect	Aggressive Government Effect	Conservative Total Effect	Aggressive Total Effect
Slippage rate	0.80	0.80	0.80	1.00	0.80
Average GST/HST/PST rate	12.32%	12.32%	12.32%	12.32%	12.32%
Average Duty Rate	1.0%	1.5%	1.5%	1.0%	1.0%
Delay for assessed Post Parcels (in days)	3.7	3.7	3.7	5.0	3.0
Time Transit Cost Equivalent Duty Rate	1.0%	1.0%	1.0%	2.0%	1.0%
Canada Post (CP) Handling Cost (brokerage fee)	9.95	9.95	9.95	9.95	9.95
Courier Handling Cost (brokerage fee)	25	25	20	20	25
Total Cost of assessing parcel and collecting tax/duty	38.74	38.74	38.74	38.74	38.74
Cost of 0.15 hour of Employee Time	3.83	3.83	3.83	3.83	3.83
Number of Total Inbound Canada Post valuable txns (mln)	53	45	60	60	60
Consumer Share of Canada Post Parcels	80%	60%	80%	80%	60%
CP Assessment Rate: C\$20 - C\$80	20%	20%	30%	15%	35%
CP Assessment Rate: C\$80 - C\$100	20%	20%	30%	15%	35%
CP Assessment Rate: C\$100 - C\$200	75%	80%	60%	60%	80%
CP Assessment Rate: above C\$200	80%	80%	60%	60%	80%

## B. Fiscal Impact Under Conservative and Aggressive Policy Scenarios: Comparing Different *De Minimis* Thresholds (with Base Scenario Industry Interview-Informed Distribution)

### Effects on Canadian Government Revenue - DMT of C\$80 (results in C\$ millions)

	<i>Option 1</i>			<i>Option 2</i>		
	Base Scenario	Conservative	High	Base Scenario	Conservative	High
Revenue forgone	\$39	\$37	\$49	\$39	\$37	\$49
Additional Revenue	\$34	\$23	\$74	\$166	\$156	\$248
<b>TOTAL – Government</b>	<b>-\$4</b>	<b>-\$15</b>	<b>\$26</b>	<b>\$127</b>	<b>\$119</b>	<b>\$199</b>

### Effects on Canadian Government Revenue - DMT of C\$100 (results in C\$ millions)

	<i>Option 1</i>			<i>Option 2</i>		
	Base Scenario	Conservative	High	Base Scenario	Conservative	High
Revenue forgone	\$52	\$50	\$64	\$52	\$50	\$64
Additional Revenue	\$30	\$19	\$67	\$190	\$179	\$282
<b>TOTAL – Government</b>	<b>-\$22</b>	<b>-\$31</b>	<b>\$2</b>	<b>\$138</b>	<b>\$129</b>	<b>\$218</b>

### Effects on Canadian Government Revenue - DMT of C\$200 (results in C\$ millions)

	<i>Option 1</i>			<i>Option 2</i>		
	Base Scenario	Conservative	High	Base Scenario	Conservative	High
Revenue forgone	\$117	\$110	\$130	\$117	\$110	\$130
Additional Revenue	\$48	\$31	\$108	\$278	\$263	\$381
<b>TOTAL - Government</b>	<b>-\$68</b>	<b>-\$79</b>	<b>-\$22</b>	<b>\$161</b>	<b>\$153</b>	<b>\$251</b>

### C. Total Impact on the Canadian Economy under Conservative and Aggressive Policy Scenarios: Comparing Different *De Minimis* Thresholds

Total effects - DMT of C\$80 (results in C\$ millions)

	<i>Option 1</i>			<i>Option 2</i>		
	Base Scenario	Conservative	High	Base Scenario	Conservative	High
<i>Government</i>						
Revenue forgone	\$39	\$37	\$44	\$39	\$37	\$44
Cost Saving	\$34	\$60	\$31	\$166	\$193	\$229
<b>TOTAL - Government</b>	<b>-\$4</b>	<b>\$23</b>	<b>-\$13</b>	<b>\$127</b>	<b>\$156</b>	<b>\$184</b>
<i>Consumers</i>						
Duty and Tax Revenue Net effect	\$3	-\$24	\$12	\$37	\$36	\$42
Brokerage Fee Net effect	\$106	\$79	\$115	\$116	\$94	\$125
Import Time Net effect	-\$6	-\$33	-\$3	\$3	\$6	\$3
<b>TOTAL - Consumers</b>	<b>\$104</b>	<b>\$21</b>	<b>\$124</b>	<b>\$156</b>	<b>\$135</b>	<b>\$170</b>
<i>Business</i>						
Duty Revenue Net effect	\$1	\$1	\$1	\$2	\$2	\$2
Brokerage Fee Net effect	\$89	\$69	\$98	\$91	\$73	\$104
Paperwork Time Net effect	\$14	\$13	\$18	\$15	\$15	\$20
Import Time Net effect	-\$1	-\$8	-\$2	\$1	\$1	\$2
<b>TOTAL - Business</b>	<b>\$102</b>	<b>\$75</b>	<b>\$114</b>	<b>\$108</b>	<b>\$91</b>	<b>\$128</b>
<b>TOTAL DIRECT ECONOMIC EFFECTS</b>	<b>\$202</b>	<b>\$120</b>	<b>\$226</b>	<b>\$391</b>	<b>\$382</b>	<b>\$483</b>



Total effects - DMT of C\$100 (results in C\$ millions)						
	<i>Option 1</i>			<i>Option 2</i>		
	Base Scenario	Conservative	High	Base Scenario	Conservative	High
<i>Government</i>						
Revenue forgone	\$52	\$50	\$59	\$52	\$50	\$59
Cost Saving	\$30	\$64	\$25	\$190	\$223	\$259
<b>TOTAL - Government</b>	<b>-\$22</b>	<b>\$14</b>	<b>-\$34</b>	<b>\$138</b>	<b>\$173</b>	<b>\$200</b>
<i>Consumers</i>	\$0	\$0	\$0	\$0	\$0	\$0
Duty and Tax Revenue Net effect	\$20	-\$15	\$33	\$50	\$48	\$56
Brokerage Fee Net effect	\$130	\$97	\$141	\$137	\$110	\$146
Import Time Net effect	-\$4	-\$34	-\$1	\$3	\$7	\$4
<b>TOTAL - Consumers</b>	<b>\$146</b>	<b>\$48</b>	<b>\$173</b>	<b>\$190</b>	<b>\$166</b>	<b>\$206</b>
<i>Business</i>	\$0	\$0	\$0	\$0	\$0	\$0
Duty Revenue Net effect	\$2	\$1	\$2	\$2	\$2	\$3
Brokerage Fee Net effect	\$103	\$81	\$116	\$105	\$84	\$119
Paperwork Time Net effect	\$17	\$16	\$21	\$17	\$17	\$23
Import Time Net effect	-\$1	-\$9	-\$1	\$1	\$2	\$2
<b>TOTAL - Business</b>	<b>\$121</b>	<b>\$89</b>	<b>\$139</b>	<b>\$125</b>	<b>\$105</b>	<b>\$147</b>
<b>TOTAL DIRECT ECONOMIC EFFECTS</b>	<b>\$245</b>	<b>\$151</b>	<b>\$277</b>	<b>\$453</b>	<b>\$443</b>	<b>\$553</b>

Total effects - DMT of C\$200 (results in C\$ millions)						
	<i>Option 1</i>			<i>Option 2</i>		
	Base Scenario	Conservative	High	Base Scenario	Conservative	High
<i>Government</i>						
Revenue forgone	\$117	\$112	\$122	\$117	\$112	\$122
Cost Saving	\$48	\$106	\$40	\$278	\$322	\$356
<b>TOTAL - Government</b>	<b>-\$68</b>	<b>-\$7</b>	<b>-\$81</b>	<b>\$161</b>	<b>\$209</b>	<b>\$234</b>
<i>Consumers</i>	\$0	\$0	\$0	\$0	\$0	\$0
Duty and Tax Revenue Net effect	\$64	\$3	\$76	\$112	\$108	\$116
Brokerage Fee Net effect	\$188	\$149	\$197	\$191	\$155	\$199
Import Time Net effect	\$5	-\$7	\$5	\$10	\$23	\$9
<b>TOTAL - Consumers</b>	<b>\$257</b>	<b>\$145</b>	<b>\$279</b>	<b>\$313</b>	<b>\$286</b>	<b>\$324</b>
<i>Business</i>	\$0	\$0	\$0	\$0	\$0	\$0
Duty Revenue Net effect	\$4	\$4	\$5	\$4	\$4	\$6
Brokerage Fee Net effect	\$143	\$114	\$161	\$143	\$115	\$162
Paperwork Time Net effect	\$24	\$23	\$31	\$24	\$23	\$31
Import Time Net effect	\$1	-\$2	\$3	\$2	\$6	\$6
<b>TOTAL - Business</b>	<b>\$172</b>	<b>\$139</b>	<b>\$200</b>	<b>\$174</b>	<b>\$149</b>	<b>\$205</b>
<b>TOTAL DIRECT ECONOMIC EFFECTS</b>	<b>\$361</b>	<b>\$277</b>	<b>\$397</b>	<b>\$648</b>	<b>\$644</b>	<b>\$763</b>