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Barriers Within Borders:

Internal Trade and Domestic Market Integration

Prepared by Federico J. Díez, Trevor Tombe, and Yuanchen Yang

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ABSTRACT: Domestic markets can be far from fully integrated within a country: Canada's interprovincial trade is half the size of its international trade. We estimate internal trade costs using bilateral flows across hundreds of products and sectors and decompose them into geographic and non-geographic components. Embedding these estimates in a multi-region, multi-sector general equilibrium model with input–output linkages and interprovincial migration, we find that removing all non-distance barriers raises real GDP by 6.8 percent in our baseline scenario, with the largest gains accruing to smaller provinces. We also identify services as the sectors generating the largest liberalization gains. Further, sequential provincial liberalization can generate a virtuous cycle, where a province's liberalization increases the gains from (and incentives for) subsequent liberalization for most other following provinces. Finally, we show that the potential gains from domestic market integration can offset the GDP losses from increases in external trade costs.

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WORKING PAPERS

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1 Introduction

Domestic markets are sometimes not fully integrated, especially in large countries with autonomous sub-national governments. This is the case for Canada: despite the country's deep integration into global markets, its domestic market remains fragmented. Relative to its GDP, international exports and imports amount to about two-thirds, while interprovincial trade accounts roughly for only one-third. This pattern is quite pervasive, with seven out of ten provinces trading more with foreign partners than with the rest of the country. This poses a puzzle: why is trade within a single country with shared institutions and frameworks so limited relative to trade across national borders? Survey data reveal that more than one-third of Canadian firms face obstacles when buying goods or services from other provinces or when hiring workers with out-of-province credentials. The border-effects literature finds that provincial borders in Canada are associated with large trade-diverting effects (Anderson and van Wincoop 2003). While internal market fragmentation is not unique to Canada (i.e., similar challenges have motivated integration efforts in the European Union and Australia) Canada's combination of strong external openness and weak internal integration makes the issue particularly salient. Recent policy initiatives, including the One Canadian Economy Act, and a growing set of provincial memoranda of understanding, reflect renewed momentum to address these frictions. However, progress has been uneven across sectors and jurisdictions, underscoring the need for a systematic assessment of where internal barriers remain most binding and what is the economic benefit at stake.

This paper aims to fill this gap by quantifying internal trade costs in Canada and evaluating the economic benefits from reducing them. We first estimate bilateral internal trade costs using the Head-Ries (2001) index, combining detailed Statistics Canada data on interprovincial trade flows—covering nearly 500 product categories, and decompose total trade costs into geographic components (reflecting distance and related frictions) and non-geographic components, which capture policy-relevant barriers, such as those related to regulatory and administrative differences. This breakdown provides a systematic way to isolate the portion of trade costs that is potentially more open to policy reform. We then embed these estimated trade costs in a multi-region, multi-sector general equilibrium model of trade and migration. The model features Ricardian trade with input-output linkages (Caliendo and Parro 2015) and interprovincial labor mobility (Tombe and Winter 2021), allowing us to trace how changes in internal trade frictions propagate through production networks, affecting prices, wages, and allocations. With this framework, we conduct a series of counterfactual simulations, at a high level of disaggregation, that form the core contributions of the paper.

The empirical estimates show that internal trade costs are large and highly heterogeneous. Overall trade costs average 79 percent (trade-weighted) across province-product pairs, with substantial dispersion. Once geographic factors are stripped out, non-distance trade costs still average about 9.3 percent—roughly in line with tariff-equivalent border effects estimated in the Canadian literature (Bemrose et al. 2020). These costs vary systematically across regions and sectors. Trade among the largest provinces (Ontario, Quebec, Alberta, and British Columbia) is relatively frictionless, especially for goods, whereas smaller provinces and territories face markedly higher barriers. In contrast, services are heavily affected by internal trade costs, with many service sectors facing barriers exceeding 50 percent. This pattern suggests that internal fragmentation is concentrated in specific locations and activities.

Next, we turn to the quantitative implications of the estimated frictions. In our first simulation, we consider the full elimination of all non-distance internal trade costs. In the long run, this reform raises Canada's real GDP by 6.8 percent—about C$220 billion in 2025 terms—through improved allocative efficiency and production linkages across regions. The gains, however, are unevenly distributed. Smaller provinces and territories benefit disproportionately, with gains often in the double-digits. By contrast, larger provinces experience more modest, although still meaningful, improvements. Labor mobility amplifies these effects as workers relocate toward regions where real wages rise the most, reinforcing the reallocation of economic activity. These results highlight both the aggregate efficiency gains from internal market integration and its potential to (partly) narrow regional disparities.

Our second set of simulations considers separate liberalizations by sector, shedding light on where liberalization generates the largest gains and how reforms might be sequenced. The results indicate stark sectoral differences as roughly 90 percent of the total gains from full liberalization originate in service sectors. Finance and telecommunications alone account for the largest individual contributions to aggregate GDP; transportation and professional services constitute a second block of high-impact sectors. More generally, we find that the impact of liberalizing a given sector is well predicted by two factors, namely, the level of interprovincial imports in a sector and its economy-wide influence through input-output linkages. Because improvements in upstream services lower costs throughout the production network, targeted reforms in these sectors can generate outsized spillovers. This implies a clear sorting, with the liberalization of large, upstream service sectors yielding the greatest economic returns.

A third set of simulations show that internal trade liberalization can generate a virtuous cycle of trade liberalization across provinces. When reforms are implemented sequentially rather than simultaneously, early movers often increase the gains available to those that

liberalize later. In our simulations, indeed over two-thirds of possible reform sequences display this property. The effect is particularly strong among geographically proximate provinces, where production networks are tightly intertwined. By altering relative prices and market access, early liberalization reshapes the economic environment in ways that raise the payoff to subsequent reforms elsewhere. This finding suggests that decentralized, province-led initiatives can create endogenous incentives for broader integration.

Finally, we also benchmark internal liberalization gains in the context of increasing international trade costs. Specifically, we ask how much internal trade liberalization would be required to offset an increase in international trade costs, such as higher foreign tariffs. We find that a 10 percent increase in external trade costs could be offset (i.e., keeping real GDP unchanged), by a 5.2 percent reduction in internal trade costs, i.e., roughly a 0.5 percent reduction in internal barriers for every one percent increase in external barriers. At the same time, the interpretation of this exercise requires caution because, while external trade shocks are typically already felt at short horizons, the gains from internal liberalization materialize gradually over the long-run.

The paper contributes to three strands of the literature. First, it advances the literature on internal trade in Canada by providing a highly disaggregated, economy-wide assessment of internal trade costs and by quantifying the gains from alternative reform paths, extending work by Albrecht and Tombe (2016), Bemrose et al. (2020), Alvarez et al. (2019), and Tombe and Winter (2021). This degree of sectoral granularity permits a richer characterization of internal market frictions and the identification of the sectors associated with the largest potential gains from integration. Second, it contributes to the broader literature on internal trade barriers by highlighting the central role of services and production networks in shaping the gains from integration, complementing studies by Agnosteva et al. (2019) Atkin and Donaldson (2015), and Ramondo et al. (2016), and extending quantitative work on internal frictions by Tombe and Zhu (2019), Coşar and Fajgelbaum (2016), and Fajgelbaum and Redding (2022). Third, it adds new evidence to the border-effects literature by documenting substantial and heterogeneous within-country border frictions in Canada using recent data, confirming and extending the classic findings of Anderson and van Wincoop (2003) and McCallum (1995). The remainder of the paper develops these points in detail.

The rest of the paper is organized as follows. Section 2 provides a description of internal trade in Canada, comparing it against international trade. Section 3 estimates the trade costs, and breaks them down into geographic- and non-geographic-related components. Section 4 describes the model used for the analysis while Section 5 presents the simulation results. Finally, Section 6 concludes.

2 Overview of Internal Trade

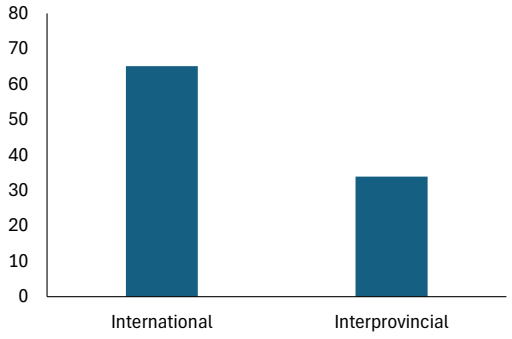
As a large, geographically disperse federation, Canada depends on the smooth movement of goods, services, and inputs to allocate resources efficiently. However, despite shared national institutions and extensive connectivity infrastructure, internal market integration is still shaped by province-specific regulatory regimes and administrative requirements. We begin this section by presenting some key stylized facts laying out the scene on internal trade.

The facts are presented in Figure 1. Panel A shows that Canada's international trade is roughly twice as large as interprovincial trade. Indeed, international exports and imports amount to 65.1 percent of GDP, compared with 33.9 percent of GDP for interprovincial flows—a ratio of about 1.9 times.[1] Panel B documents that this pattern is broad-based across the country, as 7 out of 10 provinces trade more internationally than inter-provincially (i.e., their interprovincial-to-international trade ratio is below one), with Manitoba, Nova Scotia, and Prince Edward Island as notable exceptions. Panel C shows that the composition of trade differs markedly by destination. International trade is predominantly in goods (78 percent goods, 22 percent services), whereas a majority of interprovincial trade is in services (58 percent services, 42 percent goods). This reflects Canada's role as a resource exporter internationally, while provinces exchange mostly services like financial, professional, transportation. Finally, Panel D shows substantial heterogeneity across jurisdictions: medium and smaller provinces have goods-heavy interprovincial trade, while Ontario, British Columbia, and the territories are mostly services-oriented. These facts suggest that Canada's internal market is far from frictionless and point to low internal trade (relative to international trade) as a salient feature of the Canadian economy.

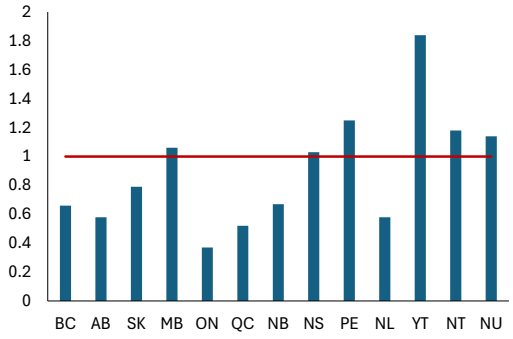
These facts thus posit the existence of a puzzle: why isn't there relatively more internal trade given Canada's geography, and degree of international openness? A leading explanation is the presence of sizable internal trade (non-tariff) barriers. StatCan surveys (Table: 33-10-0944-01) report that over one-third of businesses experiences obstacles when purchasing goods or services from another province (mostly transportation and distance-related but also delays between placing and receiving orders, lack of profitability or inventory available). A similar fraction of businesses find obstacles when hiring individuals with professional certifications from another province, with the most common reported causes being the waiting times and costs associated with hiring these individuals and the amount of paperwork involved (StatCan Table: 33-10-0974-01). This interpretation is also in line with the trade literature on border

[1]The shares are defined adding exports and imports–which in the case of aggregate interprovincial trade may look like double counting. However, this measure allows for comparability with international trade (where imports are different from exports) and provides a consistent picture of internal market integration.

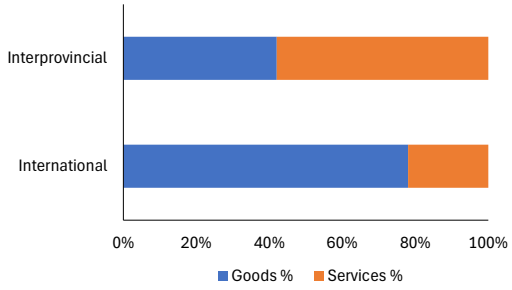
Figure 1: Stylized Facts on Internal Trade in Canada



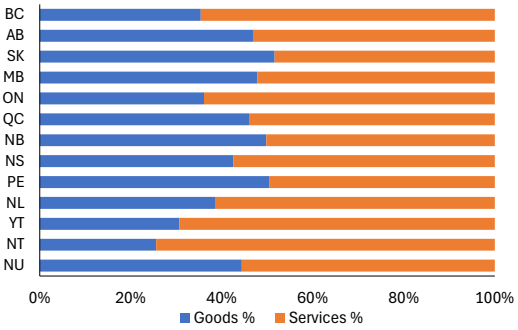
(a) Trade Intensity as % of GDP



(b) Interprov. to Internat. Trade Ratio



(c) Composition: Goods vs Services



(d) Interprovincial Trade Composition

Source: StatCan Table 36-10-0222-01 and authors' calculations.
Note: all charts use data for 2024.

effects. Anderson and van Wincoop (2003) document that "national borders" can have large trade-diverting effects and their estimates imply much stronger effective subnational border frictions in Canada than in the United States.[2]

Evidence on recent policies is also suggestive. Figure 2 plots measures of regulatory intensity, constructed from the text of federal and provincial regulations (RegData), that show substantial variation across provinces in the number of restrictions relative to the size of the economy. Smaller provinces have a higher restrictions per unit of GDP and population. These indicators do not measure trade barriers directly, but do suggest that policy environments differ across jurisdictions, which may translate into higher effective internal trade costs. Consistent with this, there has been recent momentum by governments at the national and provincial level to reduce barriers (Appendix A). While Canada has pursued successive internal trade agreements—from the Agreement on Internal Trade (AIT) to the Canadian Free Trade Agreement (CFTA)—the recently passed One Canadian Economy Act is the most aggressive push yet to remove internal barriers. This is further strengthened by several provinces introducing interprovincial trade legislation and signing memoranda of understanding aimed at mutual recognition and streamlined mobility. These developments are important, but their uneven scope across sectors and provinces requires a granular approach to detect where internal frictions remain most binding. The next section presents an indirect approach to estimate internal trade costs at a very detailed level, across province pairs and detailed industries, that will allow us to be very granular identifying where the most pressing bottlenecks are located.

3 Estimating Internal Trade Costs

We estimate (mostly unobservable) internal trade costs using a standard approach in the international trade literature, the Head and Ries (2001) Index. At its core, the index examines the share of expenditures on an item by buyers in one location that is allocated to sellers in another, and compares it to the share of expenditures on that same item by buyers in the other location sourced from sellers in the first location. To the extent that buyers disproportionately source their purchases from local sellers, one can conclude that trade costs are higher across regions than within them.

[2]In their gravity framework, after conditioning on size and distance, the presence of the national border raises trade among Canadian provinces by a factor of about six, whereas the comparable increase in trade among U.S. states is only about 25 percent. Given that the estimates are based on province–province and state–state trade flows, the larger inward reallocation suggests stronger internal trade barriers in Canada.

Figure 2: Regulations and Statutes by Province

Source: RegData and authors' staff calculations. *Notes:* (1) RegData Canada datasets employ the QuantGov platform to download and analyze regulations issued by the Canadian federal government and each of the Canadian provincial governments, turning thousands of pages of dense regulatory text into datasets; (2) darker colors denote more restrictions per unit of GDP, with comparable results when scaled by population.

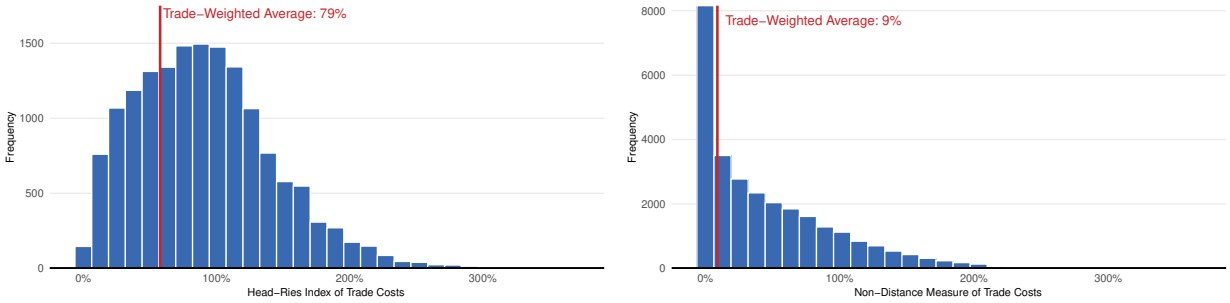
More formally, the Head-Ries Index combines observed trade flows between jurisdictions for a given product (or sector) with empirical estimates of the elasticity of trade for those items. Specifically, the trade costs between regions n and i can be written as:

$$\bar{\tau}_{ni} = \left(\frac{\pi_{ni}\pi_{in}}{\pi_{nn}\pi_{ii}} \right)^{\frac{-1}{2\theta}}, \tag{1}$$

where τ_{ni} is the trade cost in region n on goods from region i, π_{ni} is the share of spending between both regions, and θ is the elasticity of trade with respect to trade costs—a key parameter that measures how sensitive trade flows are to such frictions. If two regions trade with each other as much as with themselves, then this measure is equal to one, implying no trade barriers. Instead, if the observed volume of trade between regions falls short, the trade elasticity allows us to infer the implied level of trade costs that would reconcile the observed data with the counterfactual volume of trade. Although based on strong modeling assumptions, the Head-Ries Index offers a consistent and intuitive way to quantify trade frictions using observed trade flows and estimated elasticities.

To implement this approach, we need data on trade flows and product-level trade elasticities. Recent Statistics Canada data provides detailed bilateral trade flows across many region-product combinations. For elasticity estimates, we use recent work by Fontagné et al. (2022), who estimate this for many different aggregations. These are matched to nearly 500 product categories in Canadian internal trade data, which can be aggregated to the detail-level sectoral classification scheme for use in the model-based analysis to come. We display the results of this in Figure 3a. Internal trade costs are sizable, (trade-weighted) averaging 79 percent. From the figure it is also apparent that there is substantial heterogeneity, with costs ranging from zero to over 200 percent.

Figure 3: Distribution of Internal Trade Costs in Canada (2021)



(a) Total Trade Costs **(b) Non-Distance Trade Costs**

Note: Panel (a) displays the total measure of trade costs based on the Head-Ries Index values across region-product pairs. Panel (b) displays the non-distance measure of trade costs across all region-industry pairs, which is the main input into the quantitative analysis to come.

While average internal trade costs in Canada are high, much of this reflects unavoidable geography since shipping goods or delivering services across a country as large and sparsely populated as Canada naturally involves time and expense. To better isolate trade barriers that are potentially addressable (such as regulatory differences or administrative burdens) we focus on estimating non-distance trade costs, that is, the portion of overall trade costs not explained by geography. We accomplish this by stripping out the portion of trade costs attributable to distance, and by capturing asymmetries in trade costs between provinces. Specifically, we regress the Head-Ries Index for each origin-destination-product pair on an adjusted measure of bilateral distance, defined as the distance between provinces relative to their internal distances. Our specification also allows for product-specific sensitivity to distance and includes controls for region-specific factors that may systematically affect trade levels:

$$\ln(\bar{\tau}_{ni}^{j}) = \alpha^{j} \ln(Dist_{ni}) + \gamma_{n}^{j} + \gamma_{i}^{j} + \epsilon_{ni}^{j} \tag{2}$$

where j indexes a sector, $Dist_{ni} = d_{ni}/\sqrt{d_{nn}d_{ii}}$ is the relative distance between regions n and i, and $\{\gamma_n, \gamma_i\}$ are exporter and importer fixed effects. It follows that our non-geographic measure of trade costs is defined as $\ln \tau^j_{ni} \equiv \ln \bar{\tau}^j_{ni} - \hat{\alpha}^j \ln(Dist_{ni})$. Thus, this measure captures the residual bilateral frictions dampening trade between provincial pairs after accounting for geographical factors. These frictions, which are barriers to integration, are potentially amenable to policy reform, even if may also partly reflect persistent factors such as institutional and informational frictions that are not directly policy-driven. Nevertheless, the measure remains informative for policy analysis, as reforms that deepen market integration would reduce residual frictions irrespective of the exact channels through which they operate.

Overall, we estimate the average trade-weighted non-distance trade cost in Canada to be approximately 9.3 percent. The average trade cost itself is remarkably in the same ballpark as estimates by Bemrose et al. (2020), who after controlling for the short distances that characterize *intra*provincial trade, find that border effects equivalent to a 6.9 percent tariff.[3] Besides the estimated average level, there is substantial non-distance trade variation across locations and sectors (Figure 3b).

To illustrate the pervasiveness of heterogeneity, in Tables 1 and 2 we display the average bilateral non-distance trade costs between all provinces-territories pairs for goods and services, respectively. Two features stand out from the tables. First, larger provinces consistently face lower trade costs with one another, regardless of whether they are geographically adjacent. Trade between Ontario, Quebec, Alberta, and British Columbia tends to be relatively frictionless, with estimated costs often below 1 percent for goods. In contrast, smaller provinces and territories—particularly in Atlantic Canada and the North—face significantly higher trade costs with the rest of the country, in some cases exceeding 30 percent or even 50 percent for goods. For context, the national average trade cost for goods is 1.3 percent. Second, service trade costs are notably higher than those for goods but also display significant variation across Canada. Trade between the four largest provinces shows the lowest costs, typically below 20 percent. In contrast, trade costs involving the territories and smaller provinces are considerably elevated, sometimes even exceeding 100 percent, compared to the national average of 16.8 percent for services.

In Table 3 we report estimated trade costs across broad industry sectors to reveal further details, expanding the key patterns just described.[4] Goods-producing sectors generally ex-

[3]Bemrose et al. (2020) show how that lack of accounting for internal intra-provincial trade can lead to upward biases in the trade costs estimates (which average 13.6 percent in their case).

[4]The full analysis to come uses trade cost estimates for 230 sectors based on Statistics Canada's "detail level" classification.

Table 1: Bilateral Average Non-Distance Trade Costs for Goods (%)

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU
BC		0.5	1.7	0.5	0.0	0.0	0.8	0.7	4.4	11.2	6.5	5.6	0.9
AB	0.9		1.4	0.5	0.1	0.1	1.1	0.4	7.7	2.9	33.8	0.9	26.6
SK	3.8	2.9		2.9	1.2	1.6	2.6	3.3	11.3	37.0	62.0	58.7	25.6
MB	1.1	0.5	1.3		0.5	0.7	2.4	0.7	8.1	1.9	19.4	10.5	33.7
ON	0.1	0.0	0.1	0.1		0.6	1.0	0.4	2.4	1.9	3.2	5.4	3.9
QC	0.5	0.1	1.1	0.2	0.9		4.7	4.1	21.8	15.1	1.7	10.8	7.0
NB	2.4	0.2	1.9	0.7	3.0	9.9		9.6	11.4	1.0	49.5	29.8	11.1
NS	0.4	0.4	1.7	2.4	1.4	4.6	5.3		17.0	10.2	39.0	11.9	2.0
PE	3.4	4.4	13.5	7.3	4.9	14.3	1.0	9.3		53.0	586	86.7	81.4
NL	1.3	4.5	25.7	16.9	8.4	6.5	3.6	5.7	9.6		341	181	232
YT	3.0	8.2	5.7	6.2	12.1	26.6	26.3	26.8	586	36.4		31.8	49.2
NT	28.3	21.2	39.7	23.6	17.1	38.0	56.3	30.3	121	54.4	21.5		1.0
NU	19.2	37.2	66.1	48.5	43.6	42.3	11.0	75.0	125	27.4	48.0	28.2	

Note: Rows are importers and columns are exporters.

Table 2: Bilateral Average Non-Distance Trade Costs for Services (%)

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU
BC		27.5	41.3	13.9	4.9	8.6	25.2	41.6	58.4	46.3	47.0	81.4	121
AB	22.6		32.9	16.8	4.3	11.8	30.3	35.2	67.7	30.8	59.2	50.1	117
SK	26.4	33.9		25.1	16.9	20.4	57.5	58.5	103	56.2	59.0	105	160
MB	20.6	31.1	42.1		12.7	19.0	45.0	58.7	78.3	81.9	78.9	71.2	134
ON	7.4	8.9	11.6	12.7		18.3	39.0	26.6	26.8	29.0	50.9	37.7	71.3
QC	14.6	19.2	34.8	22.6	16.7		52.7	48.5	64.3	44.6	90.2	90.1	96.8
NB	20.1	19.3	47.5	39.7	20.3	34.2		57.4	51.2	41.0	135	105	209
NS	18.9	20.2	45.7	43.9	15.7	36.0	54.6		77.5	32.5	95.9	83.8	143
PE	23.2	30.2	67.8	70.2	27.4	35.0	42.9	71.8		56.5	113	112	310
NL	37.3	18.2	82.9	58.8	27.0	33.9	37.7	37.2	43.4		99.0	77.3	137
YT	28.7	35.8	92.4	64.9	58.1	55.8	80.3	116	179	88.3		20.0	137
NT	58.5	45.4	157	79.8	58.1	71.6	164	108	152	185	62.2		37.3
NU	73.8	84.6	163	180	82.1	56.9	254	90.0	285	127	35.5	36.0	

Note: Rows are importers and columns are exporters.

Table 3: Average Non-Distance Trade Costs for Summary-Level Sectors (%)

Industry	Trade Cost (%)
Crop and animal production	0.0
Forestry and logging	2.4
Fishing, hunting and trapping	15.5
Support activities for agriculture and forestry	22.9
Mining, quarrying, and oil and gas extraction	0.0
Utilities	36.2
Other activities of the construction industry	18.4
Manufacturing	0.3
Wholesale trade	1.1
Retail trade	60.6
Transportation and warehousing	12.5
Information and cultural industries	38.2
Finance, insurance, real estate, rental and leasing	13.1
Professional, scientific and technical services	6.0
Administrative and support, waste management	3.5
Educational services	41.8
Health care and social assistance	55.5
Arts, entertainment and recreation	17.0
Accommodation and food services	23.6
Other services (except public administration)	16.4

Note: Non-market sectors were excluded.

hibit low costs, including crop and animal production (0.0 percent), mining and oil and gas extraction (0.0 percent), and manufacturing (0.3 percent). Forestry and logging (2.4 percent), wholesale trade (1.1 percent), and construction-related activities (18.4 percent) also fall on the lower end of the distribution. Service sectors display higher estimated trade costs. Retail trade (60.6 percent), information and cultural industries (38.2 percent), and accommodation and food services (23.6 percent) are among the ones with highest costs. Trade costs for education (41.8 percent) and health care and social assistance (55.5 percent) are also elevated.

4 The Model

We use a multi-region, multi-sector general equilibrium model, following Alvarez et al. (2019). Specifically, the framework is a Ricardian trade model (*a-là* Eaton and Kortum, 2002) with inter-industry input–output linkages (Caliendo and Parro, 2015) and interprovincial labor mobility (Tombe and Winter, 2021). Below we provide an overview of the model but leave the detailed derivations to the papers just cited.

Framework and Preferences. The economy consists of $n \in \{1, \ldots, N, N+1\}$ regions, with N within Canada (e.g., provinces and territories) and one representing the rest of the world. Each region n is populated by L_n identical workers who supply one unit of labor inelastically and have identical preferences. Agents derive utility from consuming a continuum of goods produced in J different sectors. Preferences are Cobb–Douglas:

$$U_n \;=\; \prod_{j=1}^{J} \left(C_n^j\right)^{\beta_j} \;, \tag{3}$$

where C_n^j denotes consumption of sector-j composite by a representative agent in region n and $\beta_j \in (0,1)$ is the expenditure share on sector j goods (with $\sum_{j=1}^{J} \beta_j = 1$). Each composite C_n^j is a constant-elasticity-of-substitution (CES) aggregate of a continuum of differentiated varieties $\nu \in [0,1]$ produced across all regions in sector j.

Production Technology. Within each region i, firms in sector j produce output using labor and intermediate inputs under constant returns to scale. Specifically, a firm in region i and sector j, with productivity $\varphi_i^j(\nu)$, produces variety ν output according to a Cobb–Douglas production function:

$$y_i^j(\nu) \;=\; \varphi_i^j(\nu)\; \ell_i^j(\nu)^{\phi_j} \prod_{k=1}^{J} m_i^{j,k}(\nu)^{\,\gamma_{jk}} \,, \tag{4}$$

where $\ell_i^j(\nu)$ is the labor input, $m_i^{j,k}(\nu)$ is the quantity of sector-k intermediate input, $\phi_j \in (0,1)$ is the labor share in sector j, and γ_{jk} is the input cost share of sector k in sector j (with $\sum_{k=1}^{J} \gamma_{jk} = 1 - \phi_j$). This nested production structure allows for rich inter-industry linkages as industries purchase inputs from each other according to the matrix $[\gamma_{jk}]$, which we calibrate to Statistics Canada's national symmetric input–output table.[5]

Firms are heterogeneous in their productivity levels $\varphi_i^j(\nu)$, which we assume are drawn from a Fréchet distribution, with cumulative distribution function $F_i^j(\varphi) \;=\; \exp\Big[-\, A_i^j\, \varphi^{-\theta_j} \Big]$,

[5] Statistics Canada data table 36-10-0001-01.

where $A_i^j > 0$ is a technology parameter capturing region i's average productivity in sector j, and $\theta_j > 0$ is a parameter governing the dispersion of productivities in sector j—a larger θ_j implies less variability in productivity draws in sector j and higher trade-cost elasticity of trade flows.

Firms in region i hire labor at wage w_i and purchase intermediate inputs at domestic prices P_{ik} for sector-k goods. Thus, the cost of an input bundle in sector j is

$$c_i^j \;\propto\; w_i^{\phi_j} \prod_{k=1}^{J} \left(P_i^k\right)^{\gamma_{jk}} . \tag{5}$$

Perfect competition implies that firms charge prices equal to marginal cost. A firm with productivity φ_i^j will then set a factory-gate price $p_i^j(\nu) = c_i^j/\varphi_i^j(\nu)$.

Trade Flows and Firm Dynamics. Trade across regions is subject to iceberg costs, i.e., to deliver one unit of a sector-j good from region i to region n, $\tau_{ni}^j \geq 1$ units must be shipped. We interpret the term $\left(\tau_{ni}^j - 1\right)$ as the *ad valorem* trade cost on shipments from region i to region n in sector j (with $\tau_{nn}^j = 1$).

Consumers in region n will buy each variety from the lowest-cost source and the share of region n's expenditure spent on sector-j goods from region i, π_{ni}^j, is given by

$$\pi_{ni}^j \;=\; \frac{A_i^j \left(c_i^j\, \tau_{ni}^j\right)^{-\theta_j}}{\sum_{k=1}^{N+1} A_k^j \left(c_k^j\, \tau_{nk}^j\right)^{-\theta_j}} . \tag{6}$$

This last equation implies that lower trade barriers (τ_{ni}^j) or lower production costs (c_{ij}) increase region i's share of region n's expenditure. Further, with lower τ_{ni}^j, firms in region i with relatively low marginal costs (high φ) gain market share in region n, increasing their sales and production. Conversely, firms from region n with relative high costs (low φ) lose market share to more competitive extra-regional suppliers, contracting their output.

Combining over all source regions i gives the CES price index for sector j in region n: $P_n^j \propto \left(\sum_{i=1}^{N+1} A_i^j \left(c_i^j\, \tau_{ni}^j\right)^{-\theta_j}\right)^{-1/\theta_j}$, which is the unit cost of the sector-j composite in region n. The overall consumer price index in region n is then equal to $P_n = \prod_{j=1}^{J} P_{nj}^{\beta_j}$.

Gains from Trade and Real Wages. In autarky (i.e., when $\tau_{ni}^j \to \infty$ for $i \neq n$), each region consumes only locally produced varieties ($\pi_{nn}^j = 1$). As τ's fall, two effects occur. First, the home expenditure shares π_{nn}^j decline as region n can purchase a larger variety of

goods at lower cost, which directly reduces P_n and raises real income. Second, due to input–output linkages, cost reductions in one sector benefit other sectors that use that sector's output as an input, magnifying the gains from trade. Formally, holding technologies A_{ij} fixed, region's n real income is inversely related to its home shares:

$$\ln \frac{w_n}{P_n} \propto -\sum_{j=1}^{J} \frac{g_j}{\theta_j} \ln \pi_{nn}^j , \tag{7}$$

where g_j captures sector j's overall importance in consumption and production.[6] According to equation (7), trade liberalization (a fall in τ_{ni}^j's) lowers π_{nn}^j and raises region n's real wage w_n/P_n. Intuitively, interprovincial trade improves allocative efficiency: provinces import more of the goods in which other regions have a comparative advantage and reallocate resources toward sectors where they are relatively more productive, leading to higher real incomes. Input–output linkages magnify these gains, since cheaper inputs in one sector reduce costs across the production network.

Interprovincial Labor Mobility. Workers are perfectly mobile within a region and can also move across provincial borders, although interprovincial labor mobility is subject to frictions. Following (Tombe and Winter, 2021), we assume that moving to a different province entails some costs due to idiosyncratic preference differences over locations. As trade costs change, this leads to a smooth migration response, as regions with higher real wages will attract workers until the income gains of moving are offset by migration frictions. In equilibrium, the share of the national labor force ($l_n = L_n / \sum_i L_i$) living in province n is

$$l_n = \frac{(\delta_n w_n / P_n)^\kappa}{\sum_{i=1}^{N} (\delta_i w_i / P_i)^\kappa} , \tag{8}$$

where z_n captures the willingness to move to region n and is assumed to be Frèchet-distributed, $F_n(m) = \exp[-\delta_n m^{-\kappa}]$, and κ is the migration income-elasticity, with higher κ implying more mobile labor. This implies that provinces experiencing above-average real wage gains (e.g., due to improved market access) will attract migrants while regions with smaller or negative real wage changes will lose workers. It follows that migration amplifies the regional output gains by shifting labor.

[6] Formally, g_j is the jth element of $(I - \tilde{\mathbf{\Gamma}})^{-1}\boldsymbol{\beta}$, where $\tilde{\mathbf{\Gamma}}$ is the $J \times J$ matrix with elements $\tilde{\gamma}_{jk} = \gamma_{jk}(1-\phi_k)$. Thus, g_j reflects both the direct expenditure share on sector j and the indirect use of sector-j output as an intermediate input in all sectors.

Aggregate Effects. To evaluate the welfare implications of changes in trade costs, we focus on real GDP at the regional and national levels. In our setup, this corresponds to labor income deflated by local prices,

$$Y_n \;=\; \frac{w_n\, L_n}{P_n}\,. \tag{9}$$

In any counterfactual equilibrium, for instance driven by changes in trade costs (that is, $\hat{\tau} = \tau'/\tau$), the proportional change in region n's real GDP ($\hat{Y}$) can be decomposed into the change in real income per worker (which equals labor productivity) and the change in employment:[7]

$$\hat{Y}_n = Y'_n/Y_n = \frac{w'_n/P'_n}{w_n/P_n} \times L'_n/L_n = \hat{y}_n \times \hat{L}_n. \tag{10}$$

Finally, to assess the national change in real GDP, we let ω_n denote region n's share of initial aggregate nominal GDP. Then, the change in Canada's total real GDP can be written as:

$$\hat{Y}_{\text{Canada}} \;=\; \sum_{n=1}^{N} \omega_n\, \hat{Y}_n \;=\; \sum_{n=1}^{N} \omega_n\, \hat{y}_n\, \hat{L}_n\,. \tag{11}$$

Calibration and Simulation. We calibrate the model to reproduce key features of Canada's economy. The expenditure shares $\{\beta_j\}$ and input–output coefficients $\{\phi_j, \gamma_{jk}\}$ are set to match the 2021 Statistics Canada Supply-Use Tables. Trade elasticity parameters $\{\theta_j\}$ are drawn from the literature. For goods-producing sectors, we use estimates from Fontagné et al. (2022), and for services sectors we assume $\theta_j \approx 5$, following Costinot and Rodríguez-Clare (2014). The migration elasticity κ is chosen to reflect interprovincial mobility patterns (we set $\kappa = 1.5$, consistent with Helliwell 1996 and the estimates used by Tombe and Winter 2021). We also conduct some robustness checks of our baseline results by allowing for alternative parameter values. Finally, to conduct counterfactual simulations we use the "exact hat algebra" method (Caliendo and Parro, 2015), so starting from the calibrated baseline equilibrium, we impose counterfactual changes in the trade cost parameters τ^j_{ni} and solve for the new equilibrium in terms of proportional changes ("hats").

[7]Note that since labor is the only production factor and there is perfect competition in the model, workers are paid their marginal product making labor productivity equal to the real wage (and to income per worker).

5 Simulations

This section presents our estimates of the economic effects of non-distance internal trade costs in Canada based on the model just described. The analysis highlights the impact on incomes, productivity, and employment implied by changes in our measured internal trade barriers across the different regions and Canada at large. As already mentioned, these estimates should be interpreted as the long-run effects.

5.1 Full Internal Trade Liberalization

Our first scenario considers the full elimination of all measured non-distance-related internal trade costs. For example, the average sector faces total trade costs of 79 percent, of which 9 percent are non-distance trade costs while the rest are geographic, not policy-relevant, costs. Formally, we have trade costs $\tau = 1.79 = 1.64 \times 1.09$. Therefore, removing all non-distance costs would correspond to a relative change in the trade cost parameter of $\hat{\tau} = 1/1.09$, that leaves the new level of trade costs at $\tau' = 1.64$. While eliminating all internal trade barriers at once may be unfeasible, this scenario provides a useful benchmark as it offers a measure of just how much these frictions reduce Canada's productivity.

Table 4 reports the impact of removing all internal trade costs. We find that a full removal of internal trade costs unrelated to distance would raise real GDP by 6.8 percent.[8] This boost stems from a corresponding increase in labor productivity, driven by a more efficient allocation of resources across sectors and regions. More productive firms expand; less productive ones contract or exit the market entirely; see equation (6) above.

However, these gains are not evenly distributed. Smaller provinces and territories, which tend to trade more intensely with other regions (Figure 1) and face higher trade costs (Tables 1 and 2), see the biggest benefits. Labor productivity (which equals GDP per worker) rises by 3.6 percent in Ontario, 4.9 percent in Alberta, 5.7 percent in British Columbia, and 6.9 percent in Quebec. All other provinces enjoy double-digit productivity gains. In Atlantic Canada, for instance, the benefits range from 15.4 percent in Newfoundland and Labrador to 39.5 percent in Prince Edward Island. The territories see the largest improvements of all, ranging from 37.9 percent in Yukon to 76.7 percent in Nunavut.

Beyond productivity gains, we also observe a spatial redistribution of labor. People move to areas where living standards improve the most. As a result, population and employment

[8] At the national level, increases in total real GDP are to equal those in GDP per worker. At the provincial level, these two are different due to internal migration across provinces; see equation (10).

Table 4: Gains from Fully Eliminating Non-Distance Internal Trade Costs

Province/ Territory	Real GDP per Worker	Employment
BC	5.7	-1.6
AB	4.9	-2.8
SK	13.9	10.1
MB	12.2	7.6
ON	3.6	-4.5
QC	6.9	0.0
NB	26.6	29.1
NS	23.7	24.6
PE	39.5	49.1
NL	15.4	12.3
YT	37.9	46.6
NT	39.1	48.5
NU	76.7	112.8
Canada	6.8	–

Notes: Each cells displays the percent change in real GDP per worker and employment in all provinces and territories from a complete elimination of measured non-distance internal trade costs.

decline modestly in Ontario, Alberta, and British Columbia, while Quebec sees little change. In contrast, the smaller provinces, especially those in Atlantic Canada, and the territories see substantial population increases. Prince Edward Island, for example, experiences a 49 percent increase in both population and employment.

Importantly, these results represent long-run outcomes. Even if internal trade barriers were removed overnight, it would take years—possibly decades—for migration patterns, production decisions, wages, prices, and firm sizes to adjust and for the gains to materialize. Yet the long-run benefits are significant, as the gains are equivalent to roughly $220 billion in additional real income by 2025 terms.

5.2 Sector-Specific Gains from Liberalization

The previous result on full liberalization provides a useful benchmark but such process will not take place overnight. Instead, liberalization would likely occur sequentially, with some sectors moving first and others later on. The issue then becomes whether the sectoral order matters. To explore this alternative, we simulate the impact on Canada's aggregate real GDP

from lowering internal trade costs one sector at a time. The individual economic impact of such narrowly focused reforms is understandably smaller than the aggregate gains discussed earlier. However, by running this simulation across all 230 sectors individually, we can rank their contributions to the national economy and identify what sector-specific reforms could yield the largest gains.

Table 5: Top Industries by Gains from Removing Non-Distance Costs

Industry	Total Gains	Direct	Indirect
Banking and other depository credit intermediation	0.67%	0.25%	0.41%
Telecommunications	0.61%	0.31%	0.30%
Lessors of real estate	0.24%	0.13%	0.11%
Food services and drinking places	0.22%	0.16%	0.07%
Computer systems design and related services	0.14%	0.05%	0.09%
Insurance carriers	0.14%	0.05%	0.09%
Air transportation	0.13%	0.05%	0.08%
Business support services	0.09%	0.02%	0.07%
Offices of physicians	0.08%	0.03%	0.06%
Support activities for transportation	0.08%	0.02%	0.07%
Food and beverage stores	0.08%	0.06%	0.02%
Truck transportation	0.07%	0.02%	0.06%
Electric power generation, transmission and distribution	0.07%	0.02%	0.05%
Local credit unions	0.06%	0.03%	0.03%
Architectural, engineering and related services	0.06%	0.02%	0.05%

Notes: all gains (total, direct, and indirect) expressed as a share of GDP. The table excludes government and non-market sectors (i.e., government health services, government education services, other government services, non-profit institutions, educational services).

Table 5 presents the top 15 sectors in terms of sectoral gains from trade liberalization. That is, we simulate fully removing the trade costs of any given sector while keeping trade costs fixed for the remaining 229 sectors, which allows us to observe the isolated effect of liberalizing that single sector on Canada's economy. A handful of sectors emerge as particularly important, especially finance and telecommunications. Removing trade frictions within banking and other deposit-taking financial institutions would raise real GDP by 0.7 percent. Similarly, eliminating barriers in telecommunications would increase GDP by 0.6 percent. These two sectors—by far—show the largest individual impacts. Real estate, food services, transportation, and professional services form a second tier contributing meaningfully to the aggregate gain. The model itself is silent on why specifically these sectors, recovering the trade frictions but not their underlying source.[9] But the pattern is consistent with some

[9]Estimates for some sectors should be interpreted with caution. For instance, in the case of healthcare

institutional features of the Canadian economy. For instance, the estimates are consistent with frictions arising from jurisdiction-specific regulation, permitting and deployment procedures, and licensing and procurement regimes which can raise compliance costs, limit the scaling-up of operations and reduce competitive entry. In line with these findings, the federal Budget 2025 introduced measures to increase competition in finance and telecommunications, precisely the two top-ranked sectors identified by the model.

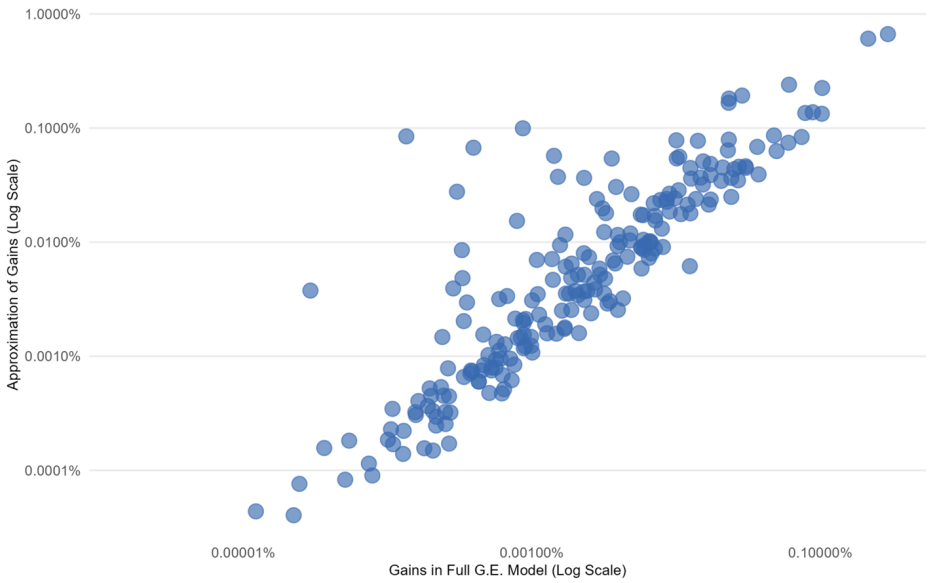
From looking at individual sectors, it is apparent that the service sectors play an outsized role. Indeed, taking a more aggregated perspective, services account for the overwhelming majority of potential gains from internal trade liberalization. Of the estimated 6.8 percent in potential gains, 5.9 percent (i.e., roughly $191 billion of the total $220 billion gains in 2025 terms) result from removing measured non-distance trade barriers within services. This suggests that trade frictions affecting physical goods are significantly less important to the national economy than those facing services.

To a large extent, the outsized role of service sectors is on account of the downstream effects of liberalizing trade, as productivity improvements in the service sector benefit other parts of the economy through these input-output connections. To illustrate this, if we restrict to consider only the direct effects of liberalization, with no intersectoral linkages, the estimated aggregate gains from services trade liberalization would be just 2.8 percent. This is also clearly reflected in Table 5, where total gains are broken down into direct and indirect effects, with the latter accounting for the largest shares for many sectors, including in finance.

These intersectoral linkages are therefore critical to understanding how the liberalization impact varies depending on which sector undergoes reform. In fact, much of the variation can be explained by just two sector-specific variables. The first is the level of interprovincial imports in a sector, relative to total expenditures on the goods or services produced by that sector. The second one is the sector's importance to Canada's overall economy—specifically, the influence that productivity changes in that sector have on aggregate real GDP. In our model, the metric captures two components: (i) the sector's role in satisfying final demand, and (ii) its function as a supplier of intermediate inputs to other sectors. In the literature, this is often referred to as a sector's "influence" or as the sector's "input-output multiplier" and is captured by g_j in equation (7). The product of these two factors closely approximates how much a reduction in internal trade costs will boost the economy in the model. Figure 4 shows this tight association by plotting a simple approximation of the liberalization gains on the horizontal axis and the model-implied gains on the vertical axis. It follows that the

services, while the most immediately policy-relevant components could plausibly relate to heterogeneous provincial professional licensing and procurement rules, a non-trivial share of the wedge likely results from the constitutional assignment of health to provinces which is not policy-amenable.

Figure 4: Gains from Liberalization: Model vs. Approximation



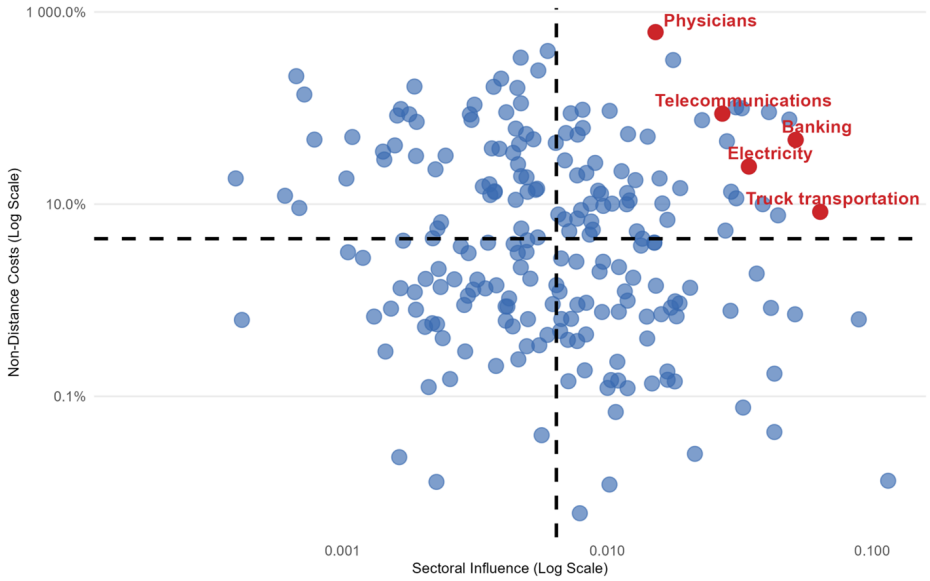
Notes: the Figure shows the gains from sector-specific elimination of internal trade frictions in the model in terms of aggregate real GDP changes (vertical axis) and an approximation of those gains based only on a sector's interprovincial trade intensity and its "influence" on the overall economy. See text for details.

biggest gains are found in large, upstream sectors where liberalization can ripple through the economy via both final and intermediate demand.

Finally, it is also important to note that there is little relationship between the measured level of non-distance trade costs and the product of a sector's interprovincial import share and its influence. To illustrate this, Figure 5 plots each of the 230 sectors used in the analysis, showing their average non-distance costs (on a log scale) against their overall influence (also on a log scale). While there is no clear overall relationship, it is important to note that sectors located in the first quadrant are both highly influential for aggregate economic outcomes and carry high non-distance trade costs. We highlight telecommunications, finance/banking, electricity, truck transportation, and physician services as examples of sectors with large scope for liberalization and, simultaneously, sectors that can significantly impact aggregate GDP.[10]

[10]There are other interesting relationships in the data but caution is warranted when interpreting them. For example, sector-specific gains from eliminating non-distance trade costs are strongly and positively correlated with a sector's value-added-to-output ratio. However, if we simulate uniform reductions in trade costs, one sector at a time, the resulting aggregate gains are unrelated to the sector's ratio. Thus, the strong relationship between ratios and liberalization gains stems from the fact that services tend to have higher both trade costs value-added shares, not from the value-added ratio itself being a driver of greater gains.

Figure 5: Correlation Between Non-Distance Trade Costs and Sectoral Influence



Notes: the figure shows a measure of the average non-distance trade costs for each of 230 sectors used in the analysis (log scale) against each sector's measure of aggregate influence. Selected sectors with both large trade costs and high influence are highlighted.

5.3 A Potentially Virtuous Cycle of Provincial Liberalization

Recent measures on internal trade liberalization include actions taken at both the federal and provincial levels. But since the federal government has eliminated all of its exceptions to the CFTA, further progress will depend on provincial actions, which, so far, has relied on bilateral agreements, memoranda of understanding, and unilateral provincial initiatives rather than a fully coordinated national plan. Given this background, we explore whether such decentralized steps can generate a self-reinforcing process, with early liberalization moves increasing the incentives for others to follow—or whether, instead, it would weaken the marginal gains from subsequent liberalization and stall the overall reform progress.

To explore this question, we first consider simple scenarios in which each province unilaterally undergoes a full liberalization process while others keep their barriers unchanged. Table 6 presents the resulting changes in real GDP per worker at the national and provincial levels (first and second columns, respectively). The results from the table are straightforward: every province benefits from liberalizing unilaterally. Furthermore, comparing these gains against the gains experienced by each province from a full national liberalization (Table 4), we note that each province also benefits from other provinces' liberalization processes. For

Table 6: Real GDP per Worker Gains from Unilateral Provincial Liberalization

Province	Provincial	National
BC	2.3	0.5
AB	2.9	1.2
SK	9.4	0.7
MB	5.6	0.3
ON	1.1	0.8
QC	3.2	0.8
NB	11.2	0.3
NS	7.9	0.2
PE	16.2	0.1
NL	13.1	0.4
YT	23.0	0.1
NT	30.3	0.2
NU	71.8	0.3

Notes: Each cells displays the percent change in labor productivity (real GDP per worker) resulting from each province's unilateral liberalization.

example, consider the case of Quebec. Liberalizing alone, it increases its GDP per worker by 3.17 percent while under a full national liberalization it rises by 6.9 percent. In other words, the gains from a national process compound and exceed those from just any single province moving alone, which warrants taking a closer look at the sequencing of provincial liberalization.

Against these findings from unilateral actions, we next ask whether a province's already-positive incentive to liberalize is strengthened or weakened when another province has already moved first. There are two opposing general equilibrium effects at play. On the one hand, there is a positive spillover effect due to efficiency gains and greater market access generated by the first mover which allows consumers and firms elsewhere to source more efficiently. When the second province liberalizes, suppliers from the first province are more attractive (relative to a scenario without the first move), leading to a larger decline in home shares (π^j_{nn}) and larger gains from trade via equation (7). On the other hand, the first province's liberalization increases its demand for productive suppliers affecting prices and wages and moving the economy towards a more efficient allocation. Thus, by the time of the second province's liberalization there are fewer distortions left, which reduces the marginal gains from subsequent liberalization.[11] Which of these two effects dominates determines whether

[11]The first mover can raise real wages in other provinces before these liberalize by increasing its demand for their products and I-O efficiency gains. Such real wage gains will generate migration responses even

a particular sequencing amplifies or dampens the second province's incentives.

The relative strength of these competing effects can be assessed by considering all possible pairs of provincial liberalizations. To do so, we simulate every pair of provincial liberalizations and examine whether a province liberalizing after another results in greater marginal gains than if that same province were to liberalize in isolation. We present the results in Table 7. Columns represent second-moving provinces while rows denote first movers. Each cell reports the ratio of the gain when province i liberalizes after province h to the gain when province i liberalizes alone (in the appendix we present the corresponding percentage-point differences). Panel (a) reports the effect on national real GDP per worker, while Panel (b) reports the effect on the second mover's own real GDP per worker. These two objects do not need to coincide, which is crucial because, despite interprovincial spillover gains, internal liberalization relies on provincial action. Since changes in real GDP per worker correspond to changes in welfare in the model, Panels (a) and (b) provide a measure of the reform incentives faced by a national planner and second-moving province policymakers, respectively. A value above one means that prior liberalization by another jurisdiction amplifies the second mover's incentive to liberalize; a value below one means that, while the reform remains beneficial, the gain is smaller than under unilateral liberalization. For example, consider again the case of Quebec. If it were to unilaterally liberalize, its real GDP per worker would increase by 3.17 percent, with national real GDP per worker rising by 0.83 percent. However, if Ontario were to liberalize first, and Quebec followed, the gains would be larger—Quebec's real GDP per worker would rise by 3.28 percent, and national GDP (net of Ontario's gains) would increase by 0.91 percent, corresponding to values of 1.09 in Panel (a) and 1.03 in Panel (b).

More broadly, the results from Table 7 indicate that over two-thirds of possible provincial pair sequences result in higher gains after a prior liberalization. This pattern suggests that decentralized reforms can indeed generate a "virtuous cycle" of provincial trade liberalization, in which liberalization by one province tends to amplify the gains from liberalization for others. These effects are especially pronounced among geographically proximate provinces, tightly linked, and where market access and I-O complementarities dominate, such as the Western provinces, Ontario and Quebec, and the Atlantic provinces.[12] Interestingly, liber-

before these other provinces liberalize and reduce their marginal gains when they eventually move. This effect can be particularly important for smaller jurisdictions.

[12]These results suggest that distance indeed matters. A regression of pairwise relative gains on (log) distance between the two regions (including both row and column fixed effects) has a statistically significant coefficient of -0.06. And roughly two-thirds of the variation in relative gains across regions is accounted for by such a specification, with distance accounting for roughly one-third of the variation and the row/column fixed effects accounting for the other third.

Table 7: Relative Gains from Liberalizing After Another Province or Territory

Panel (a): Canadian Real GDP per Worker Gains

Liberalizes First:	Liberalizes Second: BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU
BC	–	1.04	1.02	1.02	0.98	0.98	1.00	1.01	1.03	0.98	1.09	1.29	1.11
AB	1.11	–	1.10	1.04	0.96	0.97	1.03	1.04	1.09	0.95	1.14	1.19	1.19
SK	1.02	1.06	–	1.10	0.99	0.98	0.99	1.02	1.00	0.98	1.02	1.07	1.05
MB	1.01	1.01	1.04	–	1.01	1.00	1.00	1.01	1.01	1.00	1.04	1.03	1.05
ON	0.97	0.97	0.99	1.03	–	1.09	1.09	1.10	1.12	0.99	1.17	1.16	1.27
QC	0.97	0.98	0.98	0.99	1.10	–	1.20	1.13	1.21	0.98	1.00	1.07	1.08
NB	1.00	1.01	1.00	1.00	1.03	1.07	–	1.29	1.26	1.04	1.00	1.01	1.02
NS	1.00	1.01	1.00	1.01	1.02	1.03	1.19	–	1.39	1.05	1.00	1.01	1.02
PE	1.00	1.01	1.00	1.00	1.01	1.02	1.06	1.14	–	1.01	1.00	1.00	1.01
NL	0.99	0.98	0.99	1.00	0.99	0.99	1.06	1.11	1.09	–	1.00	1.02	1.02
YT	1.01	1.01	1.00	1.01	1.01	1.00	1.00	1.00	1.00	1.00	–	1.02	1.00
NT	1.05	1.03	1.02	1.02	1.04	1.01	1.01	1.01	0.99	1.01	1.08	–	1.07
NU	1.07	1.05	1.02	1.05	1.11	1.03	1.02	1.03	1.05	1.01	0.99	1.11	–

Panel (b): Provincial Real GDP per Worker Gains of Second Mover

Liberalizes First:	Liberalizes Second: BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU
BC	–	1.05	1.01	1.00	1.00	1.00	1.00	1.00	1.01	1.00	0.98	0.99	0.99
AB	1.04	–	1.02	1.00	0.98	0.97	0.99	0.99	1.02	0.98	0.96	0.97	0.95
SK	1.03	1.07	–	1.05	1.00	1.00	0.99	1.00	1.00	0.99	0.99	1.00	0.99
MB	1.01	1.01	1.02	–	1.01	1.00	1.00	1.00	1.00	1.00	1.01	1.00	1.00
ON	0.99	0.99	1.00	1.00	–	1.03	0.99	0.99	1.01	0.99	1.03	0.98	0.98
QC	1.00	1.00	1.00	1.00	1.10	–	1.03	1.02	1.03	1.00	0.98	1.00	0.99
NB	1.00	1.01	1.00	1.01	1.03	1.04	–	1.11	1.03	1.02	1.00	1.00	1.00
NS	1.01	1.00	1.00	1.01	1.02	1.02	1.06	–	1.08	1.02	1.00	1.00	1.00
PE	1.00	1.00	1.00	1.00	1.01	1.01	1.02	1.05	–	1.00	1.00	1.00	1.00
NL	1.00	1.00	1.00	1.00	1.01	1.00	0.99	1.02	1.01	–	0.99	1.00	0.99
YT	1.01	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	–	1.01	1.00
NT	1.06	1.04	1.02	1.02	1.06	1.03	1.01	1.01	1.00	1.00	0.97	–	1.02
NU	1.08	1.07	1.02	1.05	1.14	1.04	1.02	1.02	1.02	1.02	0.99	1.00	–

Notes: Each cell presents the ratio of the gains from (column) province or territory n liberalizing following the prior liberalization by another (row) province or territory $j \neq n$ to the gains if n liberalizes alone. Panel (a) reports the difference for Canadian real GDP per worker, while Panel (b) reports the difference for the real GDP per worker of the second-moving province or territory. Values greater than 1 (green cells) indicate that the prior liberalization increases the subsequent growth effect; values less than 1 (red cells) indicate that it reduces it. Diagonal cells are omitted.

alization by New Brunswick, Nova Scotia, and Prince Edward Island boosts the gains from liberalization in every other province across the country.

The main exceptions at the national level are concentrated among the two large economic hubs: the central core (Ontario and Quebec) and the western core (Alberta and British Columbia).[13] These are large provinces, with low barriers in goods (and residual barriers mostly in services), and that to some extent compete as suppliers to the national economy. When one (province from one) of these cores liberalizes first, it removes little direct barriers for the other block but affects national prices, wages, and the labor allocation, so the second (province from the other) core's reform adds less to national GDP than it would otherwise. For example, if Quebec moves first and British Columbia moves second, Panel (a) indicates a lower national ratio as Quebec's reform front-loads reallocation and reduces the national spillovers from BC's subsequent reform. However, Panel (b) shows that British Columbia's own (provincial) gains are roughly unchanged. In other words, Quebec's prior reform reduces the national spillovers from BC's own reforms but does not materially weaken its own private incentives to liberalize.

From the perspective of the second mover, Panel (b) also suggests pervasive complementarities consistent with a self-strengthening process. The main exceptions are concentrated in cases where either Alberta or Ontario move first. Being, respectively, the most trade-intensive and the largest provinces, their reforms reshape the equilibrium economy faced by later movers. Importantly, the results from Panel (b) do not imply that second movers are worse off by Alberta or Ontario's reforms; rather, these reforms already yield benefits to other provinces even before their own liberalization takes place.[14]

The patterns from both panels imply that the incentives of a national planner and of an individual province can diverge. A planner concerned with national welfare will care about which orderings strengthen the self-sustaining momentum of reform to reach welfare-maximizing national full-liberalization—namely, amplification is strongest when small jurisdictions move early. In contrast, from a province's perspective, while it gains from liberalizing, its incentives are often amplified by waiting until others have moved first. These results suggest that the timing of reform matters, since different sequences generate different spillovers.

[13] Newfoundland and Labrador is a second, more idiosyncratic, exception. Unlike the other Atlantic provinces, it is a resource-oriented commodity supplier so prior reforms elsewhere do little to expand its market-access gains. Its national ratios dip below unity but are quantitatively small.

[14] The territories constitute another kind of exception. As first movers, they are too small to generate meaningful factor-price effects, but they still improve market access and sourcing possibilities, raising gains from further reforms elsewhere. When moving second, instead, their own gains are dampened (relative to the unilateral case) given the reallocation already generated by the large(r) province moving first. The territories therefore have the strongest private incentives to move first, but may face constraints on early action from potential administrative capacity and political-economy factors that are not considered in the model.

5.4 Offsetting External Trade Costs

Deeper domestic market integration can help the economy in the presence of external shocks. In fact, reducing internal trade barriers has recently been proposed as a strategy to help offset the impact of changes in U.S. trade policy. While Canada has little control over the tariffs it faces abroad, it can control its internal barriers. The key question we analyze next is what is the potential size of this lever relative to an external trade cost shock.

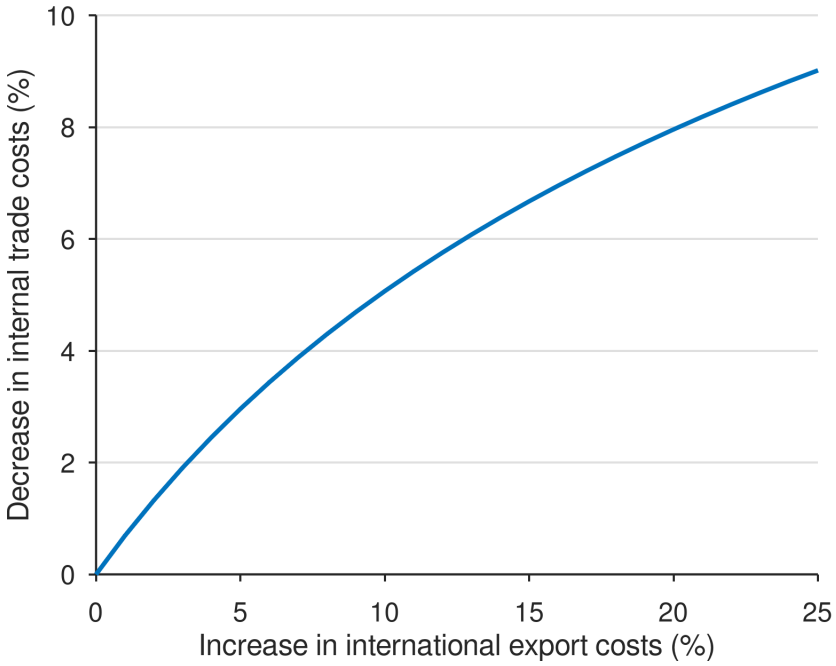
As we noted above, the gains from internal trade liberalization in Canada are substantial, even relative to possible decreases in GDP due to U.S. tariffs. The Bank of Canada estimated in its April 2025 Monetary Policy Report that, depending on the scenario considered, a Canada-U.S. trade war could shrink Canadian real GDP by between 0.9 percent and 3.4 percent by the fourth quarter of 2026 (Bank of Canada, 2025), magnitudes which stand significantly below the potential gains from internal liberalization. However, it is important to note that the benefits from liberalizing internal trade are realized over the long run. In contrast, the negative impacts of rising international trade costs tend to be felt at much shorter horizons. In addition, offsetting a shock on the aggregate does not mean offsetting it across the board and, in fact, the industries most exposed to U.S. demand are not necessarily those that gain most from lower internal trade barriers.

To illustrate the extent to which internal trade reform can offset the effects of increased international trade costs, we first simulate a scenario where the cost of international trade—both imports and exports—rises by 10 percent. We then calculate the reduction in internal trade costs required to fully offset the resulting decline in real GDP. We find that internal trade costs would need to decline by $\hat{\tau}_{ni}^{j} = 1/1.084$ for all (n, i) within Canada to fully compensate for this increase. In other words, for every one percent increase in international trade costs, a 0.8 percent reduction in internal trade costs is needed to maintain real GDP levels.

In a second scenario, we examine the case when only the cost of exporting from Canada increases by 10 percent, to reflect the case of no Canadian retaliation. In this case, internal trade costs need to decline by $\hat{\tau}_{ni}^{j} = 1/1.051$ to hold aggregate real GDP constant—an offset ratio of about one-half. Therefore, a no-retaliation scenario lowers the internal trade cost reductions needed to maintain output unchanged.

Figure 6 depicts the broader relationship between rising export costs and the required change in internal trade costs to compensate (i.e. keep real income unchanged), by plotting the required reduction in internal trade costs across a range of higher international export costs. There are two features worth highlighting from the figure. First, the required offset is less than proportional: as export costs go up, each additional increase requires a progressively

Figure 6: Internal Liberalization to Compensate for Higher Export Costs



Notes: the Figure displays the change in Canada's internal trade costs to compensate for the aggregate real GDP losses due to a rise in international export costs.

smaller marginal cut in internal costs. Even a large increase in export costs of 25 percent requires only a roughly 9 percent reduction in internal trade costs. Second, and perhaps more importantly, that 9 percent figure remains within the estimated range of internal trade costs that actually exist within Canada. Thus, at least for small to moderate increases in the export costs Canada faces, the impact of internal liberalization may be large enough to offset the implied output losses over the long-run.[15]

Finally, in order to properly interpret these results, it is important to keep in mind that the model does not distinguish the U.S. market from any other international export destination. By calibrating the model to detailed supply-and-use tables for provinces and territories, which aggregates all international trading partners into a single jurisdiction, we gain considerable granularity within Canada but at the cost of less detail abroad. The compensating changes in internal trade costs reported here should therefore be read as illustrations of the general potential for internal liberalization to buffer external shocks, not as precise prescriptions calibrated to any specific schedule of U.S. tariffs.

[15]Bernasconi et al. (2026) find a similar offsetting result for market integration in the European Union.

5.5 Robustness of Baseline Results

The results above depend on the assumed trade elasticity, θ, governing the responsiveness of trade flows to changes in trade costs. In gravity-based trade models, the unobserved trade costs are inferred from the observed trade shares and the trade elasticity. For a given degree of home bias, lower values of θ require larger trade costs to rationalize observed trade patterns, whereas higher θ values imply smaller underlying trade barriers.[16] As a result, both the estimated level of internal trade costs and the gains from eliminating them are sensitive to the elasticity assumption. Intuitively, if trade is less responsive to costs, larger frictions are needed to explain observed internal trade patterns, leaving more distortions to be removed (and more gains to be achieved) through liberalization.

To assess the sensitivity of our main findings, we consider two alternative elasticities of $\theta = 4$ and $\theta = 8$ around our baseline. These values span a range commonly used in the quantitative trade literature (Head and Mayer, 2014; Simonovska and Waugh, 2014). Our baseline values therefore lie comfortably within the set of values typically considered plausible in the literature, and provide a reasonable benchmark for the analysis.

Table 8: Sensitivity of Trade Costs and Liberalization Gains to Trade Elasticity

	Low Elasticity ($\theta = 4$)	Baseline (see text)	High Elasticity ($\theta = 8$)
Average internal trade costs (%)	12.8	9.3	5.5
Gains from full liberalization (% of GDP)	8.8	6.8	4.2
Gains in CAD (2025 basis, billions)	286	220	137

Table 8 reports the resulting estimates. Consistent with the gravity framework, inferred internal trade costs decline monotonically with the elasticity, from 12.8 percent when $\theta = 4$ to 5.5 percent when $\theta = 8$, compared with 9.3 percent in the baseline specification. The estimated gains from liberalization follow an analogous pattern, ranging from 8.8 percent of GDP under the low-elasticity scenario to 4.2 percent under the high-elasticity scenario, relative to 6.8 percent in the baseline estimate. The main takeaway is that, while the magnitude of the gains varies across specifications, the qualitative conclusion remains unchanged—namely, internal trade barriers are economically meaningful, and their removal would yield substantial aggregate benefits even under plausible variations in choice of the trade elasticity.

[16] Formally, trade costs are recovered from observed trade shares using $\tau_{ij} = \left(\frac{\pi_{ii}\pi_{jj}}{\pi_{ij}\pi_{ji}}\right)^{\frac{1}{2\theta}} - 1$. Thus, for a lower θ the model infers larger trade costs to account for the observed trade flows (home bias).

6 Conclusion

This paper uses interprovincial trade data to quantify internal trade barriers in Canada and the gains accruing from their removal. Our estimates suggest that internal trade barriers are economically significant, equivalent on average to a tariff of roughly 9 percent. In our baseline, fully eliminating these barriers would increase Canadian real income by 6.8 percent over the long-run. While all jurisdictions would benefit from liberalization, the largest gains are found among smaller provinces and territories.

The use of highly-disaggregated data allows us to identify which narrowly-defined sectors would provide the largest gains if the liberalization process were to follow a sector-specific sequencing. In this regard, we find that sectors such as finance, telecommunications and, to a lesser extent, transportation and professional services can generate particularly large gains. While our model is mute about the exact nature of the frictions, the analysis highlights areas where reforms can yield the largest gains.

We also examine the sequencing of reforms across jurisdictions and find evidence of a potentially virtuous cycle of provincial liberalization. In most cases, prior reforms by one province strengthen the incentives for others to follow. While some exceptions arise due to general-equilibrium reallocation effects, the overall pattern found in the analysis suggests that liberalization can be a self-reinforcing process.

Finally, the paper also assesses how stronger domestic market integration could offset potential higher international trade costs. The analysis finds that, indeed, tighter internal market integration could compensate the income losses from higher exporting costs for a wide range of exporting costs—and the required response in internal barriers is, in fact, less than proportional, further strengthening internal trade liberalization's potential to act as a buffer over the long-run.

References

Agnosteva, D. E., J. E. Anderson, and Y. V. Yotov (2019). Intra-national trade costs: Assaying regional frictions. *European Economic Review 112*, 32–50.

Albrecht, L. and T. Tombe (2016). Internal trade, productivity, and interconnected industries: A quantitative analysis. *Canadian Journal of Economics 49*(1), 237–263.

Alvarez, J., I. Krznar, and T. Tombe (2019). Internal trade in canada: Case for liberalization. *IMF Working Paper WP/19/158*.

Anderson, J. E. and E. van Wincoop (2003, March). Gravity with gravitas: A solution to the border puzzle. *American Economic Review 93*(1), 170–192.

Bank of Canada (2025). Monetary Policy Report—April 2025—Canadian Economy. Technical report, Bank of Canada, Ottawa, Ontario, Canada.

Bemrose, R. K., W. Mark Brown, and J. Tweedle (2020). Going the distance: Estimating the effect of provincial borders on trade when geography (and everything else) matters. *Canadian Journal of Economics/Revue canadienne d'économique 53*(3), 1098–1131.

Bernasconi, R., N. Cordemans, V. Gunnella, G. Pongetti, and L. Quaglietti (2026). What is the untapped potential of the EU single market? *ECB Economic Bulletin Articles 8*.

Caliendo, L. and F. Parro (2015). Estimates of the trade and welfare effects of nafta. *Review of Economic Studies 82*(1), 1–44.

Coşar, A. K. and P. D. Fajgelbaum (2016). Internal geography, international trade, and regional specialization. *American Economic Journal: Microeconomics 8*(1), 24–56.

Costinot, A. and A. Rodríguez-Clare (2014). Trade theory with numbers: Quantifying the consequences of globalization. *Handbook of International Economics 4*, 197–261.

Eaton, J. and S. Kortum (2002). Technology, geography, and trade. *Econometrica 70*(5), 1741–1779.

Fontagné, L., H. Guimbard, and G. Orefice (2022). Tariff-based product-level trade elasticities. *Journal of International Economics 137*, 103593.

Head, K. and T. Mayer (2014). Gravity equations: Workhorse, toolkit, and cookbook. In G. Gopinath, E. Helpman, and K. Rogoff (Eds.), *Handbook of International Economics*, Volume 4, pp. 131–195. Elsevier.

Head, K. and J. Ries (2001). Increasing returns versus national product differentiation as an explanation for the pattern of u.s.-canada trade. *American Economic Review 91*(4), 858–876.

Helliwell, J. F. (1996). Convergence and migration among provinces. *Canadian Journal of Economics 29*(Special Issue), S324–S330.

McCallum, J. (1995). National borders matter: Canada-U.S. regional trade patterns. *American Economic Review 85*(3), 615–623.

Ramondo, N., A. Rodríguez-Clare, and M. Saborío-Rodríguez (2016). Trade, domestic frictions, and scale effects. *American Economic Review 106*(10), 3159–3194.

Simonovska, I. and M. E. Waugh (2014). The elasticity of trade: Estimates and evidence. *Journal of International Economics 92*(1), 34–50.

Tombe, T. and J. Winter (2021). Fiscal integration with internal trade: Quantifying the effects of federal transfers in canada. *Canadian Journal of Economics 54*(2), 522–556.

Tombe, T. and X. Zhu (2019). Trade, migration, and productivity: A quantitative analysis of China. *American Economic Review 109*(5), 1843–1872.

Appendix

A Recent Policies

Table A.1: Major Canadian Internal Trade Agreements

Year	Agreement
1995	Agreement on Internal Trade (AIT)
2007	Trade, Investment and Labour Mobility Agreement (TILMA)
2009	Bilateral Internal Trade Agreement (NB–QC)
2010	Partnership Agreement on Regulation and the Economy (PARE)
2010	Trade and Cooperation Agreement (ON–QC)
2011	New West Partnership Trade Agreement (NWPTA)
2017	Canadian Free Trade Agreement (CFTA)
2025	One Canadian Economy Act

Table A.2: Recent Provincial Internal Trade Liberalization Measures

Province	Recent Measures
BC	Interprovincial trade legislation received Royal Assent (May 2025); memoranda of understanding signed with ON and MB.
AB	Memorandum of understanding signed with ON; trade agreement with NS.
SK	Memoranda of understanding signed with ON, PE, and MB.
MB	Interprovincial trade legislation received Royal Assent (June 2025); memoranda of understanding signed with ON, NB, SK, BC, and PE.
ON	Interprovincial trade legislation received Royal Assent (June 2025); memoranda of understanding signed with BC, PE, AB, SK, MB, NB, and NS.
QC	Interprovincial trade legislation introduced; implementation ongoing.
NB	Memoranda of understanding signed with ON, MB, PE, and NL.
NS	Interprovincial trade legislation received Royal Assent (March 2025); ON, AB, BC, MB, and PE recognized as reciprocating jurisdictions.
PE	Interprovincial trade legislation received Royal Assent (May 2025); memoranda of understanding signed with SK, MB, ON, NB, and NS.
NL	Memorandum of understanding signed with NB.

B Virtuous Liberalization Cycle

Table B.1: Relative Gains from Liberalizing After Another Jurisdiction (in p.p.)

Panel (a): Canadian Real GDP Gains

Liberalizes First:	Liberalizes Second: BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU
BC		0.05	0.01	0.00	-0.01	-0.01	0.00	0.00	0.00	-0.01	0.01	0.03	0.03
AB	0.05		0.07	0.01	-0.03	-0.03	0.01	0.01	0.01	-0.02	0.01	0.04	0.06
SK	0.01	0.07		0.03	-0.01	-0.02	0.00	0.00	0.00	-0.01	0.00	0.01	0.02
MB	0.00	0.01	0.03		0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
ON	-0.01	-0.03	-0.01	0.01		0.08	0.02	0.02	0.01	-0.01	0.01	0.03	0.08
QC	-0.01	-0.03	-0.02	0.00	0.08		0.06	0.02	0.01	-0.01	0.00	0.01	0.02
NB	0.00	0.01	0.00	0.00	0.03	0.06		0.05	0.02	0.02	0.00	0.00	0.01
NS	0.00	0.01	0.00	0.00	0.02	0.02	0.05		0.03	0.02	0.00	0.00	0.01
PE	0.00	0.01	0.00	0.00	0.01	0.01	0.02	0.03		0.01	0.00	0.00	0.00
NL	-0.01	-0.02	-0.01	0.00	-0.01	-0.01	0.02	0.02	0.01		0.00	0.00	0.00
YT	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00		0.00	0.00
NT	0.03	0.04	0.01	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.00		0.02
NU	0.03	0.06	0.02	0.01	0.09	0.02	0.01	0.01	0.00	0.00	0.00	0.02	

Panel (b): Provincial Real GDP of Second Mover

Liberalizes First:	Liberalizes Second: BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU
BC		0.13	0.05	0.02	0.00	-0.01	-0.04	-0.01	0.15	-0.06	-0.44	-0.35	-1.03
AB	0.09		0.14	0.01	-0.02	-0.09	-0.10	-0.08	0.31	-0.32	-0.96	-0.92	-3.75
SK	0.06	0.20		0.28	0.00	-0.01	-0.06	-0.01	0.00	-0.10	-0.23	-0.09	-0.40
MB	0.02	0.03	0.16		0.02	0.01	0.00	0.02	0.05	0.03	0.31	0.09	0.00
ON	-0.02	-0.03	-0.03	0.01		0.11	-0.08	-0.06	0.15	-0.19	0.71	-0.55	-1.16
QC	-0.01	0.00	-0.03	0.00	0.11		0.33	0.13	0.49	-0.04	-0.53	-0.08	-0.85
NB	0.01	0.02	0.02	0.04	0.03	0.14		0.87	0.55	0.24	-0.04	-0.02	0.11
NS	0.01	0.01	0.04	0.04	0.02	0.06	0.64		1.32	0.21	-0.01	-0.02	0.08
PE	0.01	0.01	0.01	0.01	0.01	0.03	0.22	0.42		0.06	-0.01	-0.03	0.01
NL	0.00	0.00	-0.01	0.01	0.01	-0.01	-0.08	0.19	0.20		-0.12	-0.12	-0.73
YT	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.02		0.19	-0.07
NT	0.13	0.11	0.19	0.11	0.07	0.08	0.06	0.10	0.02	0.05	-0.61		1.37
NU	0.18	0.21	0.22	0.26	0.16	0.13	0.19	0.18	0.32	0.26	-0.24	0.10	

Notes: Each cell reports the percentage-point difference between the real GDP growth effect when the column province or territory liberalizes after the row jurisdiction and the effect when the column jurisdiction liberalizes alone. Panel (a) reports the difference for Canadian real GDP, while Panel (b) reports the difference for the real GDP of the second-moving province or territory. Positive values indicate that the prior liberalization increases the subsequent growth effect; negative values indicate that it reduces it. Diagonal cells are omitted.

PUBLICATIONS

Barriers Within Borders: Internal Trade and Domestic Market Integration

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