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CANADA'S ECONOMIC INTEGRATION AND RESILIENCE: LESSONS FROM CIRANO RESEARCH

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Canada's economic integration and resilience: lessons from CIRANO research

Review of CIRANO's recent work on international trade and trade relations between Canada and the United States

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Abstract

Despite the historically close relations that have enabled Canada and the United States to benefit from their trade integration, recent disruptions to world trade have challenged the foundations of this so-called protective interdependence. Since 2020, a number of research projects conducted at CIRANO have highlighted the structural vulnerabilities generated by this interdependence: saturation of logistics infrastructures, asymmetric exposure to shocks, overdependence on a single partner. All these factors call for a rethinking of our economic strategies and a reassessment of our investment priorities. These long-identified vulnerabilities now require concrete, targeted and coordinated responses.

Mots-clés : Supply chains, Global value chains, Elasticity, Interdependence, Resilience, Trade wars

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Introduction

The recent CIRANO publication by Thierry Warin (HEC Montréal, CIRANO) of February 2025, entitled Canada-U.S. Trade in a Globalized Economy: Elasticities, Asymmetries, and Policy Imperatives, illustrates the aberration in which Canada and Quebec find themselves today: a trade war guided by an obsolete protectionist logic in total contradiction with the contemporary structure of international trade.

In this article, Thierry Warin explains perfectly how global value chains have become complex, integrated and specialized systems. Their level of interconnection is such that traditional visions of what a “national” economy is (national imports and exports, or even the balance of trade) are becoming inappropriate, and even misleading.

Products are no longer the result of national production drawing on its own resources or workforce. Today, production takes place within **international networks**, involving **intra-firm exchanges** within the networks of **multinational companies**, linking branches all around the world. These flows do not oppose competing interests, but rather implement **large-scale, distributed forms of cooperation.** This system was based on the promise of protective interdependence in the face of geopolitical tensions.

In this context, the resurgence of tariff barriers inspired by mercantilist rationale based on the idea that a nation's wealth derives from its trade surpluses and the partitioning of its markets, therefore appears anachronistic. But these doctrines were born in a world where cross-border cooperation was marginal, and where the absence of logistical and digital technologies mechanically limited interdependence.

Today, **economies no longer produce in isolation.** The emblematic example of the smart phone, which can cross more than ten borders before being assembled, with components coming from South Korea or Taiwan, batteries from China, and design from the USA… This well-known example is often cited to illustrate the vulnerability of value chains, but above all it demonstrates the extent to which **the very notion of national borders in trade is based on an outdated logic.**

Strengthening trade relations means **moving away from zero-sum narratives** and recognizing the complexity of contemporary interdependencies. From this perspective, current tariff measures, most notably those taken by the United States, are counter productive. Not only do they fail to protect jobs, but they also weaken supply chains, including in the most strategic sectors. As North and Thomas (1973)[1] reminded us 50 years ago, it is **not isolation but integration** that has historically enabled the rise of the great economic powers.

[1] North, D. C., & Thomas, R. P. (1973). The Rise of the Western World: A New Economic History. Cambridge: Cambridge University Press.

The illusion of trade balance: why we need to reconsider our indicators

The same article by Thierry Warin (2025) points out that Canada's trade surplus with the USA — estimated at between C$100 and C$170 billion — remains modest on a macroeconomic scale, representing around 5% of Canadian GDP. From a U.S. perspective, the $100 billion trade deficit with **Canada represents a mere 0.27% of U.S.** GDP. These figures put the alarmist rhetoric of the U.S. administration into perspective.

Moreover, **if we exclude oil and gas imports, the U.S. would actually have a trade surplus with Canada of over $10 billion.** In other words, the U.S. trade deficit is explained solely by imports of energy, a strategic commodity that the U.S. needs to maintain its energy security.

In addition, the traditional conception of the **"trade balance" tends to omit trade in services** and value-added flows. However, when the share of services is taken into account, the **U.S. has a substantial surplus with Canada.** Exports of services have been overlooked in the calculation of the balance of trade, even though they generate considerable income for the United States.

A well-documented yet ignored structural commercial vulnerability

Despite the intensity of Canada-U.S. cross-border trade, which illustrates what is known in economics as the gravity theory (which explain how Canada is naturally attracted towards its southern neighbor), basic precautionary principles require building resilience to shocks, whether of internal or external origin.

In 2020, the COVID-19 pandemic highlighted the fragility of supply chains. The CIRANO report on the *Economic Connectivity of Canada and Quebec*, written by Julien Martin (ESG-UQÀM, CIRANO), Dalibor Stevanovic (ESG-UQÀM, CIRANO) and Adam Touré (CIRANO), had already underlined the country's high level of exposure to external shocks. They noted that :

- Over the last 35 years, **57% of shocks to Canadian GDP were of foreign origin**.
- **Quebec is the most exposed** provincial economy, with nearly **74% of GDP** forecast errors explained by **exogenous shocks.**
- Between **20% and 30% of Quebec's shocks come from Ontario,** which is mainly influenced by the US economy.

These findings led them to recommend, back in 2020, that Quebec and Canada **diversify** their partners, **reconfigure their supply chains**, and attract **strategic FDI**, while reducing their logistical dependence on the United States.

An exceptional dependency

Since 2020, Julien Martin (ESG-UQÀM, CIRANO) and Florian Maynéris (ESG-UQÀM, CIRANO) have been warning that "Canada's dependence on the United States for imports is worse than you think". They highlighted just **how deep Canada's trade and logistics dependence runs**, warning how extremely vulnerable we are to shocks such as **"unilateral trade policy decisions"**, for example.

In fact, the two researchers show that:

- **80% of Canadian imports are linked to the U.S.**, whether they be:
    - Products manufactured in the U.S.,
    - Products transiting the U.S. before entering Canada

The U.S. thus acts as an **essential logistics hub**, including for imports from Mexico (over 90% of which pass through the U.S.), Europe and Asia.

This dependence varies from sector to sector:

- High dependence (>80%): paper, printing, automotive;
- Medium dependence (~50%) : pharmaceuticals, clothing.

his configuration calls for measures to **diversify logistics** and the development of **non-American trade corridors,** notably to Europe and Asia.

Macroeconomic impacts of the tariff war

In a recent note published in March 2025 by Julien Martin (ESG-UQÀM, CIRANO), Kevin Moran (Université Laval, CIRANO) and Dalibor Stevanovic (ESG-UQÀM, CIRANO) on the macroeconomic impacts of the current tariff war, the three authors present various scenarios:

- Scenario without Canadian retaliation: a 3.2% drop in GDP one year after the implementation of tariffs.
- Scenario with Canadian retaliation: contraction to 4.2% of GDP.

These predictions are more pessimistic than those of the Bank of Canada, which forecast a 3% drop in GDP.

All in all, the associated job losses are estimated at between 490,000 and 700,000 jobs.

As for the impact on exports, the authors predict a moderate realistic scenario, in the context of a 25% tariff increase:

- **10% year-on-year decline** in exports to the US

- **19% drop in exports** to the US **after one year**.

Some factors could mitigate the impact :

- **Energy products**, which account for a large proportion of our exports, are taxed at only **10%**, thus limiting losses
- Finally, a **weaker Canadian dollar** makes our products slightly less expensive abroad, which helps to **offset part of the effect of the tariffs**. The net effect is **revised at 10% to 15% drop in exports** to the U.S., even in a scenario where tariffs rise to 25%.

This is explained by the so-called "elasticity" of trade, i.e. the reaction of trade to changes in prices or taxes.

Crude oil, for example, is a product with **low elasticity,** as it would be **difficult to substitute**. This means that even if its price rises, or if tariffs are imposed, **volumes traded will remain relatively stable.**

Conversely, some products (such as plastics) are much more elastic. This means that if their price rises due to a higher tariff or cost, customers can easily switch to another supplier, thus changing the initial trade volume.

So, as not all sectors react in the same way to trade shocks, it is necessary to have a targeted and measured approach to trade attacks and retaliation. This is what the February 2025 study by Thierry Warin (HEC Montréal, CIRANO), which measures elasticity by sector, invites us to do.

Thoughts on recovery diversification, logistics and strategic resources

In another publication, *Réflexions pour la relance du Québec, 2020*, seven economists from CIRANO and ESG-UQÀM already concrete actions to strengthen Quebec's economic resilience:

- **Reduce logistical dependence on the United States.**
- **Constitute stocks of essential products** using international trade rather than non-competitive local substitution.
- **Identify strategic resources,** notably fresh water [a crucial issue that is too often ignored], as a leverage point for international influence.
- **Invest in maritime transport** to bypass American logistical platforms.

However, these recommendations **face physical and structural constraints**, particularly with regard to Quebec's maritime capabilities.

At the **CIRANO conference of March 13, 2025,** entitled The Great Lakes - St. Lawrence at the time of the CUMA renegotiation, organized by the CIRANO Pole on Data Science for Trade and Intermodal Transportation (GVC*dt*LAB), several experts and players from the industry highlighted the **lack of investment in transportation infrastructure as a major point of vulnerability.** In particular, it was pointed out that **ports** - particularly those in Eastern Canada - are **already operating close to capacity.**

Under these conditions, it would be **difficult to accommodate a significant increase in logistics demand**, such as that required to diversify supplies or build up strategic stocks.

To redefine the competitiveness of one of North America's most dynamic and strategic trade corridors, the **St. Lawrence - Great Lakes** (SLGL), CIRANO launched in June 2023 a data lab dedicated to the challenges of trade and multimodal transportation systems.

Among the lab's flagship initiatives is the **Digital Twin** of trade and transportation networks for the SLGL binational region, supported by a data visualization infrastructure, the **SLGL dataHub**[2] , which forms its technological foundation.

This digital twin aims to **reconstruct and simulate complex economic systems**, using advanced **data science methods**. It allows the interconnections of world trade to be reproduced, while providing a more detailed reading of regional economic dynamics.

This inductive approach, powered by **machine learning,** enhances competitiveness analysis by revealing **emerging trends** and identifying **new explanatory variables on market** organization. It thus contributes to making economic analysis more relevant, more reactive, and better equipped to anticipate changes in international trade.

[2] https://gvcdtlab.com/fr/

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