

Deglobalization and Trade Fragmentation: Implications for the Inflation–Output Trade–Off

Matteo Cacciatore

Canadian Economic Analysis Department
Bank of Canada
mcacciatore@bank-banque-canada.ca

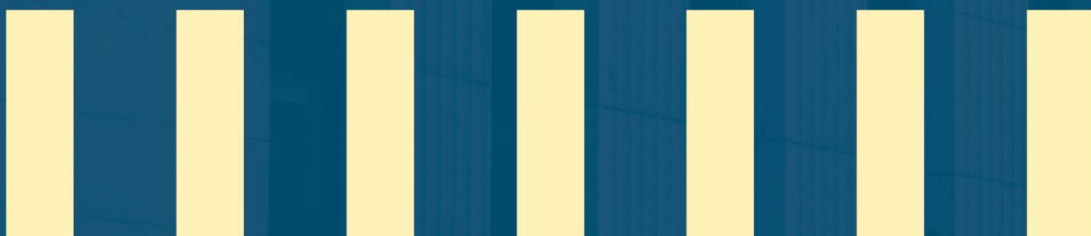
Daniela Hauser

International Economic Analysis Department
Bank of Canada
dhauser@bank-banque-canada.ca

Yuko Imura

International Economic Analysis
Department
Bank of Canada
yimura@bank-banque-canada.ca

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Introduction

The global economy has entered a new phase marked by greater volatility and structural change. Since the pandemic, larger and more persistent supply shocks have become more frequent, while the economic landscape is increasingly shaped by disruptions to trade flows, rising geopolitical fragmentation, and a partial reversal of decades-long globalization trends. A retreat from integrated global supply chains could unleash inflationary pressures, as countries face higher costs to reroute production and secure materials (IMF, 2024).

This evolving environment raises important questions about the robustness of flexible inflation targeting (FIT), particularly for a small open economy like Canada. While the 2026 Monetary Policy Framework Review addresses a broad range of structural challenges, including climate risk and post-COVID transformations, this note focuses on deglobalization and trade fragmentation as sources of persistent supply shocks and uncertainty. The central questions guiding this analysis are: How do rising protectionism (e.g., trade wars) and trade fragmentation alter the inflation–output trade-off faced by monetary policymakers? Can the framework accommodate shocks from protectionism and supply chain disruptions?

We first outline the trends and risks associated with deglobalization, tracing the shift from “hyperglobalization” to a more fragmented global economy. Second, we review estimates of the effects of protectionism and fragmentation on inflation and economic activity. Third, we discuss supply and demand channels through which large and persistent deglobalization shocks could affect inflation and output in Canada. Finally, we examine the implications of deglobalization for the Bank of Canada’s monetary policy framework, specifically asking whether FIT remains adequate in responding to increasing external shocks and persistent inflationary pressures.

From Hyperglobalization to Slowbalization

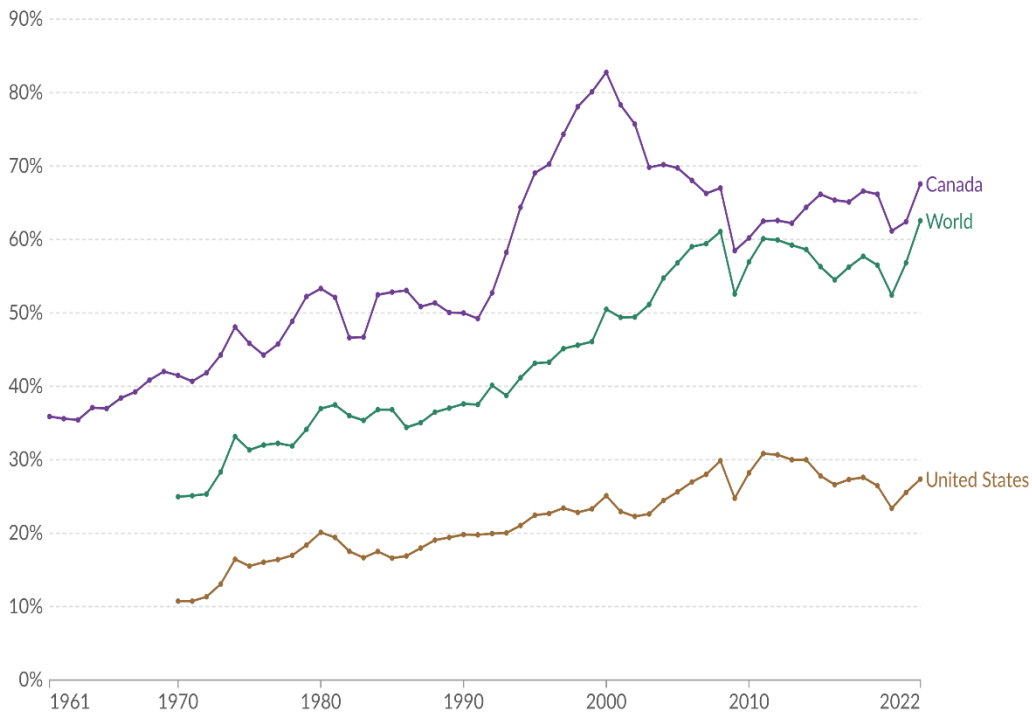
Over the past five decades, global trade has alternated between periods of rapid integration and relative stagnation. One major wave of expansion came in the late 20th century: during the 1980s and 1990s, cross-border trade grew at an unprecedented pace, propelled by falling trade barriers, advances in transportation and communication technologies, and widespread market liberalization. Since the late 2000s, however, this expansion has lost momentum – and by some measures even partially reversed – due to deeper structural shifts. A plateau in pro-trade policies, rising protectionism, the maturing of global supply chains (reducing the gains from offshoring), and shifting geopolitical alignments have all contributed to slower trade growth.

The following sections trace the evolution from the era of “hyperglobalization” to the more recent period of “slowbalization” and emerging deglobalization, before examining how these global patterns have played out in the Canadian context.

Trade as a share of GDP, 1961 to 2022



Sum of exports and imports of goods and services, divided by gross domestic product, expressed as a percentage. This is also known as the "trade openness index".



Data source: Multiple sources compiled by World Bank (2024)

OurWorldinData.org/trade-and-globalization | CC BY

Figure 1: Trade as a share of GDP for the United States, Canada and the World Economy, based on data from the World Bank.

The Era of Hyperglobalization (1986–2008)

Between 1970 and the Global Financial Crisis, global trade in goods and services grew substantially as a share of global GDP (see Figure 1). This expansion was especially pronounced from 1986 to 2008, a period often referred to as the era of "hyperglobalization." A combination of technological advancements and policy initiatives drove the expansion of trade through several key channels.

Declining Trade Costs: Significant reductions in transportation costs ([Baier and Berstrand, 2001](#); [Hummels, 2007](#)), alongside innovations in freight shipping and logistics, played a central role. These developments were reinforced by post-World War II trade liberalization efforts, including the establishment of the World Trade Organization in 1995 and the proliferation of regional trade agreements. These institutional frameworks not only promoted trade expansion but also introduced legal stability and predictability, thereby reducing the likelihood of trade conflicts and further encouraging international commerce ([Handley and Limao, 2017](#)).

Offshoring and Global Value Chains (GVCs): Advances in information and communication technologies (ICT) enabled the offshoring of production processes and the fragmentation of

supply chains across borders. This gave rise to GVCs, in which intermediate goods often crossed national borders multiple times before reaching final consumers (Baldwin, 2011).

Widening Global Participation: Political transformations—such as the collapse of communism in Eastern Europe and the gradual integration of East and Southeast Asian economies into global markets—increased the share of the global population actively engaged in trade and production networks (Antràs, 2020).

“Slowbalization” (Post-2008) and Signs of Deglobalization (post-2015)

Since the late 2000s, the growth of global trade relative to global GDP has slowed markedly—a trend widely referred to as “slowbalization.” After decades of rapid expansion, the share of trade in global economic activity has plateaued. GVCs, which the World Bank (2020) estimates account for approximately 50% of global trade, have also experienced a notable deceleration in growth since the Great Recession.

Unsurprisingly, the underlying forces behind this shift are rooted in the same domains—technology and policy—that once propelled globalization. However, whereas earlier developments fostered integration, recent trends have begun to reverse it, giving rise to signs of deglobalization since the mid-2010s.

Maturing of Key Drivers: The extraordinary pace of globalization observed from the 1980s to the early 2000s has naturally slowed as its core engines—such as the ICT revolution and China’s entry into global markets—have matured and exert less influence today than they did in earlier decades (Constantinescu, Mattoo, and Ruta, 2015; Antràs, 2020).

Rising Protectionism and Geoeconomic Fragmentation: Since the mid-2010s, protectionism has increasingly replaced earlier trade liberalization, leading to supply chain disruptions and longer trade routes, particularly following the escalation of U.S.–China tensions. This reflects broader geoeconomic fragmentation—the division of political and economic systems into less connected parts—reducing global interdependence. Figure 2 plots the measure of geopolitical fragmentation developed by Fernandez-Villaverde et al, 2025. The index illustrates a steady increase since 2008, with sharp spikes around Brexit, 2018–19 U.S.–China tensions, and the COVID-19 pandemic. Fragmentation has remained elevated following Russia’s invasion of Ukraine, while trade between geopolitically distant countries has weakened (Evenett and Fritz, 2015; Hufbauer and Jung, 2016; IMF, 2016).

Technological Change: New technologies are also reshaping globalization patterns. Advances in automation and digital production have reduced the reliance on low-cost labor, encouraging the reshoring of production to advanced economies (Acemoglu and Restrepo, 2020). At the same time, continued progress in ICT is facilitating the expansion of cross-border trade in services, even as goods trade slows.

Rising Labor Costs in Lower-Income Countries: Another contributing factor is the erosion of traditional labor cost advantages in many emerging markets. As wages have risen, the cost-

benefit calculus of offshoring has shifted, promoting production relocation and the regionalization of trade (Ceglowski and Golub, 2011; Chen, Monarch, and Yang, 2010).

Together, these forces signal not just a pause but a potential partial reversal of globalization—a shift with significant implications for economic resilience and the conduct of monetary policy in open economies.

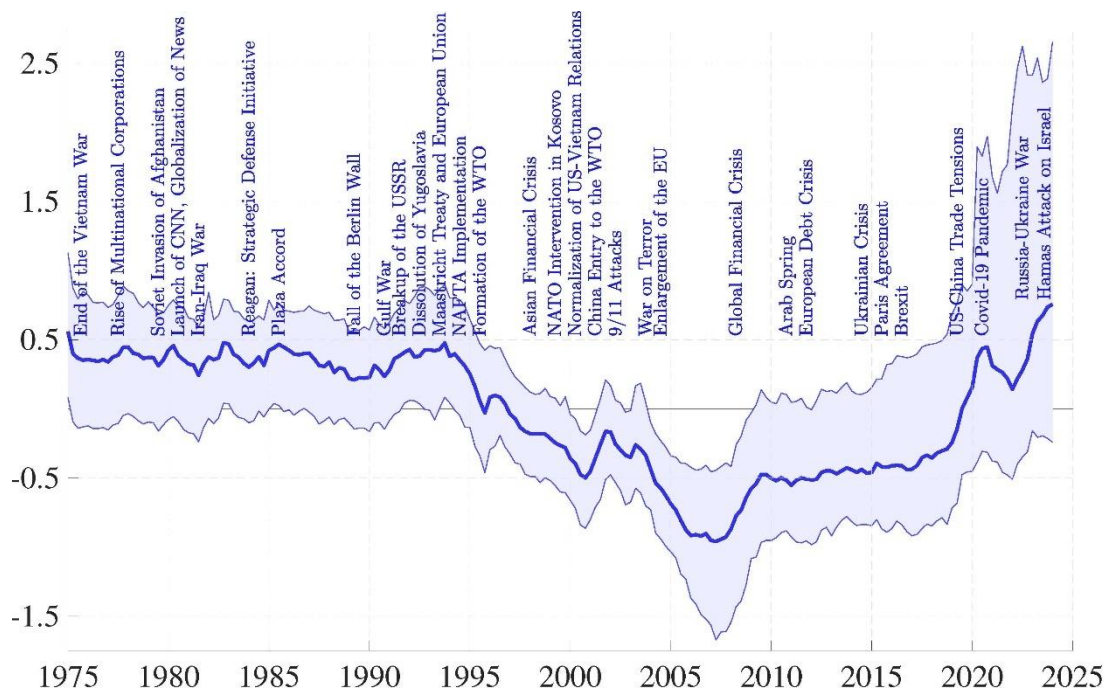


Figure 2: Geopolitical fragmentation measure from [Fernandez-Villaverde et al, 2025](#).

Global Trends, Local Patterns: Canada’s Experience with Globalization

While the broad trends of globalization and deglobalization are observed across many countries, the specific trajectory and timing of these developments often differ ([Goldberg and Reed, 2023](#)). Canada’s experience largely aligns with global patterns but also reflects specific domestic factors that shape its distinct path.

Canada’s trade-to-GDP ratio peaked around 2000, declined throughout the 2000s, and then rebounded in the early 2010s before leveling off around 2015 (see Figure 1). The rise in trade integration during the 1990s was driven in large part by the Canada–U.S. Free Trade Agreement (1988), which deepened bilateral economic ties. However, the subsequent decline in the 2000s was influenced by the United States’ shifting trade orientation toward China and Mexico, following China’s accession to the World Trade Organization and the implementation of NAFTA in 1994 ([Barnett and Charbonneau, 2015](#)).

Additionally, an appreciation of Canada’s effective exchange rate during the 2000s reduced the international competitiveness of Canadian exporters. This trend reversed in the late 2000s and

continued through the mid-2010s, when the depreciation of the exchange rate supported the recovery in export growth (Binette et al., 2015). Despite these country-specific factors, Canada's trade performance since the mid-2010s has mirrored the broader global slowdown in trade integration (Macklem, 2024).

Globalization has also shaped Canadian inflation dynamics. In the early 2000s, rising low-cost imports—especially from China—had a modest but persistent disinflationary effect. Morel (2007) estimates that Chinese import penetration lowered Canada's annual inflation by about 0.1 percentage point between 2001 and 2006, primarily through cheaper consumer goods entering the CPI basket. This direct effect was reinforced by competitive pressures from foreign producers limiting domestic firms' pricing power (Borio and Filardo, 2007; Ihrig et al., 2010). Since the mid-2010s, the slowdown in trade integration has diminished these disinflationary forces, with most of the earlier effect concentrated in tradable goods prices. As a result, services inflation—driven more by domestic wages and demand—has played a larger role in shaping overall inflation dynamics (Forbes, 2019).

Empirical Evidence on the Macroeconomic Effects of Tariffs

Globalization has helped contain inflation in advanced economies by easing cost pressures and bottlenecks, as well as spurring price competition in tradable goods. Empirical evidence—largely from micro-level price data—shows that greater import integration reduces domestic prices.¹ However, quantifying the disinflationary impact of globalization is challenging due to limited causal evidence at the aggregate level. Most macro-level analyses conclude that the effect has been relatively small (e.g., Attinasi and Balatti, 2021).

Empirical studies have also assessed the macroeconomic impact of tariffs. Since past tariff hikes have typically been narrow in scope and short-lived in advanced economies, available data offer limited insight into the effects of large and persistent deglobalization shocks.

Historical tariff hikes have resulted in higher inflation, although the effects were quantitatively modest and short-lived, as tariffs typically targeted a small portion of total imports. Barattieri, Cacciatore, and Ghironi (2021) demonstrate this result using tariff data from antidumping duties for Canada. The 2018 U.S. tariffs fully fed into higher prices for affected imports yet added only around 0.1–0.2 percentage point to core inflation (see Barbiero and Stein, 2025; Minton and Somale, 2025).

Tariffs on intermediate inputs tend to have stronger inflationary spillovers than those on final goods, since cost increases propagate through the production network (Barattieri and Cacciatore, 2023). More broadly, economic fragmentation that disrupts supply chains can

¹ For example, Jaravel and Sager (2019) find that a one percentage point increase in Chinese import penetration caused U.S. consumer prices to fall by about 1.9%, mainly by compressing domestic markups.

create sustained inflationary pressures, as demonstrated by the energy shortages following Russia’s invasion of Ukraine (Ascari et al, 2024; IMF, 2024).

Another strand of the literature studies tariff pass-through, i.e., how tariffs affect import (border) prices and how quickly these effects feed into consumer prices. Evidence from the 2018 U.S.–China trade war indicates that tariffs caused a rapid and nearly complete rise in import prices, but pass-through to consumer prices was less complete. This reflects the role of wholesale and retail margins, as well as firms’ pricing strategies, in dampening the impact of tariffs on final prices (Fajgelbaum et al., 2020, and 2022; Cavallo et al., 2021; Amiti et al., 2019). Similarly, Cavallo et al. (2025) show that the 2025 U.S. tariffs prompted quick adjustments in consumer prices, though their magnitude was modest relative to the announced tariff rates and varied by the country of origin.²

Concerning output, employment, and investment, existing evidence suggests that protectionist policies do not lead to significant employment gains in protected industries, while also creating negative spillover effects in downstream sectors due to higher input costs (Barattieri and Cacciatore, 2023). At the macroeconomic level, these policies reduce aggregate investment and output without delivering meaningful improvements in the trade balance. Input tariffs raise production costs for domestic firms that rely on imported components, dampening competitiveness and economic activity.

Trade Fragmentation and Monetary Policy: Assessing the Inflation-Output Trade-Off for Canada

Existing evidence suggests that if Canada were to face significant deglobalization pressures—such as rising protectionism and global trade fragmentation—the Bank of Canada could face a more challenging trade-off between inflation control and output stabilization. Deglobalization may lead to inflationary pressures by disrupting supply chains and increasing import costs, while simultaneously weighing on output and investment. These effects can arise both from sudden shocks (as in the case of tariffs or geopolitical disruptions) or from gradual, longer-term shifts in trade patterns, such as supply-chain reorganization or reshoring. Even if the process is slow-moving, it can reduce the disinflationary forces associated with globalization and change the persistence and nature of shocks affecting the economy. At the same time, demand-side factors, including lower household income and reduced investment stemming from trade policy uncertainty, could offset some of the inflationary pressures, potentially limiting the need for adjustments to the current framework.

Overall, a quantitative assessment specific to Canada is needed to determine the net impact of a large deglobalization shock on inflation dynamics—whether through cyclical disruptions,

² Lam (2025) provides estimates of pass-through for select sectors affected by the 2018 U.S. steel and aluminum tariffs over a longer horizon, which are higher but not directly comparable to the short-run effects measured by Cavallo et al. (2025) for the 2025 U.S. tariffs.

gradual structural changes, or both—and whether greater flexibility in the monetary policy framework—such as a wider inflation target range or a longer policy horizon—is warranted.

Canada-U.S. Trade and Monetary Policy: A Structural Model

We employ a two-country, multi-sector general equilibrium model calibrated to Canada and the United States—reflecting the central importance of U.S.-Canada trade.³

Tariff shocks propagate through production networks, affecting not only targeted sectors but also those connected through input–output linkages. Capturing these internal transmission channels is paramount for understanding the aggregate effects of tariffs. A one-sector model misses this propagation and thus underestimates both inflationary pressures and output costs (Antonova et al., 2025; Strobel et al., 2025).

Each country has five sectors: 1. Agriculture, Fishing, and Forestry; 2. Mining and Quarrying; 3. Durables Manufacturing and Construction; 4. Non-Durables Manufacturing; 5. Services. Each sector produces output using a combination of domestic and imported intermediate goods, capturing the cross-border supply chain integration between Canada and the United States. Trade occurs in both final and intermediate goods, consistent with the interconnected nature of North American production networks.

Iceberg trade costs capture the economic costs associated with moving goods across borders. For brevity, we refer to an increase in such trade costs as a *tariff shock*, although we abstract from tariff revenues redistribution. This interpretation is consistent with Guerrieri, Lorenzoni, and Werning, 2025, who demonstrate that trade cost shocks can be thought of, in reduced form, as cost-push shocks. We assume that iceberg trade costs increase only for a subset of sectors—specifically, Agriculture, Fishing and Forestry; Durables Manufacturing and Construction; and Non-Durables Manufacturing—while Mining and Quarrying and Services remain exempt. This sectoral focus reflects the fact that protectionist measures, such as tariffs, supply chain reshoring, or geopolitical disruptions, tend to target goods trade while leaving services largely unaffected.

The model incorporates several features emphasized in the literature as central for understanding the macroeconomic consequences of protectionism: (i) imperfect substitution between domestic and foreign goods, as well as between goods produced across different sectors; (ii) incomplete international financial markets permitting only limited cross-country risk sharing; (iii) sector-specific nominal price rigidities (in the form of quadratic price adjustment costs).

Because the model abstracts from capital accumulation our measure of the output gap is the labor input gap, defined as labor input in deviation from its flexible-price level. From here onwards, we refer to this simply as the output gap.

³ This model builds on the framework developed in Imura (2025), which examines inflation spillovers from U.S. supply chain pressures to Canada.

Transmission Channels: Supply vs. Demand

To examine the channels operating in the model, we distinguish between the effects of U.S. tariffs on Canadian exports and Canadian tariffs on U.S. exports. The shocks analyzed here are not meant to reflect specific characteristics of actual tariff policies currently in place. In the baseline scenario, we consider a uniform, persistent 10-percentage-point increase in tariffs and analyze the dynamics of each tariff shock under two scenarios: (i) both Canada and the United States follow a historical Taylor rule; and (ii) a flexible-price equilibrium without nominal rigidities, where monetary policy plays no stabilization role.⁴

1. U.S. Tariffs on Canadian Exports

Figure 3 illustrates the response of the Canadian economy to higher U.S. tariffs on Canadian exports.

Lower demand for Canadian goods reduces output. Higher U.S. tariffs reduce the competitiveness of Canadian goods in U.S. markets, particularly in sectors heavily reliant on U.S. demand. This results in a contraction of Canadian exports, both for final and intermediate goods, which depresses domestic output and prices, contributing to a persistent decline in Canadian labor input. The fall in exports also weighs on domestic income and demand, reinforcing the contractionary effects. A real depreciation of the Canadian dollar partly offsets the decline in external demand by making Canadian goods relatively cheaper in foreign markets.

Higher import prices for Canada (via network effects) drive up inflation. Despite weaker domestic activity, CPI inflation rises due to second-round cost pressures transmitted through input-output linkages. As U.S. tariffs raise the price of U.S. goods, Canadian imports from the U.S. become more expensive, raising production costs and propagating through the Canadian supply chain. These effects are compounded by the real depreciation of the Canadian dollar, which increases the relative price of imported inputs even further, together with the price of imported final goods. The resulting increase in input costs and final goods prices contribute to a decline in Canadian imports from the U.S. and broader inflationary pressures, despite the economic slowdown.

Overall, the Canadian output gap—defined as labor input in deviations from its flexible-price level—falls. However, despite weaker domestic activity, CPI inflation moderately rises due to second-round cost pressures transmitted through input-output linkages.

⁴ We consider a Taylor rule of the form $i_t = \phi_\pi(\pi_t - \pi^*) + \phi_y(y_t - y^*)$, where the coefficient on inflation in deviation from its target (π^*) is $\phi_\pi = 1.5$ and the coefficient on the labor gap—our measure of the output gap—is $\phi_y = 0.25$. Our results remain robust when the rule is modified to include an interest rate smoothing term.

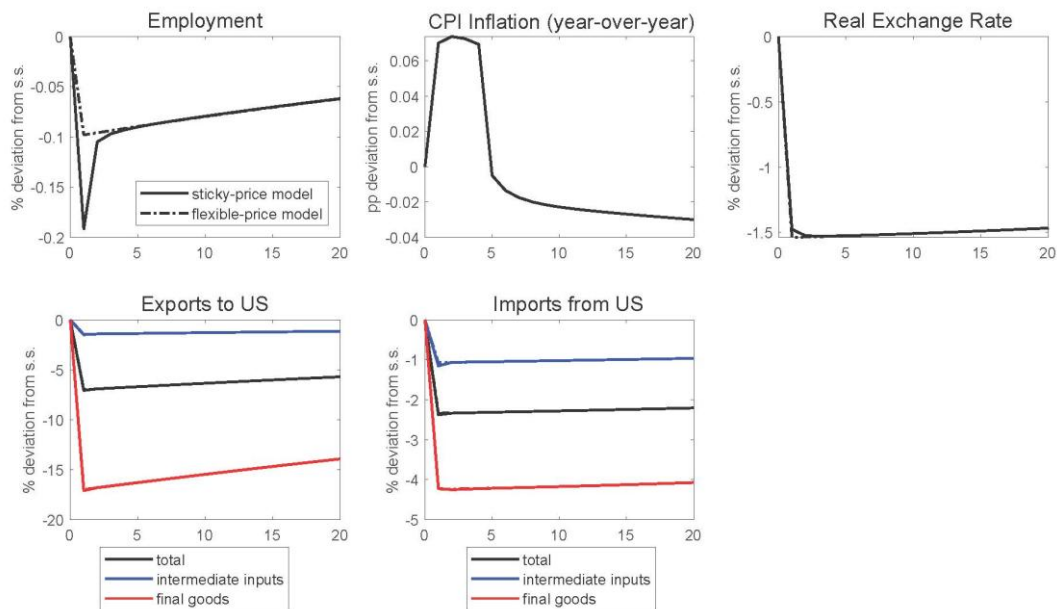


Figure 3: Impulse response functions of selected Canadian variables to a permanent 10 percentage-point increase in **U.S. tariffs on Canadian exports**. The real exchange rate is defined as the relative price of the Canadian CPI basket to the U.S. CPI basket, such that a fall represents a real depreciation of the Canadian dollar. The horizontal axis represents quarters.

2. Canadian Tariffs on U.S. Exports

Figure 4 presents the response of the Canadian economy to a 10-percentage-point increase in Canadian tariffs on U.S. exports.

Higher import prices raise production costs and fuel inflation. Canadian tariffs directly increase import prices paid by households and firms. Higher production costs for businesses reliant on U.S. inputs increase CPI inflation. In addition, Canadian tariffs raise the prices of final imported goods faced by consumers, shifting domestic spending toward Canadian-produced goods. Expenditure switching further adds to domestic price pressures, particularly in sectors operating near capacity. A real appreciation of the Canadian dollar partially offsets the inflationary pressures by lowering the relative price of foreign consumption goods.

Higher import prices depress domestic income and aggregate labor input. Higher import prices for tariffed goods lower real household income and firm profitability, reducing aggregate demand, all else equal. As a result, Canadian aggregate labor input declines persistently. Both imports from the U.S. and exports to the U.S. contract.

While both export and import tariff shocks reduce Canadian output and raise inflation, tariffs imposed by Canada have larger macroeconomic effects, reflecting the larger role of imported inputs in Canadian production chains and the larger inflationary pressure stemming from rising input costs.

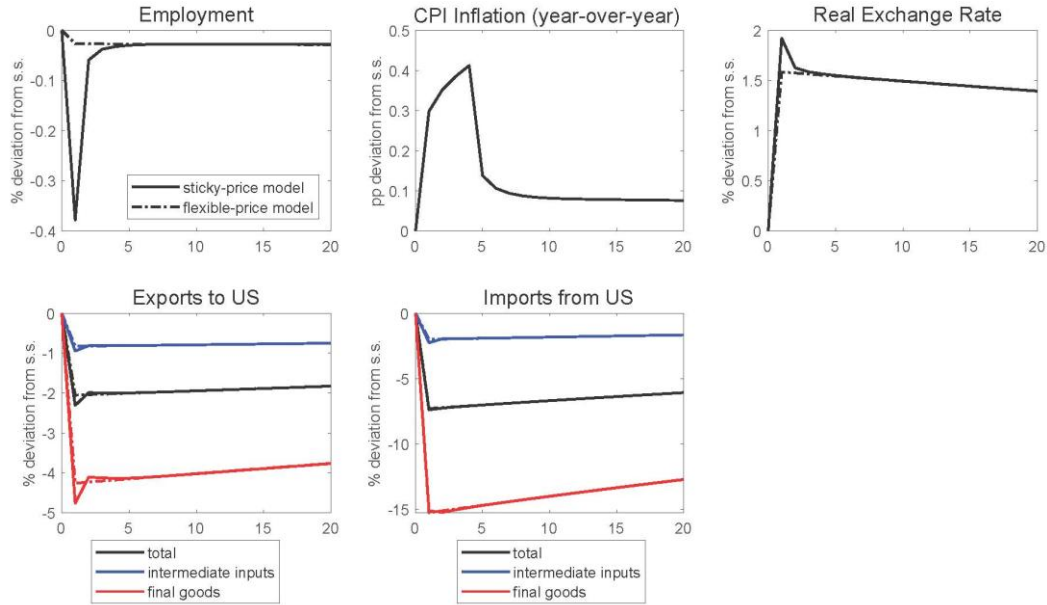


Figure 4: Impulse response functions of selected Canadian variables to a permanent 10 percentage-point increase in **Canadian tariffs on U.S. exports** (retaliatory trade policy). The real exchange rate is defined as the relative price of the Canadian CPI basket to the U.S. CPI basket, such that an increase represents a real appreciation of the Canadian dollar. The horizontal axis represents quarters.

3. Bilateral Tariffs (Trade War Scenario)

Taken together, the different channels we have discussed illustrate the complex and opposing forces that tariff shocks exert on the Canadian economy. While demand effects can be deflationary, input cost and substitution effects tend to be inflationary.

Before turning to the monetary policy implications of tariff shocks, we analyze a scenario akin to a bilateral trade war. Figure 5 presents the response of the Canadian economy to a symmetric and permanent 10-percentage-point increase in bilateral tariffs between Canada and the U.S. This scenario captures a symmetric and sustained increase in trade costs, consistent with a bilateral escalation of protectionist measures.

A bilateral trade war leads to lower output and a negative output gap, and higher inflation in Canada. Production costs rise across the board, except for services, especially when intermediate goods are targeted, and when domestic and foreign goods are not easily substitutable. At the same time, output and labor input contract, reflecting reduced export demand and weaker domestic consumption. Tariff revenue redistribution, not considered in the model, might otherwise help cushion the impact on household purchasing power and potentially add to inflationary pressures, depending on the rebate design.

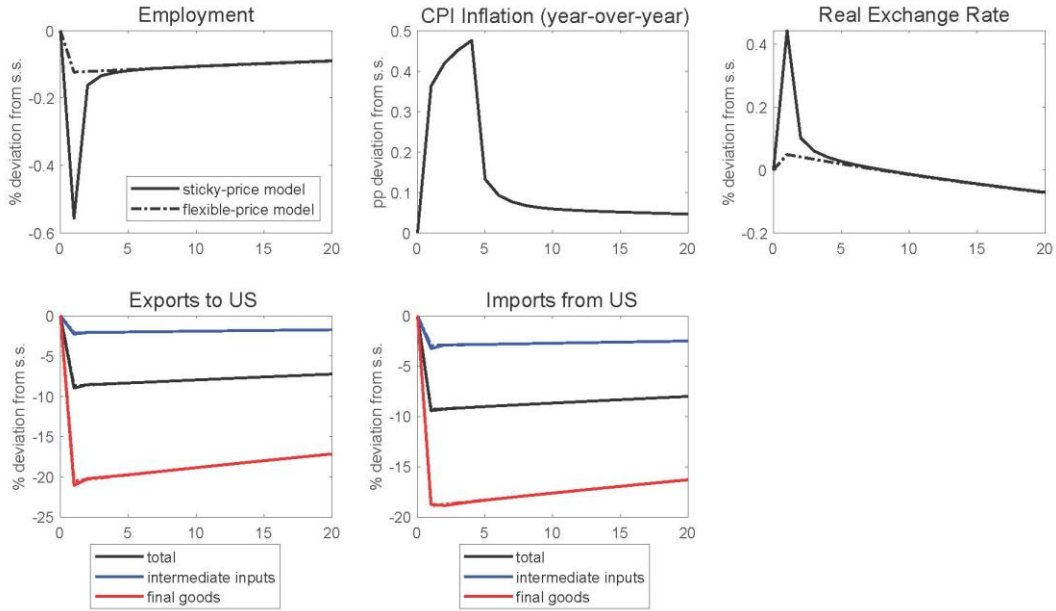


Figure 5: Impulse response functions of selected Canadian variables to a permanent 10 percentage-point increase in **bilateral tariffs**. The real exchange rate is defined as the relative price of the Canadian CPI basket to the U.S. CPI basket, such that a fall represents a real depreciation of the Canadian dollar. The horizontal axis represents quarters.

Inflation-Output Trade-Offs Triggered by Tariff Shocks

While tariff shocks generate inflationary pressures and contract economic activity, this does not automatically imply a monetary policy trade-off. A trade-off arises when it is not possible to stabilize inflation and the output gap simultaneously, e.g., when closing the output gap results in larger inflationary pressures.

To assess the extent to which tariffs pose a trade-off between stabilizing inflation and output in deviations from potential, we follow [Del Negro et al. \(2023\)](#) and simulate the model under a range of alternative Canadian monetary policies that achieve different variabilities of inflation and the output gap:

$$\alpha (\pi_t - \pi^*) + (1 - \alpha)(y_t - y^*) = 0, \quad (1)$$

where π_t denotes CPI inflation, π^* is the inflation target, and $y_t - y^*$ represents the output gap (proxied by the deviation of labor input from its flexible-price level). The parameter $\alpha \in [0,1]$ governs the central bank's relative preference on inflation stabilization versus output gap stabilization.⁵ While most of our discussion focuses on the two extreme cases— $\alpha=1$, corresponding to strict inflation targeting, and $\alpha=0$, corresponding to strict output gap targeting—we also evaluate the trade-off for intermediate values of α . The case with $\alpha=0$ can

⁵ The rule we consider assumes that the central bank has preferences over stabilizing CPI inflation and the output gap. Outcomes from such a rule do not necessarily nest those implied by the optimal policy under commitment that maximizes the present discounted value of households' welfare.

be interpreted as a central bank that fully ‘looks through’ inflationary pressures arising from tariff shocks.

We consider the bilateral trade war scenario discussed above (see Figure 5): a permanent 10 percentage-point increase in bilateral trade costs between Canada and the United States, excluding Services and Mining and Quarrying. Outcomes are assessed in terms of average deviations of year-over-year CPI inflation relative to its target (in percentage-points) and the output gap (in percent).⁶

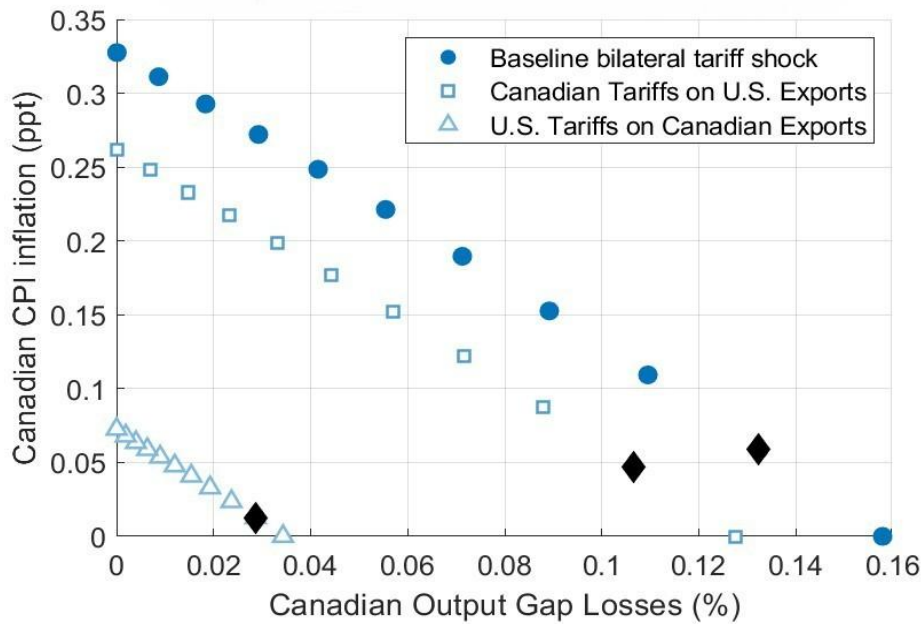


Figure 6: Canadian Inflation-Output Trade-Off following a permanent 10 percentage-point raise in bilateral trade costs with the United States, for different values of $\alpha \in [0,1]$. The vertical axis shows the two-year average deviation of year-over-year CPI inflation from target (in percentage points), while the horizontal axis measures average output gap losses (in deviation from its flexible-price level) over the same horizon (in percent). Black diamonds indicate the optimal degree of inflation stabilization under balanced central bank preferences that assign equal weight to inflation and output gap losses.

Figure 6: Canadian Inflation-Output Trade-Off following a permanent 10 percentage-point raise in bilateral trade costs with the United States, for different values of $\alpha \in [0,1]$. The vertical axis shows the two-year average deviation of year-over-year CPI inflation from target (in percentage points), while the horizontal axis measures average output gap losses (in deviation

⁶ Lipinska et al. (2025) provide an assessment of the policy trade-off in the 2021–23 period, reflecting the pandemic and Russia’s invasion of Ukraine, for different countries. Their approach is similar to ours but focuses on a single case (our case when $\alpha = 1$). Specifically, for a given estimated Phillips curve, they calculate the counterfactual labor market impact, measured as the decline in the output gap needed to fully stabilize inflation at its target.

Figure 6 demonstrates that a bilateral trade war where tariffs increase by 10 percentage points generates a trade-off between inflation and output gap stabilization. In this scenario, it is impossible to simultaneously stabilize CPI inflation at its target and close the output gap, as the trade-off frontier does not pass through the origin. Consequentially, there is no divine coincidence. For inflation to remain at target when tariffs spike, the monetary policy stance needs to contract to reduce the price of domestically produced goods, which is only possible if output falls below potential. Quantitatively, achieving full CPI inflation stabilization over a two-year horizon requires tolerating 0.16 percent reduction in output relative to its potential. Conversely, fully closing the output gap results in a 0.32 percentage-point increase in year-over-year inflation.

The trade-off under a trade war is notably more severe compared to the case of unilateral tariff increases: a 'look through policy' entails accepting a 0.26 percentage-points increase in CPI inflation when only Canada imposes tariffs, whereas the figure is 0.07 for U.S. tariffs.

Thus far, we have focused on the output cost of stabilizing inflation, which is proportional to the size of the shock. We now turn to the sacrifice ratio, defined by the inverse of the slope of the trade-off frontier. Intuitively, the larger the output loss needed to achieve a 1 percentage-point reduction in inflation, the larger the sacrifice ratio—corresponding to a flatter frontier in Figure 6. In our simulations, the sacrifice ratio is similar across the different tariff scenarios we consider. Figure 6 also plots, for each frontier (black diamonds), the optimal degree of inflation stabilization for balanced central bank preferences that assign equal weight to inflation and output gap losses. Since the sacrifice ratio is constant across scenarios, the loss-minimizing value of the parameter α is also the same and, for these particular preferences, close to price stability over a two-year horizon.

While the chart focuses on two-year averages, we note that the inflation rate returns to target within a two-year horizon for all the monetary policy rules we consider, including fully looking through the tariff increase.

Overall, the trade-off appears manageable for a tariff shock of a magnitude consistent with current policy scenarios. In the case analyzed, the model implies that policy responses aimed at aggressively stabilizing the output gap still keep inflation within the control range. In other words, the framework allows for the flexibility that a richer monetary policy playbook requires, including stabilizing output at a moderate inflation cost over a two-year horizon. However, this conclusion hinges on the size of the trade cost shock. Larger shocks would push the trade-off frontier to the right (see Figure 7), implying that looking-through policies might become too costly in terms of inflation volatility. This result underscores that the magnitude of shocks is itself one of the circumstances qualifying the richer playbook: looking through presents limited inflation risk insofar as the shock is not too large or too persistent. This result adds to the recent

literature studying the effects of large shocks on inflation dynamics in the post-COVID period (e.g., Hajdini et al., 2025).

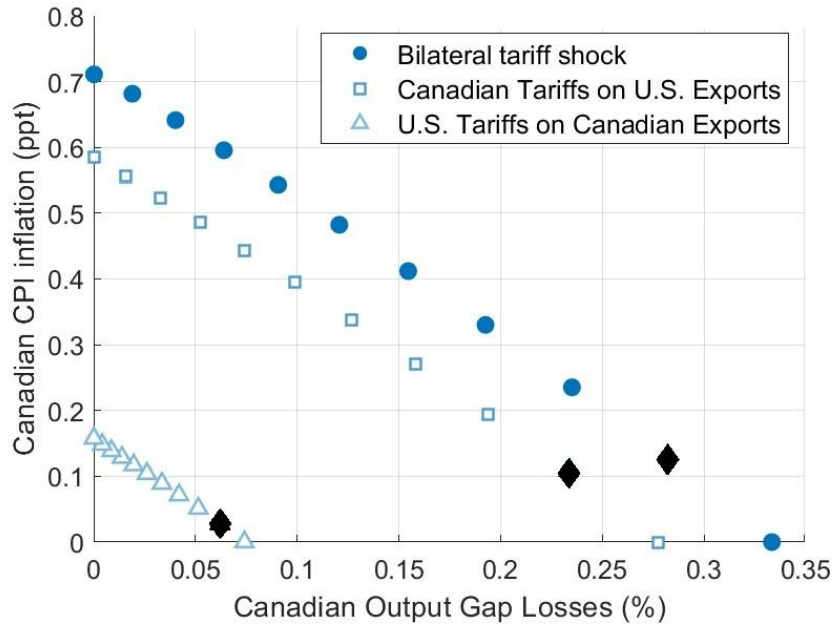


Figure 7: Canadian Inflation-Output Trade-Off following a permanent **25 percentage-point** raise in bilateral trade costs with the United States. Black diamonds indicate the optimal degree of inflation stabilization under balanced central bank preferences that assign equal weight to inflation and output gap losses.

The presence of a trade-off between stabilizing output and CPI inflation following tariff shocks reflect the multi-sector structure of the model economy and the divergence between consumer and producer prices in open economy. As highlighted in Aoki (2001), in multi-sector models, the existence and severity of the trade-off depends on the inflation index the central bank targets, a point we will revisit later. Moreover, the existence of a trade-off between inflation and output gap stabilization aligns with the recent literature studying monetary policy implications of higher tariffs (e.g., Guerrieri, Lorenzoni, and Werning, 2025; Monacelli, 2025; and Crescentini et al., 2025).

Several factors affect the severity of the trade-off, which we now discuss.

Persistence of tariffs. Figure 8 shows that the output cost of stabilizing inflation is smaller when the half life of tariffs is expected to be temporary (two years in the case we analyze). As the price increase is expected to be temporary, inflation stabilization entails smaller output gap losses. Similarly, fully closing the output gap results in more moderate inflationary pressures.⁷

⁷ Over a two-year horizon, the inflation cost of fully closing the output gap is slightly lower relative to the case where the central bank assigns a small weight to inflation stabilization (e.g., $\alpha = 0.2$). The reason is that when tariffs are

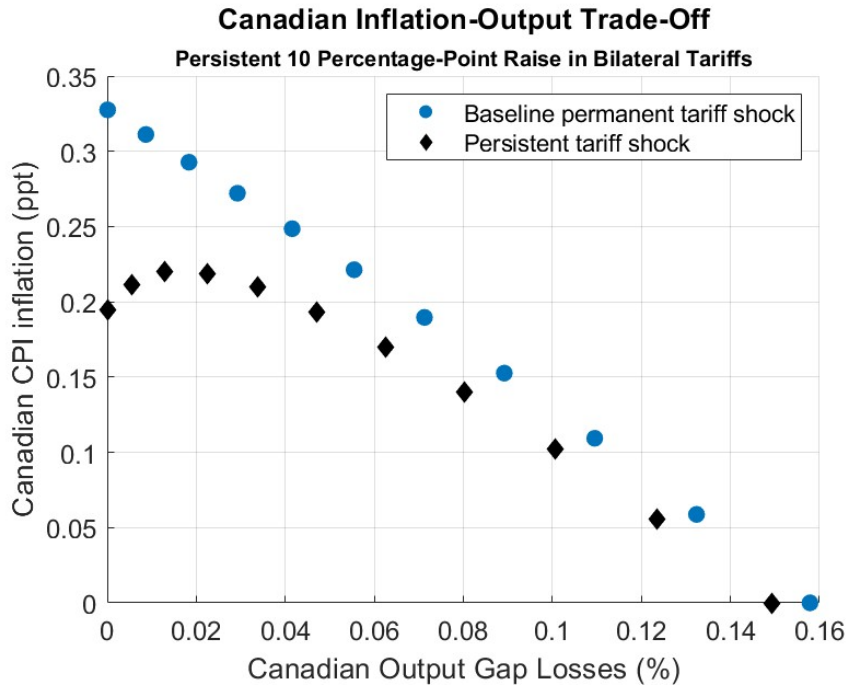


Figure 8: Canadian Inflation-Output Trade-Off following a **persistent** 10 percentage-point raise in bilateral trade costs with the United States, with a half-life of roughly 2 years, for $\alpha \in [0,1]$.

Final Goods vs Intermediate Input Tariffs. The monetary policy trade-off depends on whether tariffs are imposed on final consumption goods or on intermediate inputs. Tariffs on final goods directly raise consumer prices, depressing aggregate output without changing domestic firms' cost structure. Tariffs on intermediate goods, instead, raise firms' input costs, directly affecting potential output. As a result, while labor input and output decline more persistently following a hike in intermediate input tariffs, the output gap is smaller, and accordingly the trade-off is less severe. Figure 9 illustrates this result by plotting the potential (e.g., flexible-price) labor input response (dashed lines in the left panel), which falls by more over a two-year horizon under intermediate-goods tariffs. As a result, a policy of strict inflation targeting results in a smaller output gap with intermediate input tariffs.

temporary, a policy that fully closes the output gap ($\alpha = 0$) results in a larger initial increase in CPI when tariffs are imposed but also produces a larger and more persistent CPI decline once tariffs are lifted.



Figure 9: Impulse responses of Canadian labor input and the labor input gap (our measure of the output gap) to a permanent 10-percentage-point rise in bilateral trade costs. The blue line shows retaliation limited to final consumption goods; the red line shows Canadian tariffs on U.S. intermediate imports. In all cases, Canadian monetary policy is assumed to fully stabilize CPI inflation ($\alpha = 1$).

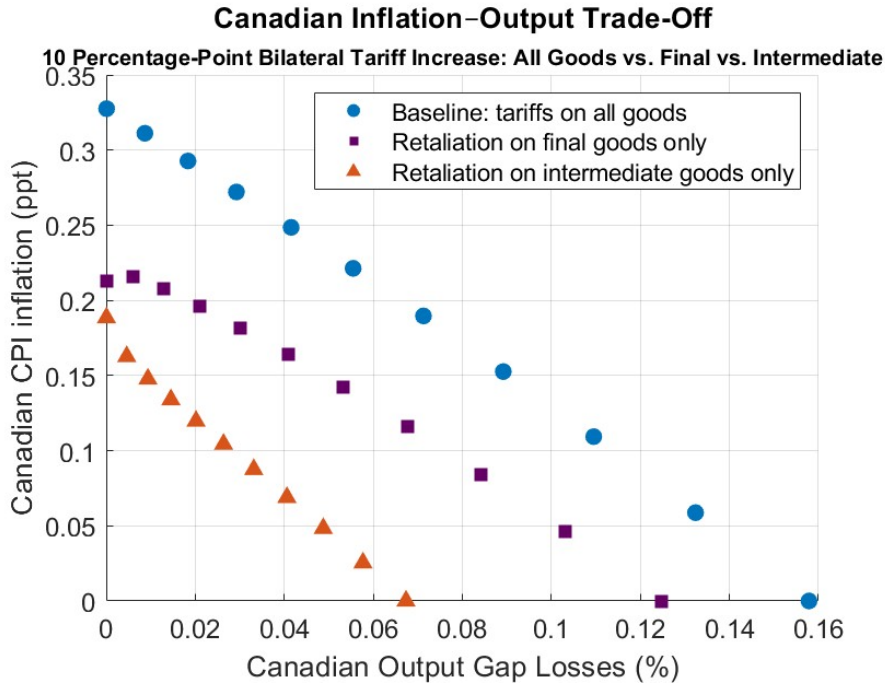


Figure 10: Canadian Inflation-Output Trade-Off following a permanent 10 percentage-point rise in bilateral trade costs with the United States, when **retaliatory tariffs** are imposed on **final consumption goods** or on **intermediate inputs** only, for $\alpha \in [0,1]$.

This implies that although the labor-input cost is unambiguously larger when tariffs target intermediate goods, the monetary policy trade-off is less severe in that case (see Figure 10).

PPI vs CPI Stabilization. For a given level of persistence and the sectors targeted by tariffs, recent literature emphasizes that the measure of inflation targeted by the central bank has

implications for the severity of the monetary policy trade-off (see e.g., [Bergin and Corsetti, 2023](#); [Monacelli, 2025](#)). The argument traces back to standard open-economy models featuring sticky producer prices and complete risk sharing across countries, where “divine coincidence” holds. That is, the central bank can close the output gap when stabilizing producer price inflation (PPI) following technology shocks. We assess whether this result extends to tariff shocks in the context of our richer model, specifically, whether targeting PPI rather than CPI inflation mitigates the inflation-output tradeoff. Figure 11 shows the inflation-output gap trade-off under these two distinct inflation targets: CPI vs. PPI. The figure demonstrates that targeting PPI inflation cushions the economy from tariff shocks: fully stabilizing PPI inflation (as opposed to CPI) entails a smaller output gap, and fully looking through the tariff shocks results in a more modest increase in both PPI and CPI inflation. This finding aligns with [Aoki \(2001\)](#), who shows that in multi-sector models with sector-specific price rigidities, monetary policy achieves greater aggregate output stabilization when stabilizing prices in relatively stickier sectors. Since in our model producer prices are more rigid than import prices, a PPI-based rule not only mitigates output losses but also delivers lower overall inflation.

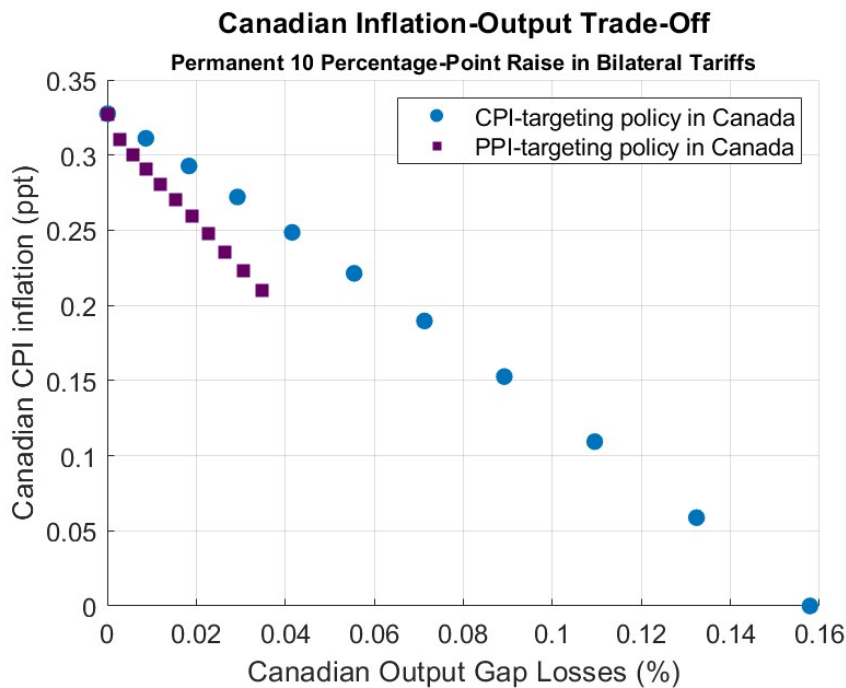


Figure 11: Canadian Inflation-Output Trade-Off following a permanent 10 percentage-point raise in bilateral trade costs with the United States, for different values of $\alpha \in [0,1]$, when **Canadian monetary policy stabilizes PPI vs. CPI**.

To conclude, a few caveats are in order, as the model abstracts from several factors that could influence the inflation–output trade-off. First, we abstract from trade policy uncertainty, which—even without actual tariff changes—can have macroeconomic effects ([Macklem, 2024](#)). Tariff threats may trigger an additional demand contraction, mitigating inflationary pressure, all else equal (e.g., [Caldara et al., 2020](#)). Moreover, the effects of uncertainty depend on where

they occur in the supply chain, as increased uncertainty in upstream sectors can manifest as supply-side disturbances ([Cacciatore and Candian, 2025](#)), implying potentially more adverse trade-offs. To the extent that uncertainty dampens inflation more than activity, however, the trade-off for monetary policy could be less severe. Second, the model abstracts from tariff revenue redistribution. Thus, we do not consider the possibility that additional fiscal revenue could partially offset the negative impact of tariffs by stimulating demand through their redistribution or allowing for tax cuts on capital and labor (see [Alessandria et al, 2025](#); [Bianchi and Coulibaly, 2025](#)). Such offsets would imply a somewhat less severe trade-off than the one modeled here. Third, our analysis abstracts from the effects that tariff wars and threats have on consumers' and business' confidence and their inflation expectations. Finally, our two-country model does not account for trade diversification, i.e., the shift in the destination of Canadian exports caused by U.S. trade policies ([Macklem, 2025](#)). Diversification could cushion output losses.

Conclusions

As the global economy faces rising risks of deglobalization and fragmentation, central banks will encounter a more challenging inflation–output trade-off. Our scenario analysis indicates that the inflationary pressures generated by protectionism and trade fragmentation—at least for trade cost increases comparable to recent measures adopted by the U.S. and Canadian administrations—remain manageable under the existing monetary policy framework. The framework provides sufficient flexibility to return inflation to target within the standard policy horizon, even when tariff shocks are fully looked through. While such flexibility allows the Bank of Canada to navigate short-term stabilization needs amid rising protectionism, the conclusion depends on the size and persistence of trade cost shocks—larger shocks make “look-through” policies more costly and riskier in terms of inflation volatility and de-anchoring—and on whether tariffs are levied on final or intermediate goods.

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