

Dynamic effects of industrial policies amidst geoeconomic tensions



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Abstract

Amid escalating geoeconomic tensions, industrial policy has reemerged as a central instrument of government strategy. This policy brief analyses its dynamic and welfare implications within an open-economy framework that incorporates trade and offshoring. Although short-term gains may seem appealing, they often fail to compensate for long-term losses, as firm creation is both slow and costly. If policymakers focus excessively on immediate outcomes, their choices may yield temporary welfare or wage-equality improvements at the expense of sustained long-run welfare.

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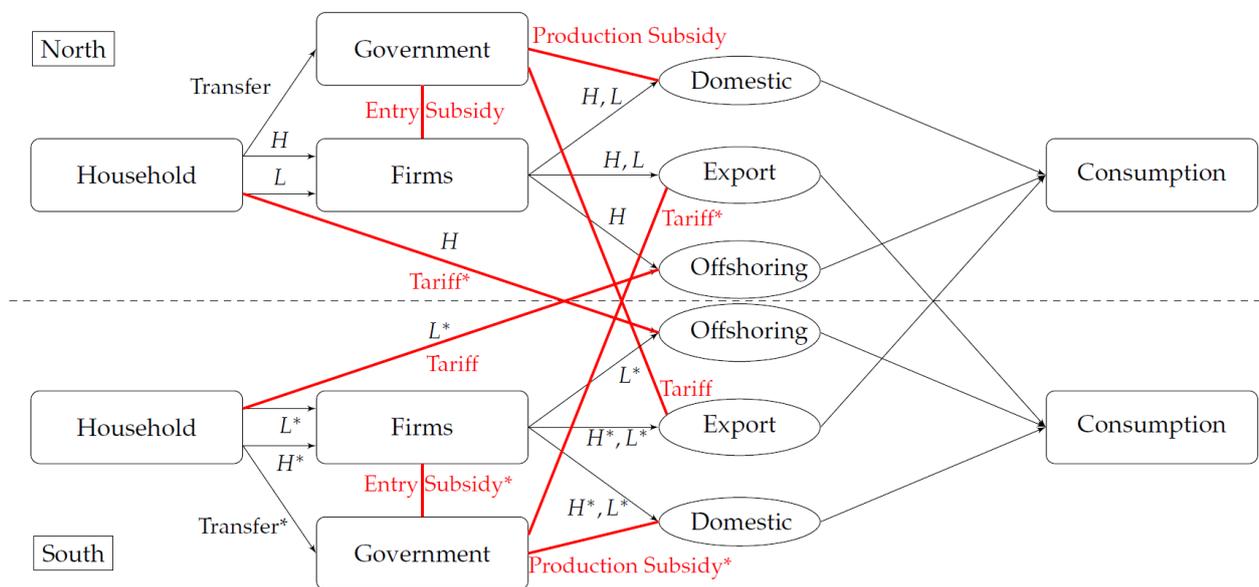
Introduction

The world economy has shifted from a period of integration to one marked by persistent disruption and backlash. The U.S.–China trade war that began in 2018 added strain to an already weak post–financial crisis recovery. Global value chains faced further pressure from the COVID-19 pandemic and the wars in Ukraine and the Middle East (Aiyar et al, 2023). Amid these waves of geoeconomic tension, industrial policy has reemerged as a key tool for governments seeking to advance national interests and global competitiveness. These policies have often been volatile, reactive, and focused on short-term goals such as “addressing near-term supply chain disruptions” (The White House, 2021). Evaluating their outcomes is difficult, as they operate through complex general-equilibrium interactions in the global economy. Our study (Ding et al., 2025) develops an open-economy framework, grounded in trade and offshoring, to quantify the intertemporal effects of industrial policy interventions.

A framework for understanding dynamic effects of industrial policies

In our framework, the North represents the country with a greater supply of skilled labor, while the South is relatively abundant in unskilled labor. Households in each country save by investing in local firm equities, anchoring the equilibrium’s intertemporal dynamics. Since industrial policies affect firms differentially, we incorporate firm-level productivity heterogeneity, endogenous firm entry, and decisions to export and/or offshore production. The model features a single production sector in order to transparently isolate the role of firm dynamics within an industry in shaping the welfare effects. The offshoring framework extends Zlate (2016) by embedding trade-in-tasks à la Grossman and Rossi-Hansberg (2008), allowing for two-way offshoring. Labor endowment asymmetries generate wage disparities across skill types, which offshoring firms exploit by paying a fixed cost to relocate tasks that are intensive in their relatively scarce factor.

Figure 1. Model Structure



Source: Ding, Spencer and Wang (2025)

Note: H and L stand for the high-skilled and low-skill labour in the North, H^* and L^* stands for the high-skilled and low-skilled labour in the South. South variable and policies are indicated with $*$.

Unilateral industrial policies in our model act on three static distortions as in Felbermayr, Jung, and Larch (2013):

- Monopolistic competition creates a *markup distortion* on the intensive margin, making consumption of each domestic variety suboptimally low relative to imports.
- A *consumer-surplus distortion* arises on the imported-variety extensive margin. Because the mass of imported varieties is endogenous and home consumers do not capture foreign firms’ profits, they fail to

internalize that higher import spending raises foreign export profitability and encourages new entry. As a result, the number of imported varieties is inefficiently low.

- A classic *terms-of-trade externality* allows the policymaker to improve national welfare by manipulating import demand to increase the relative price of trade, unlike private agents who treat this price as given.

While policy interventions operate on these distortions, forward-looking households smooth the induced changes in real income. Consequently, the welfare effects of each static distortion unfold over time rather than occurring only on impact.

We calibrate the model to the U.S.–China context and assess the welfare effects of industrial policy tools from the perspective of a unilateral policymaker with differing time horizons of interest. These horizons are modelled as alternative evaluation windows—ranging from full-transition welfare to one- and four-year objectives—with shorter windows capturing policymaker myopia. The policy instruments include import tariffs (on final and offshored imports), domestic production subsidies, and entry subsidies. Each policy change is introduced as a temporary shock that decays according to an AR(1) process, with its initial size calibrated so that the net present value of the total fiscal effect equals 1% of pre-reform world consumption.

Welfare and distributional effects of unilateral industrial policies

Table 1. Welfare for unilateral industrial policies

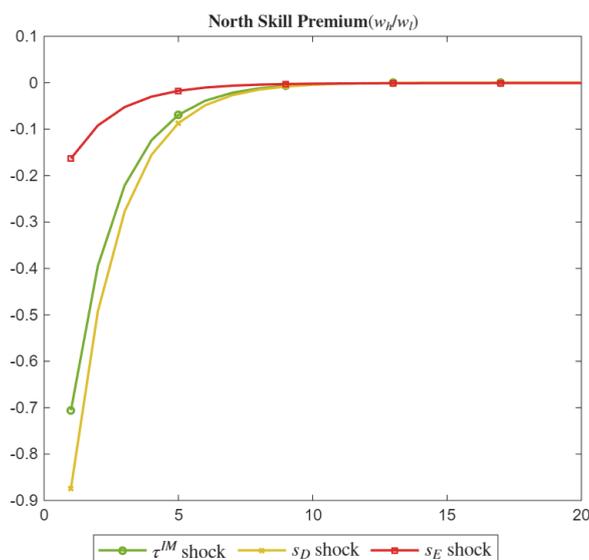
	Time horizon		
	One year	Four years	Entire transition
Import Tariff (τ^{IM})	(-0.0432, -0.2432)	(0.0286, -0.0848)	(0.0126, -0.0162)
Production Subsidy (s_D)	(0.3189, -0.1105)	(0.0632, -0.0337)	(0.0035, -0.0046)
Entry Subsidy (s_E)	(-0.9247, -0.0362)	(-0.1450, -0.0133)	(0.0036, -0.0054)

Source: Ding, Spencer and Wang (2025)

Note: Welfare based on NPV 1% of world consumption shock to individual policy instruments in the North. Numbers in parentheses are (welfare gain North, welfare gain South) expressed in consumption equivalent variation. Numbers are percentages (after multiplication by 100) of initial steady state consumption level.

Our first quantitative result is that policy rankings depend on the policymaker’s time horizon, as shown in Table 1. In the North, starting from a policy-free baseline, small production subsidies perform best over short horizons, tariffs dominate over longer ones, and entry subsidies are always inferior. These outcomes reflect how each policy reallocates resources across firms. Production subsidies expand incumbent activity and discourage entry, raising short-run consumption. Tariffs support both incumbents and entrants, lowering short-run consumption as entry and import prices rise but generating long-term welfare gains through higher productive capacity. Entry subsidies, by contrast, overemphasize new firm creation, drawing resources from incumbents, causing a sharper short-run contraction and only modest long-run benefits. As shown in Figure 2, all three policies reduce wage inequality, with production subsidies having the strongest effect due to their largest impact on reshoring production.

Figure 2. Wage inequality for unilateral industrial policies



Source: Ding, Spencer and Wang (2025)

Note: Impulse responses of North skill premium to NPV 1% of world consumption shock to individual policy instruments in the North. Variables are presented as percentage deviations from the initial steady state (all after multiplication by 100).

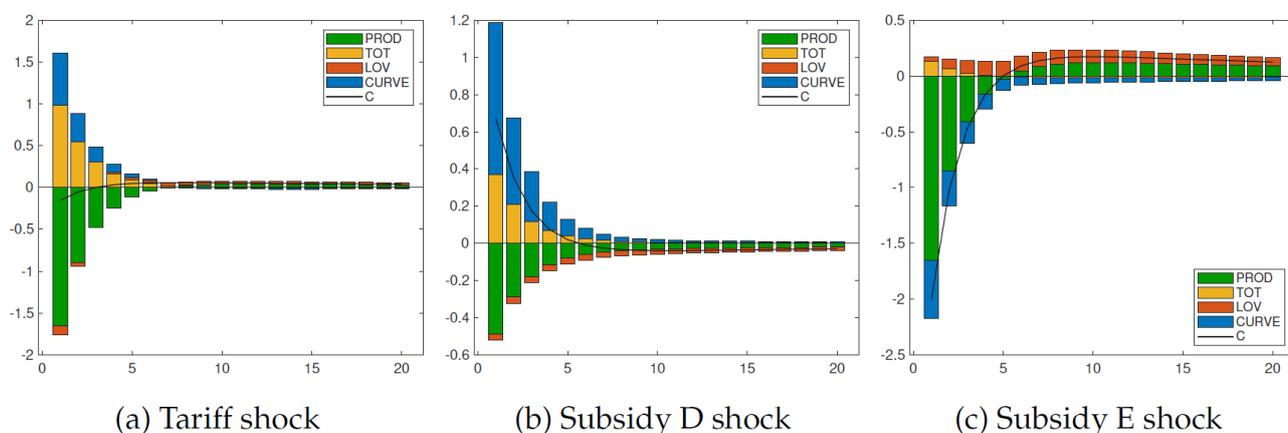
Understanding welfare through consumption decomposition

To better understand our unilateral welfare results, we follow Demidova and Rodriguez-Clare (2009) to decompose the consumption aggregator (C) into the following four components:

$$C = \text{PROD} * \text{TOT} * \text{LOV} * \text{Curvature}$$

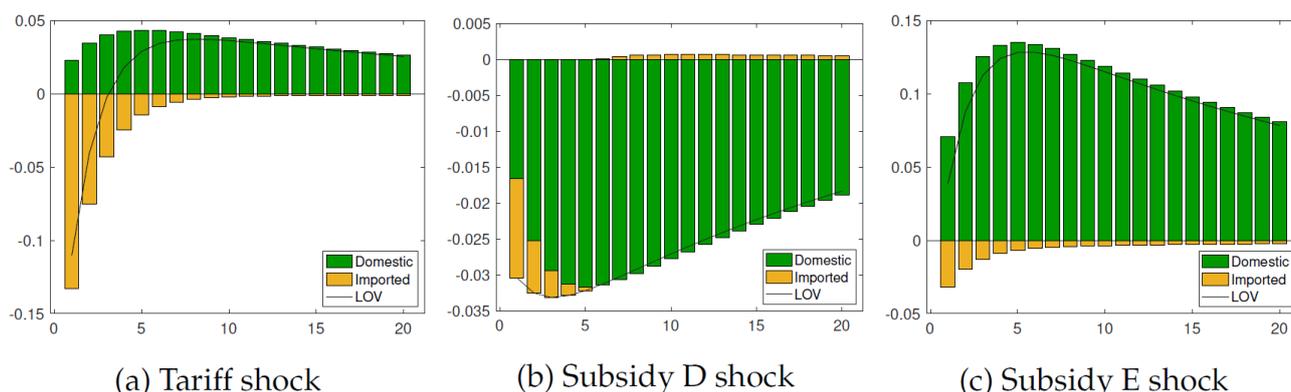
The first component, PROD, is a productivity index measuring output per worker. The second, TOT, captures the trade-adjusted terms of trade. The third, LOV, is a love-of-variety index combining domestic and imported varieties. The fourth, CURVE, is a curvature term reflecting the combined influence of all other channels on consumption.¹ Figure 3 plots these four components for each policy instrument.

Figure 3. Decomposition of consumption



Source: Ding, Spencer and Wang (2025)

¹ The curvature component is needed to convert the productivity measure into something that matters for welfare as in Demidova and Rodriguez-Clare (2009); see footnote 13 of their paper.

Figure 4. Decomposition of love-of-variety (LOV) index

Source: Ding, Spencer and Wang (2025)

Starting from the calibrated steady state without policy interventions, a small increase in **import tariffs** shifts market shares toward less efficient domestic firms, reducing aggregate productivity ($PROD\downarrow$). The tariff, however, addresses the terms-of-trade externality through the standard monopsony power channel ($TOT\uparrow$). By making foreign varieties relatively more expensive, it pushes households to rebalance consumption toward domestic goods, easing the markup distortion but worsening the consumer-surplus distortion, as shown by the decline in the imported-variety channel in panel (a) of Figure 4. Although the protective environment promotes investment in firm creation, the positive effect on domestic variety (the domestic-variety channel) is outweighed by the decline in imported varieties ($LOV\downarrow$) on impact. Combined with the sharp fall in aggregate productivity, these offset the static efficiency gains from improved markup distortion and TOT, resulting in a short-run contraction in consumption.

A small increase in the **production subsidy** shifts market shares toward less productive domestic firms by lowering their marginal production costs, thereby reducing aggregate productivity ($PROD\downarrow$). At the same time, higher domestic output raises labor demand, appreciating the terms of labor and improving the terms of trade ($TOT\uparrow$). The resulting decline in the relative price of domestic varieties, similar to the tariff case, expands their share in consumption, easing the markup distortion but worsening the consumer-surplus distortion. Unlike the tariff, however, the subsidy has a markedly different effect on short-run consumption. By raising wages, it increases firm entry costs, and together with the lower price of domestic varieties, gives households strong incentives to boost current consumption while reducing investment in new firm creation ($LOV\downarrow$). This outcome is manifested by a sharp rise in the curvature term ($CURVE\uparrow$), driven by a higher share of domestic consumption.

The **entry subsidy** operates differently from the other instruments. Because it acts on the extensive margin, it does not directly affect the markup distortion. However, higher labor demand raises the terms of labor and improves the terms of trade ($TOT\uparrow$), partly offsetting efficiency losses from a worsening consumer-surplus distortion. By lowering entry costs, the subsidy strongly encourages investment in firm creation but diverts resources away from final goods production ($PROD\downarrow$) and subsequently causing a sharp initial drop in consumption.

By differentially affecting households' incentives to smooth consumption through investment in firm creation, these policy instruments lead to distinct transitional paths in the consumption profiles. As the magnitudes of each policy decline according to the AR(1) process, the $PROD$ and LOV indices become the main drivers of welfare outcomes. Intuitively, this shows that changes in varieties due to sluggish entry of firms, and their associated impacts on aggregate productivity through reallocation of market shares, generate persistent welfare effects. While both indices contribute positively under tariffs and entry subsidies, their effects are negative under production subsidies. Thus, within-industry firm-level dynamics play a central role in shaping the time profile of welfare effects across policy instruments.

Conclusion

Our results underscore the value of using a dynamic general-equilibrium framework for assessing industrial policy. The model's micro-foundations bring firm dynamics to the center of the policy debate, particularly when governments employ industrial measures to enhance economic competition. We find that, from an initial state free of interventions, myopic policymakers tend to favor production subsidies, whereas more forward-looking ones are incentivized to use import tariffs. While all the policies examined in our analysis initially reduce wage inequality, some result in aggregate welfare losses, either in the short run or the long run.

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