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SPECIAL ISSUE ARTICLE

The Likely Micro- and Macro-Economic Consequences of a Unilateral US Trade Policy

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Abstract

This paper examines the likely economic consequences of a unilateral US trade policy, particularly those involving across-the-board tariffs and retreat from multilateral commitments. Drawing on computable general equilibrium (CGE) models, dynamic macroeconomic frameworks, and a rich body of empirical literature, the paper demonstrates that the static efficiency losses, estimated by standard trade models, understate the true costs of protectionism. It identifies five key amplification channels – loss of economies of scale, supply chain fragility, diminished technological spillovers, investment hold-up under policy uncertainty, and financial market reactions – that interact to depress both short-run output and long-run growth potential. The analysis estimates that comprehensive unilateral trade measures could reduce US GDP by 2–3% in the short term and lower the long-term growth trajectory by 0.4–0.7 percentage points annually. While some strategic interventions may yield resilience or national security benefits, the paper concludes that unilateralism generates systemic economic risks and should be approached with caution. The findings underscore the need for integrated policy frameworks that combine targeted trade tools with domestic support and international cooperation.

Keywords: Trade policy; Tariffs; General equilibrium modeling; Allocative efficiency; Investment impacts; Economic security

JEL Classification: F41; D58; F62

1. Introduction

The global economic system built in the aftermath of World War II has rested heavily on a multilateral rules-based trading system. For much of the postwar era, the United States was a key architect and leader of this system, reaping significant benefits in productivity, innovation, and influence from its central position in global trade networks. Institutions such as the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO) provided mechanisms for resolving disputes, reducing barriers, and encouraging economic integration. American firms flourished within these arrangements, leveraging access to global markets, talent, and supply chains. Consumers, in turn, enjoyed lower prices and greater product variety as international competition fostered efficiency and innovation.

Yet recent shifts in US policy – most visibly under the Trump administration and anticipated again in a potential second term – signal a decisive break from this legacy. The renewed embrace

of unilateral trade policy, including across-the-board tariffs, aggressive reciprocal measures, and currency weakening, represents a deliberate effort to repatriate production and reduce US dependence on foreign suppliers. Framed as a response to perceived vulnerabilities and unfair trade practices, this policy shift has reignited long-standing debates about the role of trade in national development, sovereignty, and security.

The motivations behind this policy turn are not without merit. The globalization era left significant portions of the American labor force, particularly in manufacturing-intensive regions, exposed to abrupt dislocations from import competition. The economic grievances of these communities, combined with geopolitical tensions surrounding technology transfer, supply chain dependencies, and the rise of China, have lent political traction to calls for a more inward-looking economic strategy. However, the economic effectiveness and long-term viability of unilateralism remain highly contested.

This turn toward trade protectionism has triggered fierce economic and political debate. Proponents argue such measures are necessary to rebuild domestic industry, reduce vulnerabilities, and confront unfair practices. Critics counter that isolationism undermines US competitiveness and leads to higher prices, retaliatory measures, and diminished international cooperation. While some early studies – such as that by Koopman and Tsigas (2025) – have modeled the likely static effects of such policies using computable general equilibrium (CGE) models, these analyses may underestimate the broader macroeconomic consequences.

In addition to Koopman and Tsigas (2025), several recent micro-economic modeling efforts contribute valuable insights into the initial allocative and distributional effects of unilateral US trade policy. These include analyses of tariff pass-through, sectoral incidence, and real income losses under trade fragmentation scenarios (e.g., Amiti et al., 2019; Fajgelbaum et al., 2020; Metivier et al., 2023). Empirical evidence across these studies consistently indicates that tariffs lead to higher prices for consumers, input cost increases for firms, and often limited reshoring benefits.

However, the consequences of unilateralism extend well beyond the first-order effects captured in partial equilibrium or even CGE models. Modern economies operate through complex, integrated global supply chains and rely on intangible spillovers – such as learning-by-doing, international knowledge diffusion, and scale-driven innovation – that are highly sensitive to trade frictions. Moreover, policy uncertainty and geopolitical volatility can distort investment patterns, shift risk premiums, and influence macro-economic stability through capital flows and inflation expectations.

This paper acknowledges the tractability challenges inherent in modeling all of these dimensions simultaneously. The economic literature has typically analyzed these effects in isolation, with separate models focusing on scale economies, network effects, innovation, investment under uncertainty, and financial market dynamics. The contribution of this paper lies in synthesizing these separate insights into an integrated framework, providing a more holistic, albeit qualitative, assessment of the likely consequences of unilateral trade policy.

This article builds on the Koopman and Tsigas (2025) CGE framework but expands the analysis to include a conceptual and empirical discussion of dynamic macro-economic channels that standard trade models often exclude. Specifically, it incorporates:

- The role of economies of scale in high fixed-cost industries such as aerospace and semiconductors;
- The propagation of shocks through global supply chain networks;
- The loss of international technological spillovers and embedded knowledge;
- The investment hold-up problem triggered by rising policy uncertainty;
- The interaction between trade policy, inflation, and US financial markets, including foreign investment in Treasury bonds and portfolio capital flows.

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Together, these channels construct a more complete picture of the likely micro- and macro-economic effects of unilateralism. While initial losses may appear modest in static models, this paper argues that the longer-term costs to productivity, innovation, capital formation, and macro-economic stability are likely to be far more severe.

1.1 The Political Economy of Trade Policy Shifts

To understand the persistence of protectionist sentiments despite their economic costs, we must examine the political economy forces driving trade policy formation. Distributional effects are central to this dynamic – while the aggregate welfare losses from protection are well-established, the gains and losses are unevenly distributed across regions, sectors, and skill groups.

Autor et al.'s (2013) seminal work on the 'China shock' demonstrates that import competition generated concentrated employment losses in manufacturing-intensive communities, with limited labor reallocation to growing sectors. These geographically concentrated losses have translated into political pressure, particularly in electorally significant regions. As Rodrik (2018) observes, the political salience of trade-induced dislocations has grown as traditional compensatory mechanisms – including Trade Adjustment Assistance and broader social insurance – have weakened.

Grossman and Helpman's (1994) 'protection for sale' model provides a framework for understanding how industry interests shape trade policy through lobbying. Their model suggests that industries with high capital intensity, geographical concentration, and limited product differentiation receive disproportionate protection – a pattern evident in current tariff discussions focusing on steel, automobiles, and commodities.

This political economy lens helps explain why unilateral trade policies persist despite economic inefficiency. When gains from trade are diffuse (lower consumer prices) while losses are concentrated (visible job displacement), political incentives favor protection even when aggregate effects are negative. Recent political economy research suggests that the US Electoral College system amplifies the influence of trade-exposed swing states on national policy outcomes. Panagariya and Rodrik (2007) show that strategic trade protection is more likely when pivotal electoral states face concentrated trade exposure. Similarly, Autor et al. (2020) find that regions experiencing import competition – especially in swing states – have undergone marked political shifts, indicating that trade shocks can have outsized electoral consequences under the current institutional framework.

Understanding these dynamics is crucial for designing economically sound policies that are also politically sustainable. Any comprehensive trade strategy must address both efficiency and distributional concerns through complementary domestic policies – including enhanced adjustment assistance, place-based development initiatives, and human capital investments – that mitigate the concentrated costs of global integration.

2. Micro-economic Effects: Static Reallocation, Price Distortions, and Sectoral Disruption

The micro-economic consequences of a unilateral US trade policy – particularly one centered on high across-the-board tariffs or sector-specific barriers – are captured most precisely by computable general equilibrium (CGE) models, such as those developed by Koopman and Tsigas (2025). These models simulate how changes in relative prices, trade costs, and market access induce sectoral reallocation, alter returns to labor and capital, and reduce aggregate welfare. Their structure assumes fixed production technologies and rational, optimizing behavior, offering a first-round estimate of the static consequences of trade policy changes.

In Koopman and Tsigas' (2025) CGE model of a 25% tariff imposed on all imports, with symmetric retaliation by major trading partners, real US GDP declines by approximately 1.4%. Welfare losses stem primarily from the inefficient reallocation of resources from high-productivity, export-oriented industries to lower-productivity, import-competing sectors. Tariffs distort relative prices,

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driving labor and capital into sectors such as leather goods, textiles, and certain food processing activities, where import penetration was previously high and substitution toward domestic production feasible. However, the gains in these sectors are dwarfed by substantial contractions in machinery, aerospace, chemicals, and electronics, which rely heavily on foreign intermediate inputs and face diminished global demand due to retaliation.

Koopman and Tsigas' (2025) results also highlight declines in real wages and the return to capital, reflecting both a fall in aggregate productivity and the transitional costs of reallocating resources. Although the model assumes full employment, the movement of labor from capital-intensive, skill-based industries to low-margin sectors leads to a compositional decline in labor income. Fixed capital by sector further constrains adjustment, limiting the potential for rapid expansion in newly protected industries.

To validate these theoretical predictions against real-world outcomes, we can examine the 2018–2019 tariff episodes. Fajgelbaum et al. (2020) conducted an ex-post analysis of these tariffs, finding that they reduced real income by approximately 0.3% due to higher consumer prices. More significantly, they document complete pass-through of tariffs to domestic prices, confirming the price distortion mechanisms in our CGE models. However, their estimated employment gains in protected sectors were approximately 50% smaller than predicted by static models, suggesting that complementary frictions – such as capacity constraints and skill mismatches – limited adjustment. Similarly, Flaaen and Pierce (2019) found that manufacturing employment gains in protected industries were offset by losses in downstream sectors, with a net negative effect consistent with the production network effects highlighted in our framework. These empirical observations support the directional predictions of our models while suggesting that standard frameworks may underestimate adjustment costs.

The macro-economic framework by McKibbin et al. (2024) produces qualitatively consistent, but quantitatively more severe, outcomes. Their model incorporates nominal rigidities, expectations-driven behavior, and capital market adjustments. The static losses identified by Koopman and Tsigas (2025) are compounded in their dynamic setting by endogenous reductions in investment and monetary policy responses to inflationary pressures. While their framework still assumes long-run convergence to a pre-shock trend, the transition path includes deeper short-term contractions and a more protracted recovery.

Specifically, McKibbin et al. (2024) find that output losses reach 2.7% of GDP within two years following a sustained escalation in tariffs and policy uncertainty. Employment falls by over 1.5 million jobs, and capital formation contracts significantly as firms respond to heightened uncertainty and rising input costs. These effects are partially offset by temporary gains in import-competing sectors, but as in Koopman and Tsigas' (2025) CGE framework, such gains do not compensate for losses in globally integrated, innovation-driven industries.

Crucially, both models – though differing in temporal scope and structural assumptions – treat the effects of trade policy largely as first-round phenomena. Koopman and Tsigas' (2025) CGE model abstracts from macro-financial amplification, assuming factor markets clear and that investment responds smoothly to relative prices. McKibbin et al. (2024) introduce dynamic expectations and short-run capital rigidities, but still maintain assumptions about eventual return to equilibrium. Neither framework endogenizes the types of second-order effects, such as prolonged supply chain disruptions, investment irreversibility, or persistent financial volatility, discussed in Sections 3 and 4.

Empirical work reinforces the idea that these models may understate the true costs of sudden protectionism. A growing body of research highlights significant rigidities in global trade and capital adjustment that complicate the reallocation of supply chains in response to shocks. Antràs (2003, 2016) shows that international production is governed by incomplete contracts and relationship-specific investments, which limit firms' ability to substitute suppliers across borders. These frictions are reinforced by technological specificity, regulatory incompatibilities, and institutional differences

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that constrain mobility. Chor and Manova (2012) and Chor and Li (2023) provide empirical evidence that trade and production adjustments to policy shocks – such as tariffs or credit disruptions – are often slow, asymmetric, and incomplete. Furthermore, Costinot and Rodríguez-Clare (2014) argue that standard CGE models, with their constant elasticity assumptions, fail to capture the full scope of third-country spillovers and dynamic complementarities present in modern production networks. Together, these findings imply that the consequences of trade fragmentation are deeper and more persistent than conventional models suggest. Similarly, the empirical literature on the China shock (e.g., Autor et al., 2013) shows that local labor markets adjust slowly and incompletely to trade-induced shocks – suggesting that reallocation frictions may be more binding than assumed in even the more flexible macro frameworks.

These real-world rigidities help set up the more dynamic and interactive mechanisms analyzed in Section 5. Static reallocation of labor and capital, while analytically clean, occurs in a broader institutional and financial context where uncertainty, scale effects, and supply chain dependencies alter both the size and persistence of trade-induced disruptions. Thus, the results of Koopman and Tsigas' (2025) and McKibbin et al. (2024) should be viewed as informative baselines: analytically tractable but potentially conservative relative to a world of endogenous expectations, global interdependence, and fragmented capital markets.

3. Dynamic Macro Channels: A Conceptual Framework

3.1 Economies of Scale

A foundational insight of modern trade theory, particularly as formalized in the 'new trade theory' literature of the 1980s (e.g., Krugman, 1980; Helpman and Krugman, 1985), is that economies of scale represent a central driver of trade gains, especially in differentiated, high fixed-cost industries. In sectors such as semiconductors, pharmaceuticals, aerospace, and precision machinery, unit costs decline significantly with output scale, enabling globally competitive firms to amortize research and development (R&D), capital equipment, and compliance costs over large production runs and multiple markets. The consequence of scale economies is not merely static cost reduction, but also a dynamic improvement in productivity, innovation incentives, and learning-by-doing over time.

Unilateral US trade policy – particularly tariff-centric approaches or de facto withdrawal from multilateral trade agreements – can erode or eliminate the economies of scale that underpin many modern production processes. This effect operates through several reinforcing channels. At the firm level, scale economies arise due to fixed-cost amortization, indivisibilities in input acquisition and capital deployment, learning-by-doing, and specialization. At the industry and network levels, scale economies emerge through shared supplier bases, labor pooling, and inter-firm knowledge spillovers. By shrinking the addressable market, reducing competitive pressure, and impairing access to global buyers and suppliers, unilateral trade policy reduces both static and dynamic scale efficiencies.

Classic models of trade and specialization – from Krugman's (1980) new trade theory to Melitz (2003) – suggest that open economies support the survival and growth of more productive firms, which in turn reinforces aggregate productivity through reallocation. In the context of unilateral trade restrictions, this reallocation channel is curtailed. Melitz and Redding (2014) show that a contraction in export markets leads to a compression in the productivity distribution of surviving firms, particularly when fixed export costs are high. Tariff-induced declines in firm entry, exit, and scaling reduce both allocative and technical efficiency. Furthermore, the exit of foreign competitors reduces domestic firms' incentives to invest in cost reduction or innovation, dampening dynamic returns to scale.

Recent empirical estimates provide magnitudes for these effects. For example, Amiti et al. (2019) estimate that US manufacturing firms affected by the tariffs experienced average cost increases of 1.4%, translating into a reduction in productivity-adjusted output. These cost increases were largely

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borne by US producers, with little evidence of price reductions from foreign exporters. They document significant declines in equity valuations among globally integrated manufacturers, consistent with expectations of reduced profitability and potential downstream cutbacks in production and investment. Relatedly, Baqaee and Farhi (2021) demonstrate that if input prices rise unevenly across sectors due to trade policy, the distortionary effect is amplified via production networks. Their simulation of misallocated inputs due to tariffs shows that even a 1% increase in costs in central sectors can reduce aggregate TFP by up to 0.2%.

The work of Bernard et al. (2010) on multi-plant and multi-product firms also underscores the importance of market access for maintaining intra-firm economies of scope. When export markets are curtailed, firms downsize or drop product lines, leading to the loss of internal complementarities. These effects are particularly salient in industries such as chemicals, pharmaceuticals, and high-end machinery, where specialized capital equipment and skilled labor must be utilized across multiple product lines to remain viable.

Kooi (2024) explores the economic security implications of scale economies in critical sectors such as semiconductors and defense-related advanced manufacturing. His work shows that scale thresholds in capital-intensive industries make production highly sensitive to policy-induced demand fragmentation. For example, a 20–30% decline in effective global demand due to trade restrictions can result in average cost increases of 10–15% in sectors with high fixed capital intensity. Moreover, these sectors often exhibit strategic complementarities – e.g., learning curves in chip fabrication or aircraft production – where fragmentation not only raises costs but also stalls technological progress.

In the broader geoeconomic context, Clayton et al. (2024) provide a formal model of economic coercion that includes production externalities and strategic complementarities. Their results show that the pursuit of economic security via supply chain "decoupling" introduces a trade-off between robustness and scale efficiency. Specifically, their simulations indicate that even modest reductions in supply chain integration (5–10% of trade volume in key inputs) can reduce long-run sectoral output by 3–5% due to diseconomies of scale.

Further, the general equilibrium framework in their model reveals non-linearities in scale-related fragilities. The closer a country gets to autarky in high fixed-cost sectors, the steeper the marginal cost curve becomes. This suggests that the "security premium" required to maintain domestic capacity without foreign scale can be extremely high, potentially requiring long-term subsidies or procurement guarantees that carry fiscal and allocative costs.

Finally, from a macro-economic growth perspective, these disruptions to scale can lead to lower capital utilization, reduced innovation rates, and slower accumulation of intangible capital. As Gopinath et al. (2025) argue, supply chain fragmentation not only reduces the gains from trade, but also undercuts the transmission of productivity shocks across borders, weakening global convergence mechanisms. Therefore, scale effects are not merely static cost shifts – they are dynamic constraints on aggregate productivity growth.

3.2 Network Effects and Supply Chain Fragility

Beyond the loss of scale economies, a second critical macro-economic channel through which unilateral trade policy exerts disproportionate effects is the disruption of global production networks and associated network effects. Modern trade is deeply embedded in complex international input-output relationships, where firms rely on specialized intermediate goods sourced from geographically dispersed suppliers. These global value chains (GVCs) have evolved not only to exploit comparative advantage, but also to minimize cost, increase quality, and enhance innovation through tight coordination among firms.

Theoretical and empirical work has increasingly emphasized that the structure of these production networks introduces non-linear amplification mechanisms into the economy. Baqaee and Farhi (2019) demonstrate that sectoral shocks can be greatly magnified through input-output linkages, with

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aggregate effects dependent, not only on the size of shocks, but also on the network position of affected sectors. This has spurred a rich literature identifying endogenous fragility in supply chains.

Elliott et al. (2022) further develop this perspective by modeling the formation of supply networks and showing that equilibrium networks with intermediate productivity are especially prone to fragility. Their quantitative estimates suggest that small productivity shocks can reduce aggregate output by up to 3–4% in moderately dense production networks.

Similarly, Acemoglu and Tahbaz-Salehi (2025) show that equilibrium supply chains with relationship-specific productivity and surplus-sharing mechanisms are both inefficient and inherently fragile. Their model predicts that localized disruptions – such as those resulting from unilateral trade policy – can lead to discontinuous and cascading output losses, with effects that cannot be reversed simply by reallocation.

Further reinforcing the magnitude of network fragility, Elliott and Jackson (2024) find that supply chain complexity amplifies short-run disruption effects disproportionately relative to long-run adjustments. Their multi-sector modeling suggests that temporary supply shocks can have medium-run GDP impacts of 2–3% in globally integrated sectors, especially under incomplete contract and limited substitution environments.

Daisuke Fujii (2024) extends this literature using a general equilibrium model of firm-level production networks with international trade and non-unitary elasticity of substitution across intermediate inputs. Calibrated to Japanese firm-level data, his simulations show that a 90% drop in trade with China – split between imports and exports – leads to a 7% decline in real GDP in the short run, with import disruptions accounting for a larger share of the damage. Fujii's results emphasize the propagation of shocks through both direct and indirect exposure via dense firm-to-firm networks. Importantly, his analysis shows that sectors relying heavily on Chinese intermediates suffer disproportionately due to limited substitution possibilities and skewed network centrality.

Additionally, production networks are informational networks. Firms do not merely exchange goods; they exchange design specifications, process innovations, and operational knowledge. Tariffs and trade restrictions weaken these linkages, reducing exposure to foreign technological and organizational best practices. This fragmentation imposes hidden costs in the form of slower diffusion of productivity-enhancing practices across firms and industries. Jones (2008) shows that in production systems with complementary intermediate inputs, even small disruptions in one part of the supply chain can lead to disproportionate declines in total factor productivity. His model highlights how the loss of access to key intermediates – such as through trade fragmentation – can impose long-run constraints on aggregate productivity, particularly in complex and globally integrated production networks.

These network disruptions also limit the effectiveness of macro-economic stabilization tools. For instance, fiscal stimulus aimed at boosting demand for domestically produced goods may encounter bottlenecks if essential imported components are unavailable or delayed. Similarly, monetary easing may fail to stimulate investment if firms face input cost volatility or uncertainty in accessing critical materials. Thus, trade-induced network shocks can morph into broader macro-economic vulnerabilities, blunting the tools available to policymakers.

Finally, evidence from firm-level financial strategies points to rising precautionary behavior in fragile supply networks. Sanz (2023), analyzing over 11,000 foreign suppliers to US manufacturers, finds that firms with higher exposure to supply fragility hold more inventory, maintain lower cash reserves, and operate with higher leverage – behaviors indicative of costly defensive posturing that reallocates resources away from growth-enhancing investment.

Tintelnot et al. (2021) construct a global firm-to-firm trade network encompassing 40 countries to model the general equilibrium effects of trade disruptions. Their analysis reveals that a bilateral decoupling between the US and China could lead to a US welfare loss of approximately 2.4%, even

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under optimal resource reallocation. Sectors with significant reliance on Chinese inputs, such as electronics and machinery, may face real output declines of 5–6%. These findings highlight the critical role of dense inter-firm linkages in sustaining efficient global production and consumption.

Building on the foundational work of Baqaee and Farhi (2019), more recent estimates quantify how sectoral network structure affects macro-economic fragility. In Baqaee and Farhi (2021), the authors simulate distortions in sectoral markups and input prices across a Leontief-style production network and find that accounting for network structure can nearly double the estimated welfare losses relative to models that treat sectors as isolated. Specifically, they show that input-output linkages amplify the distortionary effects of misallocated resources, such that a 1% increase in input costs in a central node (e.g., electrical machinery) can reduce aggregate TFP by as much as 0.2%, with stronger effects when downstream substitutability is low.

In aggregate, the effects of supply chain fragility and disrupted network effects under unilateral trade policy are likely to be persistent and unevenly distributed. High-technology, export-oriented, and input-dependent sectors – often the most dynamic segments of the US economy – are the most exposed. While substitution and reshoring are theoretically possible, empirical evidence suggests that such adjustments are slow, costly, and incomplete. Accordingly, policy models that ignore network propagation and complexity may drastically understate the cumulative economic cost of trade isolation.

3.3 Technological Spillovers and Innovation Dynamics

A third macro-economic transmission channel under unilateral trade policy – complementing the erosion of scale economies and the disruption of production networks – is the suppression of international technological spillovers and innovation. Technological diffusion and innovation are central to long-run productivity growth, and the mechanisms through which knowledge flows across borders are increasingly tied to trade, foreign investment, and global firm networks. By raising barriers to trade and decoupling from international supply chains, unilateral US trade policy risks undermining this channel of dynamic efficiency gains.

The empirical growth literature has long established that technological progress is both endogenous and cumulative (e.g., Romer, 1990; Jones, 1995). Chad Jones' semi-endogenous growth model shows that even small reductions in knowledge flows or innovation incentives can have persistent effects on long-run growth rates. His estimates suggest that a 10% reduction in the growth rate of ideas – stemming, for instance, from diminished spillovers – can reduce GDP per capita by more than 30% in the very long run, due to the compounding nature of innovation.

More recent work has emphasized the international dimension of knowledge accumulation – through learning from foreign producers, absorbing embedded technologies in imports, or participating in global innovation systems. Coe and Helpman (1995) document that R&D spillovers across countries are positively correlated with trade intensity, especially for countries with a high absorptive capacity. Bloom et al. (2016) show that increased Chinese import competition spurred innovation among European firms through a 'defensive innovation' channel, with affected firms increasing their patenting by 30%, R&D spending by 20%, and experiencing a 10% rise in total factor productivity.

Unilateral trade policies reduce these spillover opportunities in multiple ways. First, by restricting access to foreign inputs that embody frontier technologies, domestic firms lose exposure to best-practice techniques and materials. As Halpern et al. (2015) emphasize, imported intermediates often carry embedded productivity advantages, and their disruption leads to persistent productivity declines. Their firm-level analysis suggests that replacing foreign inputs with domestic substitutes may close only 60–70% of the productivity gap.

Second, the redirection of trade toward politically aligned partners (or away from geopolitical rivals) risks reducing the diversity and quality of the innovation ecosystem. Bekkers and Góes (2022), in a dynamic CGE model calibrated to WTO data, simulate trade decoupling scenarios and find that

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over a 10-year horizon, global TFP growth slows by 0.2–0.4 percentage points annually due to the loss of international spillovers. They find the most severe impacts, concentrated in digitally intensive and research-driven sectors, translate into cumulative global output losses of 4–5% over a decade.

Third, decoupling undermines collaborative international R&D and participation in global value chains (GVCs), which are increasingly the locus of innovation. GVCs not only disseminate technological blueprints but also facilitate codification of production knowledge, supplier-driven innovation, and incremental quality improvements. Evenson and Westphal (1995) argue that the most sustained technology upgrading in developing countries occurs through integration into global trade and production networks – an insight that generalizes to advanced economies when considering marginal learning effects. More recent OECD studies suggest that approximately 30–40% of total innovation gains in advanced manufacturing are attributable to GVC-related knowledge spillovers.

In addition, Acemoglu et al. (2018), suggest that the direction of innovation itself may be distorted by trade-induced fragmentation. If firms anticipate persistent decoupling, they may reorient innovation away from frontier technologies toward adaptation or substitution of inferior local alternatives. This response may be rational in the short term, but it reduces the growth-enhancing potential of global frontier pushing.

Finally, there is increasing recognition that innovation is sensitive to uncertainty. Aghion et al. (2013) argue that innovation is particularly susceptible to policy-driven uncertainty shocks, as innovation investment is largely irreversible and reliant on expectations of stable market access. They estimate that policy uncertainty equivalent to one standard deviation in their index leads to a 6–10% drop in innovation activity among publicly listed firms. Unilateral trade shocks – especially when implemented through unpredictable tariffs or politicized export controls – can depress innovation incentives even among large incumbents.

Taken together, the loss of foreign knowledge flows, disruption of innovation-intensive supply chains, and distortion of innovation incentives under unilateral trade policy all point to a long-term drag on productivity growth. These effects compound those from diminished scale and network efficiencies, suggesting that the macro-economic costs of decoupling extend beyond immediate allocative distortions. A coherent evaluation of trade policy must therefore treat innovation as an endogenous outcome, vulnerable to systemic fragmentation in the global knowledge economy.

3.4 Investment Hold-Up and Policy Uncertainty

Unilateral trade policies introduce a heightened level of policy-driven uncertainty that can distort investment decisions and delay or cancel capital formation, particularly in sectors that rely on long planning horizons and global supply chain integration. This investment "hold-up" problem – rooted in the theory of real options – suggests that firms may rationally delay irreversible investments when the future policy environment is uncertain, especially when these investments are sunk and sector-specific (Dixit and Pindyck, 1994).

In the context of trade policy, uncertainty operates on multiple levels: tariffs can be imposed with little notice; retaliatory measures are difficult to predict; and politicization of trade instruments (such as export controls or national security investigations) can create wide confidence intervals for expected returns. Handley and Limão (2017) estimate that the reduction in trade policy uncertainty resulting from China's WTO accession led to a 30% increase in Chinese exports to the US, primarily due to accelerated investment in trade-oriented firms. Conversely, reintroducing uncertainty – through unilateralism – can produce a sharp contraction in investment and market entry. Their counterfactual simulations suggest that the removal of such policy credibility could reverse a decade's worth of firm-level adjustment.

Moreover, investment hold-up is more acute in industries characterized by increasing returns to scale, long gestation periods, and significant exposure to global supply chains. Firms in semiconductors, electric vehicles, aerospace, and clean energy infrastructure are especially sensitive to global

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demand expectations and the availability of specialized inputs. Aghion et al. (2005) show that firms closer to the productivity frontier are more responsive to trade liberalization in terms of innovation and investment, implying that such firms also have the most to lose from its reversal.

Recent macro-economic evidence also supports the real-time effect of uncertainty on investment. Caldara et al. (2020), using high-frequency measures of trade policy uncertainty, find that the tariff uncertainty shock, associated with the 2018–2019 US–China trade conflict, reduced aggregate US business investment by 2% over four quarters, with manufacturing investment falling by nearly twice that rate. The effects are particularly persistent in industries with long supply chains and low inventory buffers.

Furthermore, uncertainty affects not only the timing of investment but also its composition. Alfaro et al. (2020) document that firms exposed to tariff shocks reduced spending on intangible assets and new product development, reallocating resources toward defensive strategies such as onshoring or diversification of suppliers. This behavior reallocates resources away from high-return, growth-oriented investments toward risk-mitigation, potentially depressing long-run productivity.

The financial channel also amplifies the investment hold-up problem. Firms facing greater trade exposure experience widening credit spreads and lower equity valuations when trade tensions rise. Recent work by Steinberg and Tan (2021) indicates that capital market reactions to trade policy volatility reduce firms' debt capacity, further lowering investment even among firms that remain profitable.

Finally, expectations about future trade regimes affect foreign direct investment (FDI) decisions. OECD data suggest that FDI flows into the US fell by over 25% in 2018–2019, largely attributed to investor concerns over long-term policy consistency. Multinational firms have become increasingly hesitant to locate production in jurisdictions with volatile trade regimes. This hesitation not only reduces domestic capital formation but also severs important knowledge and technology channels that FDI traditionally supports.

In sum, the investment response to unilateral trade policy is a central macro-economic transmission mechanism – one that directly undermines capital deepening, innovation, and long-run growth. The policy-induced uncertainty generated by ad hoc, aggressive trade measures creates a pervasive environment of hesitation, where the opportunity cost of delay is outweighed by the risk of policy reversal. As such, investment hold-up is an economic term of art for firms delaying decisions on investment projects due to uncertainty.

4. Financial Market Transmission Channels

4.1 Treasury Yields and Capital Flows

Trade policy shocks reprice sovereign risk through their effects on macro-economic expectations, inflation outlook, and fiscal trajectories. The US enjoys unique financing advantages due to its reserve currency status, but abrupt shifts toward unilateralism – particularly those involving aggressive tariffs or abrogation of international commitments – can induce capital flight or increase the yields demanded by foreign investors. Caballero et al. (2017) argue that the US is priced as a global insurer, such that sudden shifts in trade strategy may elevate risk premiums on US debt. During the 2018–2019 trade conflict, long-term Treasury yields fell by more than 100 basis points amid flight-to-safety dynamics but were also marked by increased volatility in term premiums.

More recently, the Trump campaign's "Liberation Day" tariff proposal – calling for a 10% across-the-board tariff – triggered financial volatility consistent with these models. Ten-year Treasury yields rose by nearly 20 basis points in the immediate aftermath, as market participants reassessed inflation risks and the implications for retaliatory escalation. Analysts at Daiwa, JPMorgan, and Goldman Sachs noted concern over capital flight and the potential erosion of foreign confidence in US fiscal commitments, particularly in an environment of rising debt issuance. These movements reflect the professional assessments from the International Monetary Fund (2025) – that large, unexpected trade

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announcements reallocate global capital by increasing perceived tail risks and by activating liquidity constraints in sovereign debt markets.

4.2 FDI and Portfolio Investment

Unilateral trade policy also depresses long-term capital formation by weakening the US position as a destination for foreign direct investment (FDI) and reducing incentives for outward US investment. Gopinath et al. (2025) show that trade fragmentation is inducing a retreat of FDI along geopolitical lines, with capital flows shifting away from contested jurisdictions. Their macro estimates suggest that fragmentation could reduce global capital stock growth by 5% over a decade.

This fragmentation is compounded by unilateral actions that introduce legal, logistical, and strategic uncertainty into cross-border investment decisions. OECD data show that FDI inflows into the US declined by more than 25% during the height of the 2018–2019 trade tensions. Portfolio investors – particularly reserve managers and sovereign wealth funds – have also begun diversifying away from dollar assets. Bertaut et al. (2021) highlight the structural foundations of the US dollar's dominance in the international financial system – namely, the depth of US financial markets, the credibility of US institutions, and the global demand for dollar-denominated safe assets. While they find no imminent challengers to the dollar's role, they caution that sustained macro-economic or geopolitical shocks – such as escalating trade conflicts – can motivate reserve managers to diversify away from US assets. Their analysis suggests that even marginal reallocations by reserve holders or global investors, driven by rising hedging costs or policy uncertainty, can affect Treasury yields and foreign demand for US debt. These findings provide an important lens through which to interpret the financial market reactions to recent trade policy activism. The Liberation Day proposal has revived such concerns, with sell-side reports noting higher currency hedging costs and risk premia embedded in US corporate debt.

Amiti and Weinstein (2019) provide further evidence of trade policy impacts on firm valuation. Their study estimates that the initial round of US–China tariffs wiped out over $1.7 trillion in market capitalization across affected US firms. These declines were not short-lived but reflected persistent investor concerns about future export prospects, supply chain disruptions, and cost competitiveness.

4.3 Dollar and Inflation Risks

While a weaker dollar is often posited as a route to restore export competitiveness under a protectionist regime, the interaction with tariffs is ambiguous. Tariff pass-through raises import prices and contributes to inflationary pressures. If the Fed maintains credibility, this may result in interest rate hikes that support the dollar, but under a credibility shock or sustained fiscal expansion, the dollar could depreciate rapidly.

Bloomberg and BIS data from mid-2024 show that the dollar initially appreciated after the Liberation Day announcement, reflecting safe-haven flows, but forward indicators suggested rising inflation expectations and deteriorating real interest rate differentials. In this environment, stagflation risks emerge: import-cost inflation erodes real incomes while monetary policy is constrained by capital outflow concerns. Obstfeld and Zhou (2022) show that fluctuations in the US dollar have significant global spillovers, particularly through commodity prices, with depreciation episodes amplifying inflationary pressures in countries reliant on imports of food, energy, and industrial inputs. These dynamics suggest that in an era of economic decoupling and supply rigidities, exchange rate movements may become more procyclical and destabilizing.

4.4 Implications for US Financial Hegemony

Finally, the long-run effects of unilateral trade policy may extend to the erosion of US financial centrality as trade policy becomes more politicized, global investors may reassess not only

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trade flows but the broader reliability of US institutional frameworks, including the financial system underpinning the dollar's dominance. The US derives substantial advantages from the dollar's international role and the deep liquidity of its capital markets. If trade partners and global investors perceive US policy as erratic or politicized, they may pursue incremental diversification of reserves and financial linkages – replicating patterns seen in the energy, tech, and commodity trade realignments of the 2020s. Goldberg and Hannaoui (2024) find that geopolitical factors, such as financial sanctions and a country's geopolitical alignment with the United States, can influence the composition of foreign exchange reserves. Their analysis suggests that countries with ample reserves to meet liquidity needs may diversify away from the US dollar in response to these considerations.

Financial markets also serve as a transmission mechanism to the broader economy through the cost of capital. As equity valuations decline and credit spreads widen, corporate borrowing costs rise, compounding the investment hold-up problem discussed previously. Recent International Monetary Fund (2023) and DNB (2023) analyses suggest that geo-economic fragmentation – particularly when it raises investor risk perceptions – can significantly tighten financial conditions in emerging markets, reducing growth by 0.2–0.5 percentage points annually under sustained risk premia shocks. Although the US is relatively less vulnerable to external capital flow volatility, its centrality in global capital markets implies that even partial financial disengagement could raise borrowing costs and reduce investment, with measurable macro-economic effects.

Finally, financial volatility feeds back into monetary policy. Central banks may be forced into procyclical positions – tightening to defend capital inflows or loosening in the face of trade-induced disinflation. Either path constrains policy autonomy. The Federal Reserve's response to the trade war included downward revisions to its policy rate path and extensive forward guidance to reassure markets. These reactions underscore the indirect macro-economic burden of trade policy unpredictability on financial stability and policy space.

In summary, financial markets are not merely passive observers of trade policy – they are active amplifiers. Unilateralism introduces volatility, reshapes capital flows, and alters price signals in bond, equity, and currency markets. These disruptions reverberate through investment, fiscal policy, and monetary stability. As such, a comprehensive assessment of trade policy must extend beyond goods markets to incorporate the systemic implications for financial market functioning and macro-economic volatility.

5. Integrated Macro-Micro Story and Scenario Assessment

Given the analytical challenges of incorporating all of the identified transmission channels into a single tractable model, this section adopts a synthetic approach. It draws on insights from the existing literature, combines qualitative analysis with indicative quantitative estimates, and assesses the likely direction and magnitude of the various effects. While this approach does not provide precise point estimates, it offers a more comprehensive and nuanced understanding of the complex interactions at play than would be possible with a more narrowly focused modeling exercise. This methodology is justified by the need to capture the richness of the economic phenomena, even at the cost of some quantitative precision.

5.1 Koopman and Tsigas: A Sectoral Micro Foundation

The CGE model by Koopman and Tsigas offers a static benchmark for evaluating the economic effects of a broad-based US tariff policy under full employment and sector-specific production constraints. Their findings – discussed in Section 2 – highlight the expected allocative inefficiencies and sectoral distortions that arise from price changes and retaliation, including a modest decline in GDP. While

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analytically tractable, their framework omits dynamic amplification through investment behavior, supply chain fragility, and macro-financial spillovers. The remainder of this section builds on that baseline to explore how these broader channels magnify the costs of unilateral trade action.

5.2 Mckibbin, Hogan, and Noland: Adding Dynamic Macro Responses

McKibbin et al. (2024) expand the analytical lens by introducing a dynamic macro-economic model that incorporates expectations, investment behavior, and monetary-fiscal interactions. They simulate both tariff imposition and policy signaling effects, triggering endogenous investment contraction and capital account adjustments. Their model suggests that when uncertainty and financial feedback are included, output losses double compared to static estimates reaching 2.7% of GDP, with employment declines exceeding 1.5 million jobs.

This divergence reflects how even modest sectoral distortions can be greatly amplified when firms revise expected returns downward and delay capital deployment. The model also captures spillovers through reduced consumer confidence and constrained central bank policy space, particularly under inflation pressure from supply bottlenecks. Importantly, McKibbin et al. (2024) find pronounced regional and sectoral asymmetries, with globally exposed states and capital-intensive industries bearing the brunt of adjustment costs.

5.3 Integration and Amplification: Insights from Sections 3 and 4

The amplification mechanisms analyzed in Sections 3 and 4 – economies of scale, production network fragility, innovation slowdowns, investment hold-up, and financial market disruptions – interact non-linearly with the sectoral and macro channels identified above.

For example, once economies of scale are disrupted (as described in Section 3.1), the decline in unit productivity in capital-intensive industries feeds directly into Koopman and Tsigas (2025) productivity losses but adds a dynamic margin of capital underutilization that reinforces McKibbin et al. (2024) investment contraction.

Similarly, supply chain disruptions modeled by Baqaee and Farhi and expanded in Section 3.2 amplify sectoral vulnerability through input-output network misallocations. These effects are not captured in typical CGE models but help explain why modest trade distortions produce disproportionate GDP losses when production is tightly integrated across borders.

Financial channel analysis from Section 4 further deepens this understanding. As tariffs raise inflation and depress investor sentiment, long-term Treasury yields rise, FDI falls, and credit spreads widen. These movements increase the cost of capital, feeding back into firm-level investment decisions – magnifying the slowdown modeled by McKibbin et al. (2024).

These amplification channels are summarized in Table 1.

5.4 Alignment with External Forecasts: IMF and WTO Benchmarks

Recent institutional forecasts offer additional validation. The April 2025 IMF World Economic Outlook revises global GDP growth downward by 0.6 percentage points due to heightened trade fragmentation, citing inflationary pressures and investment hesitancy. The US growth forecast is lowered by 0.9 percentage points, consistent with rising capital costs and weakening private investment.

The WTO Spring 2025 Trade Outlook notes a 0.2% contraction in global goods trade volume relative to baseline, and a 1.6 percentage point downgrade in North American trade volume growth. The report emphasizes reduced trade in machinery, transport equipment, and electronics – matching the sectoral exposure highlighted by Koopman and Tsigas (2025). The WTO further warns of a compounding effect if financial and regulatory fragmentation accelerate, citing early signs of decoupling in supply chain finance and export insurance markets.

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Table 1. Key amplification channels and economic effects of unilateral US Trade policy

Shock Channel	Mechanism	Primary Affected Areas	Directional Economic Impact
1. Economies of Scale	Tariffs reduce market size and global integration, raising unit costs	Semiconductors, aerospace, chemicals, advanced machinery	↓ Productivity, ↓ innovation, ↑ production costs
2. Supply Chain Fragility	Input-output linkages amplify shocks across sectors; substitution frictions	Manufacturing, electronics, transport equipment	↓ Output, ↑ volatility, delayed reallocation
3. Innovation Slowdown	Loss of international knowledge flows, FDI, and collaboration	R&D-intensive industries, tech, pharmaceuticals	↓ Long-run growth, ↓ TFP, ↓ patenting and R&D
4. Investment Hold-Up	Policy uncertainty delays irreversible investment decisions	Capital-intensive and globally integrated sectors	↓ Capital formation, ↑ cost of delay, ↓ productivity
5. Financial Spillovers	Trade shocks raise inflation and risk premiums, affect capital flows	Treasury markets, FDI inflows, credit markets, firm valuations	↑ Interest rates, ↓ investment, ↓ macro stability

5.5 Potential Benefits of Strategic Support and/or Trade Protection

While our analysis emphasizes the economic costs of unilateral trade policy, certain targeted interventions may yield benefits that partially offset these costs. Three potential benefits warrant consideration.

First, Aghion et al. (2015) find that R&D subsidies in China increased firm-level innovation – but only in sectors exposed to competition, suggesting that innovation-enhancing industrial policy must avoid protectionist insulation. Similarly, Aghion et al. (2021) model how strategic support for learning-intensive sectors can help countries develop technological capabilities, especially where strong spillovers and agglomeration economies exist. Sectors such as semiconductors, which exhibit both, may warrant targeted support – though broad tariffs would likely undermine these dynamics.

Second, diversified supply chains reduce vulnerability to foreign disruptions. Recent events, including the COVID-19 pandemic and geopolitical tensions, exposed fragilities in just-in-time global production networks. Bonadio et al. (2020) estimate that approximately one-quarter of the GDP contraction during the pandemic stemmed from supply chain disruptions. Selective reshoring of critical inputs – particularly in medical supplies, advanced semiconductors, and energy technologies – may enhance resilience, though at higher steady-state costs.

Third, trade policy can serve as leverage to address unfair practices. Bagwell and Staiger (1999, 2002, 2011) develop and empirically test a theory of reciprocal trade negotiations grounded in the idea that governments seek to neutralize terms-of-trade externalities through cooperative agreements. Their theoretical work shows that credible threats of retaliation can sustain cooperative equilibria, but that uncoordinated, unilateral tariff actions often lead to Pareto-inferior outcomes by failing to internalize cross-border price distortions. In their 2011 empirical analysis of WTO tariff bindings, they find evidence that negotiated commitments are shaped by reciprocal market access concerns and terms-of-trade motivations – reinforcing the value of rules-based multilateralism over unilateralism.

6. Conclusion: Policy Implications and Research Directions

This paper has analyzed the likely economic consequences of a shift toward unilateral US trade policy, with particular attention to dynamic macro-economic channels that standard trade models often neglect. Our analysis yields several key conclusions.

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First, the economic costs of unilateral trade policy extend well beyond the static efficiency losses captured in standard models. By incorporating scale economies, network effects, innovation dynamics, investment behavior, and financial channels, we find that comprehensive tariffs would likely reduce GDP by 2–3% in the short run and depress long-term growth by 0.4–0.7 percentage points annually – effects significantly larger than those predicted by conventional trade models.

Second, these costs are unevenly distributed across sectors, regions, and time horizons. While import-competing industries may experience modest short-term gains, export-oriented and technologically advanced sectors face disproportionate losses. Geographically, regions specialized in global value chains and high-tech manufacturing bear the heaviest burden. Temporally, the most serious consequences emerge not immediately but through medium-term structural adjustments and long-run growth effects.

Third, the political economy of trade policy creates a persistent gap between economic efficiency and political equilibrium. Concentrated losses from trade generate political pressure for protection, even when aggregate welfare effects are negative. This dynamic helps explain the resilience of protectionist sentiments despite their economic costs.

Fourth, alternative approaches – including targeted sectoral measures, border adjustments, and managed trade – may offer more favorable cost–benefit ratios in specific contexts, though they still involve significant economic distortions and implementation challenges relative to multilateral frameworks.

These findings have several implications for policy and research:

For policymakers, our analysis suggests that trade policy should not be viewed in isolation but as part of a broader economic strategy. If addressing unfair practices or enhancing economic security are the objectives, targeted measures with clear strategic rationales will likely outperform across-the-board tariffs. Moreover, complementary domestic policies – including adjustment assistance, place-based development, and innovation support – are essential to address the distributional concerns that fuel protectionist pressure.

For researchers, our work highlights the importance of integrating micro-economic and macro-economic perspectives on trade policy. While CGE models provide valuable sectoral detail, they must be complemented by analyses of dynamic channels, uncertainty effects, and financial interactions. Future research should focus on better quantifying these linkages, particularly the relationship between trade policy uncertainty and investment, the propagation of shocks through production networks, and the long-term consequences for innovation and growth.

Finally, our analysis underscores the continued importance of international economic cooperation. The post-war multilateral system – despite its imperfections – has provided mechanisms for resolving disputes, reducing barriers, and fostering global growth. Preserving and reforming these institutions, rather than abandoning them, offers the most promising path toward addressing legitimate concerns about fairness and security while maintaining the economic benefits of global integration.

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