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Rethinking the trade–Growth Nexus: Theoretical Foundations, Empirical Evidence,And Contemporary Challenges in a Fragmentiong Global Economy

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Abstract

Purpose – The relationship between international trade and economic growth has been a central preoccupation of development economics since the classical era.

Design/Methodology/Approach – While the theoretical case for trade as an engine of growth has evolved considerably—from Ricardo's comparative advantage to endogenous growth models and new trade theory—the empirical evidence remains context-dependent and contested. This paper critically examines the trade–growth nexus by synthesising theoretical developments, reviewing empirical methodologies and findings, and analysing contemporary challenges that have fundamentally reshaped the global trade landscape.

Findings – Drawing on recent WTO and UNCTAD data, the analysis shows that while world merchandise trade reached record levels in 2025, the outlook for 2026 has darkened considerably amid escalating trade policy uncertainty, tariff wars, and geopolitical fragmentation.

Research Implications – The paper argues that the traditional linear narrative of trade-led growth is increasingly inadequate in a world characterised by digital transformation, climate imperatives, and systemic governance failures. It concludes by proposing a more nuanced framework that recognises both the enduring benefits of trade integration and the need for complementary domestic policies, resilient regional architectures, and multilateral reform to harness trade for inclusive and sustainable growth.

Keywords: International trade, economic growth, trade liberalisation, WTO reform, digital trade, trade policy uncertainty

JEL Classifications: F10, F43, F60

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I. Introduction

Since the end of the Second World War, international trade has grown faster than world production in most years, yet the precise relationship between trade and economic growth remains one of the most debated questions in development economics. As one comprehensive review notes, "The role of international trade in driving economic growth is an ancient yet vibrant research topic. To date, theoretical and empirical studies have yet to reach a consensus conclusion." This enduring contestation reflects not merely methodological disagreements but the fundamental complexity of the causal mechanisms linking trade openness to income growth, structural transformation, and welfare improvements.

The stakes of this debate have never been higher. After decades of deepening global economic integration, the multilateral trading system is facing what many observers describe as its most serious crisis since the establishment of the General Agreement on Tariffs and Trade (GATT) in 1947. Rising protectionism, unilateral tariff actions by major economies, a paralysed WTO dispute settlement mechanism, and accelerating geopolitical fragmentation are challenging the very premise that open markets and rules-based trade generate mutual gains. Meanwhile, new forces—artificial intelligence, digital services trade, climate policy, and supply chain reconfiguration—are reshaping the structure of global commerce in ways that existing theoretical frameworks struggle to capture.

This paper aims to provide a critical synthesis of the trade–growth literature while situating theoretical insights within contemporary empirical realities. The analysis proceeds as follows. Section 2 reviews the evolution of trade theory from classical doctrines to contemporary frameworks, highlighting how each theoretical advance has deepened understanding of the channels through which trade affects growth. Section 3 examines key empirical evidence, including cross-country studies, natural experiments, and recent advances in structural gravity modelling. Section 4 analyses the major contemporary challenges facing global trade, including protectionist resurgence, digital transformation, the trade–climate interface, and WTO governance deficits. Section 5 discusses policy implications for developing economies, and Section 6 concludes with a research agenda for the next generation of trade–growth scholarship.

II. Theoreical Foundations:From comparative advantage to endogenous growth

The intellectual genealogy of trade theory reveals a progressive enrichment of the mechanisms linking international exchange to economic growth. Classical foundations rest on the principle of comparative advantage, articulated by David Ricardo in the early nineteenth century. As a recent theoretical synthesis explains, “Grounded in foundational economic theories such as comparative advantage and absolute advantage, the study explores how nations strategically leverage international trade to bolster their economic prosperity”. In the classical formulation, trade generates growth by enabling specialisation according to comparative costs, thereby raising productivity and expanding consumption possibilities.

However, classical theory treats growth as an exogenous outcome of resource reallocation rather than as a dynamic process endogenous to trade itself. The Heckscher–Ohlin model refined this account by emphasising factor endowments as determinants of comparative advantage, yet it similarly assumed constant returns to scale and perfect competition. These limitations paved the way for new trade theory, pioneered by Paul Krugman and others in the late 1970s and 1980s, which incorporated increasing returns to scale, product differentiation, and imperfect competition into trade analysis. As one literature review notes, "Significant focus is laid on the new trade theory and the use of strategic trade policies by advanced countries". New trade theory demonstrated that trade could generate growth through scale economies, variety expansion, and pro-competitive effects even in the absence of comparative advantage.

The most consequential theoretical advance for understanding trade-led growth came from endogenous growth theory, associated with the work of Romer (1986, 1990) and Lucas (1988). Endogenous growth models identify several channels through which trade affects long-run growth: knowledge spillovers, technology diffusion, human capital accumulation, and research and development incentives. As one survey explains, "Endogenous growth theories identify a number of channels that affects growth, such as productivity, human capital, and openness". In open-economy endogenous growth models, trade integration accelerates growth by increasing the size of the market for innovative activities, facilitating cross-border knowledge flows, and intensifying competition that drives productivity improvements.

A more recent strand of literature emphasises the role of trade in structural transformation—the reallocation of economic activity across agriculture, manufacturing, and services as countries develop. International trade has been central to some of the most salient and recent experiences of structural transformation, particularly in East Asia. As documented in a comprehensive review, "Consider the cases of Japan, Korea, China, and Vietnam. In each of these cases, the evolution of a country's share of world exports over time closely tracks its manufacturing share of GDP". Japan's share in world exports rose sharply after WWII, peaking in the 1980s in tandem with the peak of its manufacturing share. South Korea followed a similar pattern beginning in the 1960s and 1970s, while China's export share surged in the 1990s and 2000s and Vietnam's take-off began in the 2010s.

Theoretical work by Matsuyama (2009) formalised the mechanism through which asymmetric productivity growth across sectors and countries induces changes in comparative advantage, thereby shaping patterns of sectoral specialisation. A country that experiences faster productivity growth in manufacturing gains comparative advantage in that sector, resulting in greater manufacturing net exports and a larger manufacturing employment share. This insight helps explain why export-oriented industrialisation has been such a powerful engine of growth for successful developing economies, and why premature deindustrialisation—a phenomenon increasingly observed in countries that opened to trade without adequate productive capacity—poses serious developmental risks.

III. Empirical Evidence: Methodological advances and contested findings

The empirical literature on trade and growth has evolved in tandem with theoretical developments, progressing from simple cross-country correlations to sophisticated structural estimation strategies. Early cross-country regressions typically found a positive association between trade openness and income per capita, but these findings were vulnerable to reverse causation and omitted variable bias. A landmark study by Frankel and Romer (1999) addressed this problem by constructing instrumental variables for trade based on geographic characteristics, finding that a 1-percentage-point increase in trade to GDP raises income per person by 0.5 to 2 percent. Importantly, "Trade mainly raises income by spurring the growth of productivity per input; in addition trade affects income by stimulating physical and human capital accumulation".

More recent empirical work has moved towards structural gravity models and dynamic general equilibrium frameworks. The gravity model, analogous to Newton's law of gravity, has become the workhorse of empirical trade analysis. As one study explains, "the gravity between two objects is directly related to their masses and inversely related to their distance. Where Fij denotes the flow from country i to country j. Yi and Yj are the economic sizes of the two countries, usually measured as the gross domestic product (GDP), or per-capita GDP. Dij is the distance between the countries". Structural gravity models, derived from micro-founded trade theories, have enabled researchers to quantify the welfare effects of trade policy changes, including the impacts of economic integration agreements, tariff liberalisation, and non-tariff barriers.

A particularly important development is the integration of growth and trade within structural dynamic general equilibrium models. As one study describes, "We build and estimate a structural dynamic general equilibrium model of growth and trade. Trade affects growth through changes in consumer and producer prices that in turn stimulate or impede physical capital accumulation. At the same time, growth affects trade, directly through changes in country size and indirectly through altering the incidence of trade costs". These models suggest that dynamic gains from trade liberalisation can be substantially larger than static gains—potentially doubling the estimated welfare effects—because trade-induced changes in capital accumulation propagate over time.

However, the empirical evidence also reveals important caveats and conditionalities. In the short run, trade liberalisation by developing countries has sometimes been associated with deterioration in growth, particularly where weak infrastructure, dependency on primary commodities, and vulnerable nascent industries create adjustment costs that outweigh the benefits of integration. More broadly, a comprehensive analysis of trade liberalisation policies in developing countries highlights "both potential benefits (FDI, technology transfer, market access) and significant risks (de-industrialisation, job losses, adjustment costs)". These findings suggest that the trade–growth relationship is not automatic but depends critically on complementary domestic policies, institutional quality, and initial conditions.

IV. Contemporary Challenges: Protectionism, Digital Transformation,and systemic Fragentation

The global trade environment has changed fundamentally since the heyday of hyperglobalisation in the 1990s and 2000s. While the volume of world merchandise trade grew by 4.9% year-on-year in the first half of 2025, the outlook for 2026 has darkened considerably. The WTO has raised its 2025 merchandise trade growth forecast to 2.4% but sharply lowered the 2026 projection to just 0.5%, reflecting "a cooling global economy and the full-year impact of higher tariffs". Services trade remains more resilient, with export volumes projected to grow 4.6% in 2025 and 4.4% in 2026, but even services growth is slowing from the 6.8% rate recorded in 2024.

1. The Return of Protectionism

Perhaps the most dramatic change in the global trade landscape has been the resurgence of protectionism, led by the United States. According to WTO data, the average effective rate of US tariffs reached 19.2% in mid-November 2025, its highest level since 1933. The impacts of these tariff increases are already discernible. Peterson Institute for International Economics (PIIE) modelling finds that "the tariffs reduce the US growth rate by 0.23 percentage point from baseline in 2025 and by 0.62 percentage point in 2026. Inflation rises 1 percentage point higher than baseline for the year from September 11, 2025". More fundamentally, trade policy uncertainty has surged to historical highs. The UNCTAD global economic policy uncertainty index has exceeded 500, standing at a 20-year high, while World Bank measures of trade policy uncertainty have reached levels not seen since 2000.

These protectionist measures are not without distributional consequences. As a San Francisco Fed analysis shows, while higher tariffs trigger an expansion in US manufacturing employment, "this comes at the expense of declines in service and agricultural employment, with overall employment declining as lower real wages reduce labor-force participation". For the United States as a whole, real income is projected to fall around 1% by 2028 under the high-tariff scenario.

2. The Rise of Digital Trade

Amid the protectionist turn in goods trade, digital trade has emerged as the most dynamic segment of global commerce. The value of digital trade leapt from $4.59 trillion in 2020 to $7.23 trillion in 2024, representing average annual growth of 12%, significantly outpacing traditional trade which expanded at 9.7%. WTO data shows that global digitally delivered services trade reached $4.64 trillion in 2024, growing 8.3% year-on-year and accounting for 53.4% of total services trade.

The growth of digital trade is driven by both digital delivery of services and digital ordering of goods. As one report notes, "the growth of digital trade is driven by digital delivery of services and digital ordering of goods, further indicating that digital economy infrastructure and cross-border e-commerce ecosystems are

becoming increasingly mature, with digital trade accelerating as a new engine of global economic growth". However, digital trade also presents new governance challenges. Digital economic rules are becoming increasingly important, with 138 free trade agreements containing provisions on digital issues as of September 2025, covering more than 110 countries and accounting for approximately 37% of existing FTAs.

3. Regional Integration as an Alternative Architecture

As multilateral trade liberalisation has stalled, regional trade agreements have proliferated. Asia and the Pacific remained the most active region for agreements in 2025, accounting for nearly two-thirds of all preferential trade agreements in force worldwide. The Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) represent the two most significant mega-regional agreements in the Asia-Pacific. As one analysis observes, "ASEAN-centred platforms, such as RCEP with its cooperation agenda, and other regional agreements, like the CPTPP with its forward-looking rulebook, offer a range of practical avenues" for maintaining trade openness in a fragmented global environment.

Asia's experience with regional integration offers lessons for other regions. Asian countries have promoted economic growth via trade liberalisation, growing to become the largest economic region in the world, accounting for 36.1% of the global economy in nominal terms and 55% in purchasing power parity terms. The region accounts for 53% of world goods trade, driving two-thirds of world growth in recent years. Crucially, intra-regional trade accounts for about 65% of total trade in both Asia and Europe, but Asia's integration has been more market-driven and less institutionally top-down than Europe's, offering a potentially more adaptable model for other developing regions.

4. The Trade–Climate Nexus

The intersection of trade policy and climate change has become an increasingly salient governance challenge. Carbon-related standards are proliferating, raising concerns about fragmentation and potential discrimination against developing countries. China has submitted a proposal at the WTO calling for enhanced cooperation on carbon standards, noting that "As the global green transition accelerates, carbon-related standards are playing an increasingly prominent role in addressing climate change and regulating international trade". The proposal seeks to address the fragmentation of carbon standards through systematic cooperation that promotes trade–climate synergies.

The WTO's Trade and Environmental Sustainability Structured Discussions (TESSD) have advanced work on how trade policy can support climate and environmental objectives. However, as one analysis argues, the absence of binding coordination mechanisms limits the effectiveness of WTO–UNFCCC collaboration, with trade rules and climate targets failing to support each other effectively. Looking ahead, trade agreements will need to construct a "trade–environment–development" three-dimensional coordination framework to transition

the international trade system towards a more inclusive and sustainable development path.

5. WTO Reform and Multilateral Governance

The WTO faces mounting challenges, including stalled negotiations, a weakened dispute settlement mechanism, and governance deficiencies. As one analysis observes, "Confidence in multilateralism has eroded, widening the gap between how trade is governed and how it is practised. In June 2025, WTO members decided reform could not be postponed any longer". The upcoming 14th Ministerial Conference (MC14) in Yaoundé, Cameroon, in March 2026 represents a critical opportunity—or a potential breaking point—for the multilateral trading system.

Reform discussions have been structured around three areas: governance, fairness, and "issues of our time" including climate change, economic security, and digital transformation. However, deep divisions persist. The United States has long argued that WTO rules failed to discipline state-led industrial policies and that consensus blocks movement on new priorities. Europe has pressed for tougher rules on subsidies and greater clarity on the trade–climate interface. India and Brazil continue to argue that agriculture remains unfairly skewed, while many developing countries stress that commitments to fairness remain unfulfilled. As the International Chamber of Commerce has argued, MC14 represents a "lifesaver" opportunity to mobilise political will to salvage the rules-based system.

V. Policy implications for developing economies

The changing trade environment presents both heightened risks and new opportunities for developing economies. On the one hand, "developing economies face a far more challenging international trade environment than they did at the start of the 21st century". Recourse to trade restrictions has become frequent, and these restrictions disproportionately affect emerging market and developing economies (EMDEs). On the other hand, EMDEs are today far more integrated into the global economy than they were at the start of the century, accounting for more than 35% of global trade on average, up from about 20% in the early 2000s. Importantly, 57% of EMDEs now export more to other EMDEs than to advanced economies, up from 27% in 2000.

This shift towards South–South trade offers a buffer against protectionism in advanced economies. Indeed, South–South trade grew 8% year-on-year in value terms in the first half of 2025, compared to 6% for world trade overall, with South–South trade involving partners other than China growing even faster at around 9%. For developing economies, the policy agenda must therefore encompass both defensive and offensive strategies: strengthening regional trade integration, diversifying export markets and products, investing in digital infrastructure to participate in services trade, and building productive capacity to avoid premature deindustrialisation.

As one policy analysis concludes, “trade remains an essential component in reaching development objectives” despite the more challenging environment, and developing economies must “leverage untapped opportunities for cross-border cooperation and improve domestic conditions that will make trade more efficient, while mitigating the adverse effects of more restrictive and uncertain global trade policy”.

VI. Conclusion and future research agenda

This paper has argued that the relationship between international trade and economic growth, while theoretically well-grounded and empirically supported under favourable conditions, is neither automatic nor unconditional. The trade–growth nexus is mediated by domestic institutions, productive capacity, human capital, and the external environment. In the contemporary context, these mediating factors have become more consequential than ever as protectionism, digital transformation, climate policy, and geopolitical fragmentation reshape the global trade landscape.

Three priority areas emerge for future research. First, more work is needed on the distributional consequences of trade in the current era of value chain fragmentation and services-led growth. The old debates about trade and inequality need to be revisited in light of new evidence on automation, AI, and the changing nature of comparative advantage. Second, the interaction between trade policy and climate policy requires rigorous quantitative analysis, particularly as carbon border adjustments and other trade-related climate measures proliferate. Third, the WTO reform process itself needs to be studied as a dynamic political economy problem—not merely as a technical adjustment to rules but as a fundamental renegotiation of the social contract underlying global economic integration.

Ultimately, the case for open trade as a driver of growth and poverty reduction remains compelling. But that case must be made with nuance, recognising that trade integration works best when accompanied by complementary domestic policies, robust social safety nets, and a functioning multilateral system that can manage conflicts and set rules for the twenty-first-century economy. As WTO Director-General Ngozi Okonjo-Iweala has emphasised, “For the sake of growth, development and employment prospects across the WTO membership, we must sustain what is working well, but we must also reform what is not working, and we must reposition our organization to better support members to take advantage of exciting new trade opportunities, not least in the digital economy”. The task for scholars and policymakers alike is to ensure that the next chapter of global trade history is written not in retreat from integration but in its renewal on more inclusive and sustainable terms.

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