

WTO AND GLOBAL VALUE CHAINS: OPPORTUNITIES AND
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Abstract: *Global Value Chains (GVCs) have reconfigured the geography and governance of production: goods and services are increasingly produced through fragmented, internationally dispersed stages. The World Trade Organization (WTO), as the principal multilateral institution for trade rules, interacts with GVC dynamics through market-access commitments, rules on standards and technical measures, disciplines on non-tariff measures, agreements affecting services and intellectual property, trade facilitation, and dispute settlement. This paper examines how WTO rules and institutions create opportunities for developing and emerging economies to integrate into GVCs and capture associated gains — greater market access, technology and knowledge transfer, foreign direct investment (FDI), and higher value-added activities — while also identifying the attendant risks — lock-in at low value-added segments, vulnerability to shocks and lead-firm power, regulatory and compliance costs, and potential social and environmental externalities. Drawing on theoretical literature and empirical case evidence, the paper outlines the principal transmission channels linking WTO engagement to GVC participation, discusses empirical methodologies used to evaluate impacts, and proposes policy strategies that countries can adopt to maximize upgrading and mitigate downsides. Finally, the paper highlights institutional and multilateral policy issues — including quality of rules, dispute settlement effectiveness, and the need for cooperative approaches to standards and digital trade — that shape the capacity of the WTO to support inclusive and sustainable GVC integration.*



Keywords: *World Trade Organization, global value chains, GVC integration, trade policy, upgrading, trade facilitation, TBT/SPS, Aid for Trade, trade governance.*

Introduction

Over the past three decades, production has become increasingly fragmented across borders: intermediate inputs flow between countries and final goods and services emerge from dispersed networks of firms and countries. This reorganization — commonly referred to as the expansion of Global Value Chains (GVCs) — has important implications for how trade policy affects economic development. Participation in GVCs can enable countries to exploit comparative advantages, attract FDI, absorb technological know-how, and specialize in tasks that offer employment and productivity gains. But participation does not automatically translate into higher welfare; outcomes depend critically on the position countries occupy in a chain (low-value assembly vs. high-value design or branding), their ability to meet standards, and their domestic complementary policies.

The World Trade Organization (WTO) is central to the rules-based system that governs cross-border exchange of goods and services. WTO agreements — from the General Agreement on Tariffs and Trade (GATT) through the Agreement on Technical Barriers to Trade (TBT), the Agreement on Sanitary and Phytosanitary Measures (SPS), the General Agreement on Trade in Services (GATS), to the Trade Facilitation Agreement (TFA) and disciplines on subsidies and intellectual property — interact with GVCs in nuanced ways. On the one hand, WTO rules reduce uncertainty, lower transaction costs, and create incentives for firms to integrate internationally. On the other hand, stricter regulatory requirements, the cost of compliance, and the governance structure of GVCs (often dominated by lead firms) may constrain the developmental benefits for some participants.

This paper aims to provide a comprehensive analysis of the opportunities and risks that WTO rules and institutions generate for GVC participation. It synthesizes theoretical insights, reviews key transmission channels, surveys empirical evidence and country experiences, and offers policy recommendations to enhance upgrading



prospects and reduce vulnerabilities. The analysis is framed by the recognition that GVCs are not static: digitalization, reshoring pressures, environmental agendas, and recent shocks (e.g., the COVID-19 pandemic) have introduced both new openings and new fragilities that interact with the multilateral trading system.

Main part

Global Value Chains decompose production into tasks (design, components, assembly, marketing) that are distributed across countries according to relative costs, capabilities, and institutional environments. The key analytical insight from GVC literature is that benefits depend as much on *tasks* as on *products*: two countries producing the “same” good may capture very different shares of value added depending on whether they undertake high-value tasks (R&D, design, branding) or low-value assembly (simple manufacturing). Thus, policy focus shifts from aggregate export volumes to the *quality* of participation: functional upgrading (moving to higher-value tasks), product upgrading (more sophisticated outputs), process upgrading (productivity gains), and chain upgrading (moving to new chains).

Trade rules influence GVCs through several mechanisms. Market access reductions (lower tariffs) reduce the cost of intermediates crossing borders, encouraging vertical specialization. Predictable and enforceable commitments (bound tariffs, MFN, national treatment) lower policy risk for investors and global buyers, promoting long-term sourcing arrangements. Agreements on TBT and SPS help reconcile regulatory regimes and lower non-tariff barriers, enabling suppliers in developing countries to meet buyer requirements. The GATS facilitates cross-border trade in services and commercial presence, crucial for service inputs (logistics, ICT, finance) that support GVCs. Trade facilitation and customs modernization are especially important because frequent border crossings for intermediate goods magnify time and paperwork costs. Finally, the WTO’s dispute settlement system underpins legal predictability, but strains in the system (e.g., Appellate Body dysfunction since 2019) undermine this stabilizing role.



How WTO membership and rules generate opportunities for GVC integration:

Lower trade costs for intermediates and final goods. Tariff reductions and binding schedules reduce the direct cost of cross-border movement of parts and components. This is particularly important for industries where multiple border crossings are required (electronics, automotive, apparel). Lower trade costs increase the range of viable sourcing and scale economies, attracting lead firms and enabling suppliers to join chains.

Predictability and policy credibility. Binding commitments, MFN discipline, and dispute settlement lower the risk of abrupt trade policy reversals. Investors and lead firms typically prefer stable policy environments for multi-year contracts and capital intensive facilities. Predictability encourages the establishment of supplier networks and longer-term capability development.

Standards harmonization and market access through TBT/SPS and mutual recognition. Compliance with international standards reduces technical obstacles. WTO frameworks encourage transparency on technical regulations, and multilateral cooperation on standards (often complemented by regional and bilateral initiatives) reduces compliance costs for suppliers.

Services liberalization and integrated supply chains. Services (transport, logistics, finance, ICT, professional services) are integral to GVCs. GATS commitments can reduce restrictions on cross-border provision and commercial presence, enabling smoother service inputs that are vital for efficient chains.

Trade facilitation and reduced time-in-transit. Implementation of the Trade Facilitation Agreement (TFA) streamlines customs procedures, introduces risk-based controls, and digitizes paperwork, all of which reduce the time and unpredictability of cross-border shipments — critical for just-in-time supply chains.

Aid for Trade and capacity building. WTO-linked and complementary aid programs (Aid for Trade, donor technical assistance) help countries build trade infrastructure, quality control, and export capability, enabling SMEs to meet chain requirements.



Intellectual property and technology governance (TRIPS). Robust IP regimes can both attract investment (protecting returns to design and innovation) and pose barriers to diffusion. For GVC participation, balanced IP rules and licensing environments determine technology transfer dynamics.

Empirical studies using trade in value-added (TiVA) metrics, gravity models, difference-in-differences and synthetic control methods generally find that trade liberalization and improved facilitation increase GVC participation, but the magnitude and nature of gains vary with context.

- China: WTO accession (2001) markedly raised China's participation in GVCs. The country became a central assembly hub, initially capturing significant manufacturing activity and later moving toward higher value-added activities through domestic capability accumulation and industrial policy. Integration into electronics and machinery GVCs via FDI and supplier development is well documented.
- Vietnam: Rapid insertion into electronics and garment chains followed WTO accession and subsequent free-trade agreements, with strong roles for foreign firms and contract manufacturing. Vietnam's experience highlights how targeted reforms, investment attraction and logistic improvements can accelerate chain entry.
- Bangladesh (garments): Export growth in low-tech apparel reflects successful integration into simple assembly stages of clothing GVCs. Gains in employment and export volumes have been significant, but upward mobility to higher value tasks has been slower, illustrating limits to functional upgrading without broader capability development.

Cross-country analyses underscore that GVC benefits are conditional on complementary factors: infrastructure quality, human capital, business environment, capability to meet standards, and linkages between foreign and domestic firms.

Key risks and constraints associated with WTO-facilitated GVC integration:

Lock-in to low-value activities. Many developing country suppliers remain in lower rungs of GVCs, undertaking assembly or basic component production that



captures limited value added. Without deliberate upgrading policies, WTO-facilitated access can entrench a low-income specialization.

Lead-firm governance and power asymmetries. Lead firms in GVCs set technical standards, delivery schedules, and contractual terms. Power asymmetries can result in squeezing margins for suppliers, demanding costly compliance upgrades, or shifting orders rapidly in response to market conditions.

Compliance costs and technical barriers. Satisfying SPS/TBT requirements can be expensive (certifications, laboratory testing, traceability systems). Small suppliers face high fixed costs of compliance, potentially excluding them from lucrative markets.

Vulnerability to shocks and cascading disruptions. The COVID-19 pandemic revealed fragility in concentrated supply chains; disruptions in one node propagate. Firms and countries heavily specialized in particular tasks or suppliers are exposed to demand collapses, logistics breakdowns, or geopolitical trade restrictions.

Environmental and social externalities. Rapid export-oriented industrialization can produce environmental degradation (pollution, resource depletion) and social risks (precarious labor, poor working conditions) if regulatory oversight is weak. These risks also create reputational vulnerabilities in buyer countries, potentially triggering market exclusions.

Loss of policy space and developmental tools. WTO rules (disciplines on subsidies, local content measures, TRIMS) restrict certain industrial policy instruments that countries historically used for infant industry promotion. While these disciplines limit harmful distortions, they also constrain some active industrial policy approaches unless narrow, permitted measures are used.

Uneven distribution of gains (inequality). Gains from GVCs can be concentrated geographically and across skill levels, exacerbating regional or income inequalities within countries.

Institutional and multilateral governance challenges. Strains in the WTO's dispute settlement system, slow negotiation dynamics for new issues (digital trade, investment facilitation), and proliferation of preferential agreements create



governance fragmentation that complicates coherent multilateral responses to GVC challenges.

Assessing the impact of WTO rules on GVC participation requires careful empirical design because accession and reforms are endogenous with economic conditions. Common approaches include:

- Gravity models with TiVA adjustments to estimate trade in value-added flows while controlling for bilateral characteristics and policy variables.
- Difference-in-differences (DID) comparing pre/post accession or reform periods against control groups.
- Synthetic control methods for country-level case studies to construct counterfactuals.
- Firm-level studies exploiting establishment data to observe changes in export status, product mix, and upgrading following policy shifts or market access events.

These methods have illuminated heterogeneous effects: countries with stronger institutions, absorptive capacity, and investment climates gain more from WTO-aligned reforms.

The WTO-GVC nexus suggests a combination of multilateral, regional and national policies:

Domestic capability building. Invest in skills, quality standards, and technological capabilities to enable suppliers to move up value chains. Support vocational training tied to industry needs and foster university-industry linkages.

Targeted trade facilitation and logistics improvements. Streamline customs, reduce border delays, and modernize ports and transport corridors. TFA implementation should be prioritized, with attention to digitalization of customs and single-window systems.

Standards and conformity assessment infrastructure. Build national laboratories, accreditation bodies, and certification schemes to lower the cost of meeting TBT/SPS requirements; explore regional mutual recognition agreements.



Firm linkages and supplier development. Encourage local content in ways consistent with WTO rules (e.g., through capability building and incentives for lead firms to source locally), promote clustering of suppliers, and support SMEs to meet buyer requirements. Upgrading strategies and diversification. Promote functional upgrading by encouraging investment in R&D, design and branding; diversify export destinations and product baskets to reduce concentration risks. Social and environmental safeguards. Integrate labor standards, environmental regulations, and resilient production practices from the outset to reduce externalities and enhance reputational resilience. Leverage Aid for Trade and regional cooperation. Use multilateral assistance to finance infrastructure and capability programs; deepen regional integration to create larger, more resilient sourcing markets and to build regional value chains. Active engagement at the WTO and plurilateral forums. Push for practical cooperation on standards, digital trade rules, investment facilitation, and reform of dispute settlement to restore predictability. Small- and medium-sized economies should coordinate to ensure rules support development objectives.

The WTO can strengthen its support for inclusive GVC participation by:

- Promoting clearer guidance and cooperation on standards conformity, including technical assistance to implement SPS/TBT obligations effectively.
- Supporting expedited implementation of trade facilitation measures and providing targeted support to countries lagging behind.
- Facilitating plurilateral initiatives on digital trade, e-commerce and data flows — areas increasingly central to modern GVCs.
- Reforming dispute settlement to restore confidence in enforcement and to ensure timely resolution of GVC-related disputes.
- Enhancing coordination with development institutions (World Bank, UNCTAD, OECD) to mobilize Aid for Trade and to tailor capability building to GVC requirements.
- **Conclusion.** The interaction between the WTO and Global Value Chains is a defining feature of contemporary trade and development policy. WTO rules and institutions lower the cost and uncertainty of cross-border trade, facilitate



services linkages, and provide vehicles for technical assistance, all of which can accelerate GVC participation. However, realizing inclusive and lasting gains requires more than accession or tariff cuts: countries must develop domestic capabilities, invest in standards and logistics, adopt policies that foster upgrading, and manage social and environmental costs. The multilateral system itself must evolve to address digitalization, environmental standards, resilient supply chains, and governance of complex production networks. In short, the WTO remains a crucial platform to enable GVC integration, but its effectiveness in promoting equitable development depends on coordinated domestic reforms, targeted multilateral assistance, and institutional renewal of the rules-based trading system.

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