NATIONAL/INTERNATIONAL REPORTS: ANALYSIS

World Trade Report 2025: Making Trade and AI work together to the benefit of all

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(Please refer the link for complete report)

INTRODUCTION

The World Trade Report 2025 explores ways in which AI could promote inclusive trade and growth, and how trade could contribute to the development and deployment of AI, even against a backdrop of increasing geopolitical tension and rising protectionist measures.

While AI could open new paths for exports in digitally delivered services or allow firms to leapfrog traditional infrastructure bottlenecks, it could also displace labour-intensive production or reduce incentives to offshore certain tasks. These trends raise critical questions: will AI reduce or reinforce the advantages of scale and agglomeration? Will it create new entry points for developing economies or fortify the dominance of current market leaders? How can policies ensure that gains from AI-driven trade are more widely distributed? These questions are crucial yet remain underexplored in current research and policy debates.

Structure of the Report

Chapter A refers to, AI systems that process data to perform tasks, often with various degrees of autonomy and adaptability. Although there is no universally accepted definition of AI, a common understanding is that AI systems generate outputs – such as recommendations, content or decisions – based on data inputs, with varying levels of human involvement. These systems are designed to learn, adapt and evolve over time, making them distinct from traditional programmed software (OECD, 2024).

Throughout this report, a clear distinction has been drawn between AI development and AI adoption. In this context, the report distinguishes between the terms "AI-enabling" and "AI-enabled".

Inclusive growth refers to strong and sustainable economic growth that benefits a broad range of economies and that is widely shared within economies. It encompasses two key dimensions: reducing disparities between economies and ensuring that the gains from growth are shared broadly within societies. Inclusive growth therefore involves expanding market opportunities and enabling greater participation in global trade, particularly for lower-income economies and smaller firms. At the same time, it requires addressing adjustment challenges and protecting workers who may be displaced or disadvantaged by structural change.

Chapter B explores the economic characteristics of AI and the conditions under which it might generate trade-led growth opportunities that could be more widely shared. It presents simulation results illustrating the potential impact of AI on trade and global growth and highlights the role of trade in improving access to AI technologies and services.

Chapter C provides an overview of the evolving policy landscape, focusing on both trade policies and complementary trade-related policies that influence the inclusiveness of AI adoption.

Chapter D turns to international cooperation, examining opportunities for collective action and the role of the multilateral trading system in fostering a more open and trustworthy AI-enabled global economy.

OBJECTIVES OF THE STUDY

1. To contribute to a better understanding of the mechanisms by which the benefits of trade and AI can be broadly disseminated both across and within economies.
2. To examine the types of domestic, regional, and multilateral policies needed to foster inclusive development, enable the diffusion of AI, and support trade-led inclusive growth, while addressing the challenges that AI presents.

METHODOLOGY

This report is a conceptual analysis of the secondary data collected from the WTO reports, OECD reports and other online sources. It captures a detailed economic analysis of the transformative potential of AI, focusing on its impact on trade and inclusive growth. Further the report adopts a scenario-based approach, using simulations to illustrate potential outcomes under different assumptions about AI adoption and global diffusion.

CONCEPTUAL ANALYSIS

AI, Trade and Inclusive Growth

AI can influence trade by reducing trade costs and increasing productivity. While placing a stronger emphasis on the inclusive growth potential of AI the report draws

on new evidence from a growing body of literature on the economic impact of AI, offers fresh insights through a business survey on firms' use of AI in trade, an analysis of trade in AI-enabling goods, and an examination of the diffusion of AI innovation.

Trade costs include transportation costs, tariffs and non-tariff barriers, costs incurred due to time spent, and information and compliance costs. Global trade costs declined by 15 per cent between 2000 and 2018, although trade costs for services are higher than those for agricultural or manufactured goods (Egger et al., 2021). In recent years, trade costs have been increasing due to factors like tariffs and supply chain disruptions (WTO, 2025). By automating tasks like contract drafting, review, negotiation and monitoring, AI-powered legal tools can lower costs, shorten enforcement timelines and minimize errors.

AI can support the real-time validation of electronic certificates. For instance, machine learning models can be trained to identify inconsistencies in sanitary and phytosanitary (SPS) certificates based on origin, type of product or past non-compliance history. This facilitates the automatic verification of documentation and improves the efficiency and integrity of border processes (Turchetto, 2025).

Differences in regulations and unclear processes for recognizing qualifications and standards continue to present significant obstacles to trade in services, particularly for professional and other regulated services. A study of eBay's Machine Translation (eMT) programme found that eMT increased US exports to Spanish-speaking Latin American countries by 17.5 per cent in terms of quantity and 13.1 per cent in terms of revenue. The trade effect was equivalent to reducing the distance between economies by 37.3 per cent (Brynjolfsson, Hui and Liu, 2019). AI tools used in predictive maintenance and just-in-time delivery systems can substantially lower the costs associated with participation in GVCs and help cut carbon emissions through more efficient vehicle deployment and charge schedules (Falck, 2025).

The recent survey, developed and circulated by the International Chamber of Commerce (ICC) and the WTO in March 2025, gathered responses from 158 businesses across major regions, capturing their perspectives on the current and potential impact of AI on trade. Over 70 percent of firms anticipate that using AI can lead to trade cost savings, with MSMEs generally more optimistic than larger firms.

Firms surveyed by the WTO and ICC reported a range of positive effects from adopting AI in their trade activities. Nearly 90 per cent of firms using AI reported benefits in trade-related activities. The most commonly cited benefit is improved trade efficiency (22 per cent of responses), followed by optimized trade decision-making (14 per cent). Other reported benefits include expanding the foreign customer base (10 per cent), enhanced supply chain management (9 per cent), and broader import and export product ranges (9 per cent and 8 per cent, respectively). Larger firms primarily use AI for compliance with trade regulations, contract analysis and trade finance. Smaller firms, in contrast, tend to focus on market intelligence and improving communication. The survey revealed over 60 per cent of firms with more than 250 employees report using AI or AI-based systems, compared to just 41 per cent of smaller firms. Firms make use of a variety of AI tools, including proprietary systems developed in-house, subscription-based solutions and freely available applications. AI adoption is also more common in high-income economies, where two-thirds of firms use AI, versus less than one-third in low-income economies. Sectoral differences are pronounced as well; fewer than one-quarter of manufacturing firms use AI, compared to 52 per cent in finance and insurance and 61 per cent in other service sectors. These patterns suggest that firms with greater resources – whether due to size or location – are more likely to adopt AI, highlighting the untapped potential for broader diffusion.

The survey shows how AI may help firms to navigate complex trade rules and benefit from trade agreements. Three-quarters of firms that currently use AI responded that they were using AI for customs-related applications. The findings suggest that AI could help to increase the participation of firms from low-income and lower middle-income economies in global trade.

Four scenarios are explored to capture different degrees of policy and technological catch-up between economies, based on projections of operational trade cost reductions, shifts in tasks from labour to AI across a variety of sectors, economies and skill types based on task data, productivity increases associated with the shift in tasks, and increased production of AI services.

a. Scenario 1: Technology divergence within and between economies.

b. Scenario 2: Policy catch-up between economies and technology synergies within economies.

c. Scenario 3: Technological and policy catch-up between economies.

d. Scenario 4: AI technological catch-up between economies.

Many of the trends described in this report are evaluated quantitatively using **scenario analysis** with the **WTO Global Trade Model** that is extended with a new sector: "AI services".

Domestic Trade Policies: Reshaping the Trade and AI Relationship

There is a large body of theoretical and empirical literature that shows how trade policy can affect incentives for innovation and learning. The policies that reduce the extent of international trade strengthen the undersupply of innovation. Consequently the economy grows too slow for both reasons. In fact, some trade promoting policies reduce the harmful effects of the innovation externality, they accelerate growth and raise national welfare. Grossman and Helpman, (1991).

The distinguishing feature of the technology as an input is that it is neither a conventional good nor a public good; it is a non-rival, partially excludable good (Romer, 1990).

Empirical work shows that open trade policies can magnify the positive impact of foreign research and development (R&D) on domestic productivity (Coe and Helpman, 1995; Keller, 2004; Nishioka and Ripoll, 2012). Moreover, trade policies that give access to cheaper, higher-quality or more varied inputs boost profitability and incentives to invest in R&D (Bøler, Moxnes and Ulltveit-Moe, 2015). They also enhance firm-level productivity and promote technology diffusion (Amiti and Konings, 2007; Bloom, Draca and Van Reenen, 2016; Harding and Javorcik, 2012). Importantly, the link between trade policy and innovation is not limited to advanced economies. In developing economies, trade openness and participation in global value chains can support technological catch-up and capability-building (UNCTAD, 2021; Pietrobelli and Rabellotti, 2011; Rodrik, 2004).

A growing body of firm-level evidence shows that trade opening can foster innovation by improving access to foreign inputs. For example, tariff reforms in India in the early 1990s enabled domestic firms to access a larger variety of inputs, accounting for 31 per cent of new product introductions (Goldberg et al., 2010). Trade-opening in services sectors can have similar effects, improving the productivity of downstream manufacturing firms by raising service quality and reducing input costs (Arnold et al., 2015; Arnold, Javorcik and Mattoo, 2011).

Moreover, evidence relating to critical minerals and rare earths suggests that export restrictions can trigger unintended effects by stimulating innovation abroad. For example, China's rare earth export restrictions in the early 2010s led to a global surge in innovation and exports in rare-earth-intensive downstream sectors outside of China, driving down demand for Chinese rare earths permanently (Alfaro et al., 2025).

Emerging evidence suggests that overly restrictive controls can produce the opposite effect. Rather than curbing technological advancement, they may incentivize greater self-reliance in targeted economies by accelerating domestic R&D and investment abroad (Clayton et al., 2025). The broader literature on sanctions finds that unilateral measures often underperform, especially in more recent years, as complex supply chains increasingly complicate enforcement (Felbermayr et al., 2020). Coordinated sanctions by a coalition may reduce the average welfare loss for each coalition member and amplify the impact of sanctions. Yet sustaining such coalitions remains politically and economically costly, as the burden is often unevenly distributed among its members (Chowdhry et al., 2024).

Overall, the effectiveness of trade policy in fostering innovation and sectoral development depends on its alignment with domestic capabilities and institutional contexts. There is no one-size-fits-all model, as successful trade policies for innovation and technology diffusion tend to be adaptive, targeted and embedded within broader national development strategies (Lee, 2013). For example, coordinated trade and industrial policies can enable firms to gradually integrate into global value chains while building local technological capabilities (Rodrik, 2004; Hausmann, Hwang and Rodrik, 2007). This is particularly relevant in the context of AI, as economies must simultaneously integrate into global digital markets and develop domestic capacities to ensure inclusive benefits from technological progress.

Tariffs are the most prevalent tool for policymakers, and applied duties on AI-enabling goods are generally low. Trade remedies can have restrictive effects on AI-enabling goods in economies with low tariffs. The Digital Trade Integration Index (DTI), an indicator assessing the restrictiveness to digital trade of different policies, compiled by the Digital Trade Integration Project (see Ferracane, Ugarte and Rogaler, 2025), suggests that such measures are mainly used by economies with low tariffs. In fact, trade remedies are strongly negatively correlated with tariffs, according to the DTI. As a result, they partly offset the market access provided by low tariffs. These measures are almost exclusively used by the high-income group, so the overall level of protection is higher than what might be concluded from tariffs alone.

A growing set of quantitative restrictions, such as import and export quotas, licensing requirements, and even bans, are increasingly shaping trade in AI-related products. QRs applied to AI-enabling goods have climbed sharply over time, reaching nearly 500 in 2024. In relative terms, the share in total QRs applied to AI-enabling goods has also shown an increase since 2015, reaching almost 18 per cent in 2024. However, gaps in the notification of these measures to the WTO remain significant, with only about half of WTO members complying with the obligation to notify their QRs, meaning the true number of restrictions could be considerably higher.

QRs are typically, but not exclusively, applied to dual-use goods, reflecting the fact that these goods may potentially have both a civil and a military use. If the share of QRs that is export-related is examined, the proportion of AI-related QRs is consistently higher than other types of QRs.

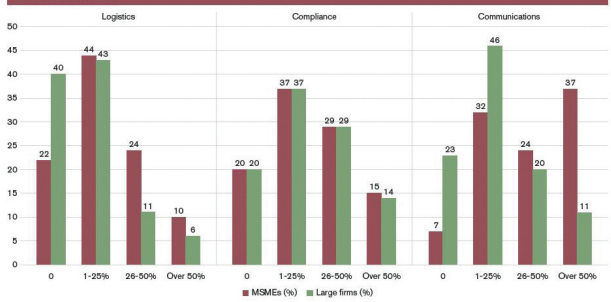
Under the WTO Agreement on Technical Barriers to Trade (TBT), members are encouraged to ensure that technical regulations, standards and conformity assessment procedures do not create unnecessary obstacles to international trade. Although such measures may be justified on legitimate grounds, they must be non-discriminatory, transparent and based on international standards where available. According to the WTO's ePing database, the number of TBT notifications for AI-enabling goods has slightly increased since 2012. However, overall numbers remain small in terms of TBT measures for these goods when compared to other goods. This suggests that, while awareness and regulation of AI are on the rise, AI-specific TBT measures still represent a niche area within the broader framework of technical regulation and trade policy.

Trade in services is key both to leverage the benefits of AI and to accelerate its global development and diffusion, but restrictive regulations limit this potential. Trade in services growth has been outpacing the growth of trade in goods for at least two decades. AI is expected to accelerate this divergence, as it is likely to increase the productivity and tradability of services (see Figure B.1). However, the potential for AI-driven

services trade is not without friction. Despite technological readiness, many of the sectors most exposed to AI face persistent regulatory and policy barriers.

Combining the World Bank-WTO Services Trade Restrictions Index with the classification of AI-intensive sectors by Calvino et al. (2024) reveals high barriers across key AI service sectors. In the context of General Agreement on Trade in Services (GATS) mode 1 of supplying services (i.e., the cross-border supply of services), sectors such as accounting, auditing, television services, insurance, telecommunications and commercial banking exhibit some of the highest levels of restrictions. In the case of services trade through GATS mode 3 (i.e., when a foreign company establishes a presence in another economy to provide services), the most restricted sectors are accounting, auditing, legal services and television services. Potential reasons for higher trade restrictions on certain services can be regulatory oversight, consumer protection or national security.

Figure B.1: Firms expect AI to reduce trade costs related to logistics, compliance and communications



Source: WTO Secretariat calculations based on WTO-ICC business survey (2025).

The level of services restrictions in different economies differs according to income and across modes of supply. Fragmented regulation of cross-border data flows is a risk to inclusive AI development. At the same time, concerns around privacy and security have led to increased scrutiny of how data are collected, transferred and used. Disputes on the unauthorized use of copyrighted data to train AI models are frequent. Hence, regulatory choices on data use play a central role in shaping not only how economies benefit from AI, but also in balancing this benefit with the need for trust and accountability in digital systems.

Even well-intended and well-crafted data regulation can hinder AI diffusion if rules are fragmented rather than coordinated across jurisdictions. A multiplicity of diverging data regimes leads to an increasingly complex and fragmented regulatory landscape for cross-border data flows (OECD, 2023a). This can make it difficult to import or export data, which is especially problematic for firms in low-income and lower middle-income economies (Chander and Le, 2015; Casalini and López-González, 2019). Without access to global data, these firms are often excluded from collaborative R&D, cloud-based AI tools or real-time analytics that drive innovation (Schweitzer, Saccomanno and Saika, 2024; Cui, 2025). Moreover, complex or fragmented data governance frameworks can impose high compliance costs. For small firms with limited legal and technical resources, this can act as a disincentive to adopt AI technologies (Aaronson, 2024; van der Marel and Ferracane, 2021). Data localization can be particularly counterproductive in economies where insufficient data infrastructure undermines the intended benefits of domestic control of data, and this may, in turn, slow AI deployment. A recent study finds that AI-powered apps reach substantially more foreign users than apps without AI, but that the effects are halved in economies with strict limitations on cross-border data flows (Sun and Trefler, 2023). Simulations by the Organisation for Economic Co-operation and Development (OECD) and the WTO suggest that, in a scenario in which all economies fully restricted cross-border data flows, global gross domestic product (GDP) losses would reach 4.5 per cent, and reductions in exports would amount to 8.5 per cent (OECD and WTO, 2025).

An absence of data regulation would be equally costly because it would undermine trust in economic transactions requiring data-sharing. Fragmented approaches to data regulation are costly, but so is a lack of regulations. Consumers and businesses need to trust their counterparts in economic transactions if they are to send their data and grant authorization to use those data for AI applications. To enable the scale that is needed to fully exploit the benefits of AI for trade, and vice versa, such trust must extend beyond national borders. Concerns about unauthorized data use tend to be particularly prevalent where foreign jurisdictions are concerned. Hence, policymakers are tasked to develop data regulation that provides for the movement of data across jurisdictions, but also guarantees that those data are protected and safeguarded. In fact, the simulations by the OECD and WTO also suggest that, in a scenario where all economies removed their data flow regulations, global GDP would fall by nearly 1 per cent and global exports by just over 2 per cent. In these scenarios, the negative impact on trust would outweigh reductions in compliance costs (OECD and WTO, 2025).

Overall, it appears that the evolving regulatory landscape of cross-border data flows is necessary to instil trust, but that, in its current form, it is dominated by unilateral measures that prevent equal access to data. The evidence reviewed shows that there is a growing number of restrictive measures for cross-border data flows in place. This is particularly costly for low-income economies and micro, small and medium-sized enterprises (MSMEs) that typically lack access to large high-quality datasets. Given the importance of such datasets for AI, this implies a significant inequality in opportunities to benefit from AI due to trade measures. However, since such measures might serve legitimate objectives, the challenge is to design them in a way that minimizes barriers to inclusiveness. As Chapter D will discuss, this can be best achieved through international cooperation.

Trade and International Co-operation

The General Agreement on Tariffs and Trade (GATT) promotes non-discriminatory trade in AI-related goods, including the raw materials used to produce them. The GATT's non-discrimination principles – most-favoured-nation (MFN) and national treatment – help to make access to AI-related goods more inclusive by promoting equal treatment of imports from all WTO members. The GATT further commits WTO members to reduce their tariffs on AI-related goods, including by binding them at agreed maximum levels. Predictable tariffs reduce uncertainty and lower risks and costs for firms of all sizes, including micro, small and medium-sized enterprises (MSMEs), making it easier for them to trade and invest in AI. This helps to broaden access to AI-related goods in all economies, including developing economies.

The WTO's Information Technology Agreement (ITA) further supports AI by making ICT that is key for the development and application of AI more affordable. This plurilateral agreement builds on the GATT by binding and eliminating customs duties on a wide range of IT goods, including many that are essential for AI, such as semiconductors and computer equipment (WTO, 2018). As of 2025, 82 WTO members, representing about 97 per cent of world trade in IT goods, are parties to the ITA.

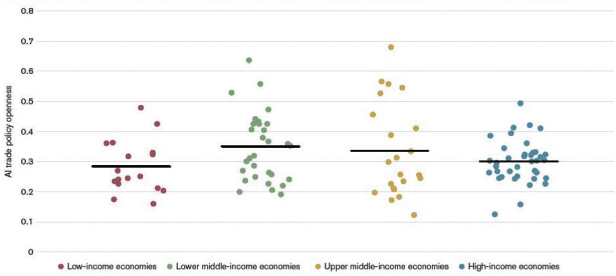
The WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) can support AI development and deployment by encouraging innovation. IP rights provide the legal certainty and exclusive, time-limited control over the innovation that can incentivize investment in AI research and development (R&D). This, in turn, encourages innovators to take risks that advance AI-related technologies (WTO, 2020). Domestic IP systems based on TRIPS standards provide the basis for AI innovators to also license their inventions, often subject to a fee, which can attract investment and accelerate the commercialization of new AI-related products. Other AI developers may adopt open source licences that let others freely use, modify and share AI innovations, potentially fostering broader collaboration. The WTO's plurilateral Government Procurement Agreement 2012 (GPA 2012) can help promote open, transparent and competitive innovation procurement in AI technology. The TRIPS Agreement requires developed members to provide incentives to their enterprises and institutions to promote and encourage technology transfer, which may include AI-related technologies, to least-developed countries (LDCs) (Fernández, 2025).

The WTO's Agreement on Subsidies and Countervailing Measures (SCM) can help to support more inclusive AI development by limiting the risks of subsidy competition. The WTO's Agreement on Safeguards allows the temporary restriction of imports of AI-related goods to shield domestic industries from damaging import spikes.

The TBT Agreement further requires members to use relevant international standards when developing domestic regulations on AI-related goods, on the premise that this avoids duplicative testing of AI models and devices, lowers compliance costs and shortens regulatory cycles.

MAJOR FINDINGS

Figure C.6: Variation in AI trade policy openness within income groups



Source: WTO Secretariat calculations based on the World Bank–WTO Services Trade Restrictiveness Index (STRI), the WTO Tariff & Trade Data (TTD) platform and the Digital Trade Integration (DTI) database.
Note: Each dot represents the AI-TPOI score for an economy, grouped by income level. Lower scores indicate greater openness, while higher scores indicate greater restrictiveness. Horizontal lines denote the average AI-TPOI value within each income group.

- Patterns of openness across economies suggest that overall policy openness to AI-related trade is not solely determined by income levels. On average, lower middle-income and upper middle-income economies exhibit the highest restrictiveness, while high-income and low-income economies tend to be more open (see Figure C.6).
- Upper middle-income economies, in particular, show considerable dispersion, pointing to divergent regulatory approaches. For instance, Costa Rica, Jamaica, Namibia and Peru belong to the most open economies. Moreover, low-income economies generally record lower AI-TPOI scores, but this lower number of formal barriers also reflects the fact that low-income economies often have limited governance capacity and underdeveloped digital infrastructure.
- Clearer patterns across income groups emerge when disaggregating the AI-TPOI into its three components.
- High-income economies exhibit higher restrictiveness in goods-related trade measures, despite generally applying lower average tariffs. This may reflect the use of non-tariff barriers and recent export control measures targeting advanced technology products, particularly along semiconductor value chains. In contrast, lower middle-income economies and upper middle-income economies tend to exhibit greater restrictiveness in services trade and cross-border data flows, driven by localization requirements, data sovereignty concerns and efforts to promote domestic digital industries.
- Substantial variation within each income group also highlights the diverse strategic priorities and institutional approaches shaping AI-related trade policies across economies.

CONCLUSION

Several challenges that shape the inclusiveness of AI lie partly outside the WTO's mandate, highlighting the need for greater policy coherence and collaboration. Addressing these challenges requires a "trade and" approach. In that context, enhanced cooperation between the WTO and other international organizations and initiatives could help to ensure that the growing role of AI, and the trade it enables, benefits more people. Closing the digital divide, managing AI-related labour market adjustments, aligning trade with environmental goals and addressing market concentration are some of the key areas in which international cooperation can help to ensure that AI-related trade contributes to more inclusive and sustainable outcomes. While some initiatives already exist, enhanced international cooperation is still needed to help close digital divides by supporting sustained investment in digital infrastructure, AI skills development and regulatory capacity. Greater collaboration among international organizations working on AI, labour and trade could promote complementary policies that preserve the benefits of open trade, while managing AI-led labour market adjustments. More international cooperation could also promote more environmentally sustainable AI value chains by addressing the risk of trade tensions arising from uncoordinated trade-and-environment-related policies relevant to AI and enabling benefits for economies stemming from production specializations related to green comparative advantages. Finally, improved coordination between trade and competition policies could help to address market concentration in AI-related sectors and support more inclusive participation in AI-driven growth.

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