

C Developments that challenge the system

Over the past three decades, global trade has undergone significant structural shifts. The distribution of global economic activity has shifted toward fast-growing emerging economies. The relevance of differences in economic systems and the extent of government interventions in markets have grown. The expansion of global value chains (GVCs) has increased global economic interdependence, while digital transformation has altered what is traded and how it is traded, and climate change has underlined the role of trade in finding ways to adapt. The WTO now operates in a multipolar, deeply integrated global economy in which interests are more diverse and strategic competition is more salient. As a result of these shifts, the WTO has come under strain. This chapter examines major trends reshaping the global economy, the reasons why these are straining the multilateral trading system and the ways in which the system has tried to keep pace.

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Key points

- Over eight decades, the multilateral trade cooperation embodied in the GATT and subsequently the WTO has successfully fostered a deeply integrated, multipolar global economy.
- The share of low and middle-income economies in global trade has nearly doubled, rising from 23 per cent in 1995 to 45 per cent in 2024. While this rapid change may have created a gap between members' commitments and today's economic realities, it also creates new opportunities.
- Governments' economic interventions and their spillovers on trading partners have become more prominent in WTO discussions. New industrial strategies have led to an increasing use of subsidies, and this has brought level-playing-field questions to the fore in discussions of rules-based cooperation.
- The world economy has become far more deeply integrated since the Second World War. The greater complexity of global economic linkages has also increased the complexity of implementing trade policies. Meanwhile, global crises and geopolitical tensions in recent years have recast interdependence as a security issue.
- Since the mid-1990s, digital technologies have fundamentally reshaped international trade. The rapid emergence of artificial intelligence (AI) is amplifying this transformation, generating significant economic opportunities while at the same time creating new challenges.
- The importance and scope of environmental policy have changed dramatically since the WTO was established in 1995. A lack of coordination of environmental and trade policies risks reducing the potential of those policies to support the transition to a less carbon-intensive economy, and could create a negative impact on trading partners.

The WTO's current challenges are not wholly new; many of today's reform issues have deep roots in the GATT era. From early in its history, the GATT had to grapple with how to accommodate later arrivals to reciprocal tariff liberalization. E. Wyndham White, the first Director-General of the GATT, captured this bargaining power problem in the 1952 "GATT in Action" report, describing the position facing the 1950-51 Torquay Round:

"A number of European countries with a comparatively low level of tariff rates considered that they had entered the Torquay negotiations at a disadvantage. Having bound many of their rates of duty in 1947 and 1949, what could these low-tariff countries offer at Torquay in order to obtain further concessions from the countries with higher levels of tariffs?" (Interim Commission for the International Trade Organization, 1952).

The same early years also saw the GATT addressing a variety of issues, including integrating economies with different economic systems, enhancing the benefits of membership for developing economies, disciplining subsidies and state intervention, and managing regional agreements without undermining multilateralism. Innovation was required, even for basic drafting of documents, for as GATT membership expanded and negotiating rounds grew more complex, the system needed a way to track progress toward consensus (see Box A.1 in Chapter A). Understanding how the GATT confronted these challenges will not solve today's problems, but it offers a reminder of what is possible and a useful context for current reform discussions.

What has changed since the GATT is the nature, scale and systemic importance of these issues. The GATT began as a relatively small group of members focused primarily on border measures in goods trade. The WTO is a near-universal organization that currently counts 166 members, operating in a deeply integrated, multipolar world economy. Emerging economies account for a much larger share of global trade than when the WTO was created, and are the principal suppliers in many sectors. GVCs link firms and workers across jurisdictions. Services, data, digital trade and intangible assets have become central to trade. Geopolitical tensions between major trading partners have altered the perceived balance between the benefits and potential costs of economic interdependence. A diverse set of policy instruments to address climate change, industrial development and redevelopment, and national security now shapes trade relations as much as tariffs once did. The

WTO was built in large part to manage trade policy spillovers; today, it needs to manage the spillovers from a broader and more complex set of policies, and this raises a fundamental question: what do these changes mean for a rules-based system conceived in a very different economic and geopolitical era? This chapter examines major trends reshaping the global economy and addresses three related questions: why do they strain the existing system, how has the system tried to keep pace, and what is the price of falling short?

1. A changing economic power distribution is straining old bargains

The rapid integration of developing economies into the global economy and the WTO has led to unprecedented income convergence and poverty reduction. The share of low and middle-income economies in global merchandise trade (imports plus exports) has nearly doubled, rising from 23 per cent in 1995 to 45 per cent in 2024. This expansion, which underpinned substantial GDP growth and contributed to lifting hundreds of millions of people out of poverty, coincided with the creation of the WTO in 1995 and aligns with the WTO's foundational objectives to raise living standards and ensure that developing economies secure a share in the growth in international trade commensurate with the needs of their economic development.¹ By providing a stable, rules-based framework, the WTO has functioned not only as a forum for negotiation, but as a catalyst for integrating emerging markets into the global economic core, institutionalizing trade as an engine for sustainable development.

The sustained and rapid convergence of many developing economies toward high-income levels has transformed the landscape of international trade. A number of developing economies have become regional or even global trading powers, gaining significant import market power and becoming principal suppliers of many products to other WTO members. As the growth trajectories of some developing economies rapidly diverged from others, developing members have also become more diverse in terms of their economic power.

(a) Evolving import market power and principal supplier status

The distribution of import market power has shifted markedly toward emerging economies

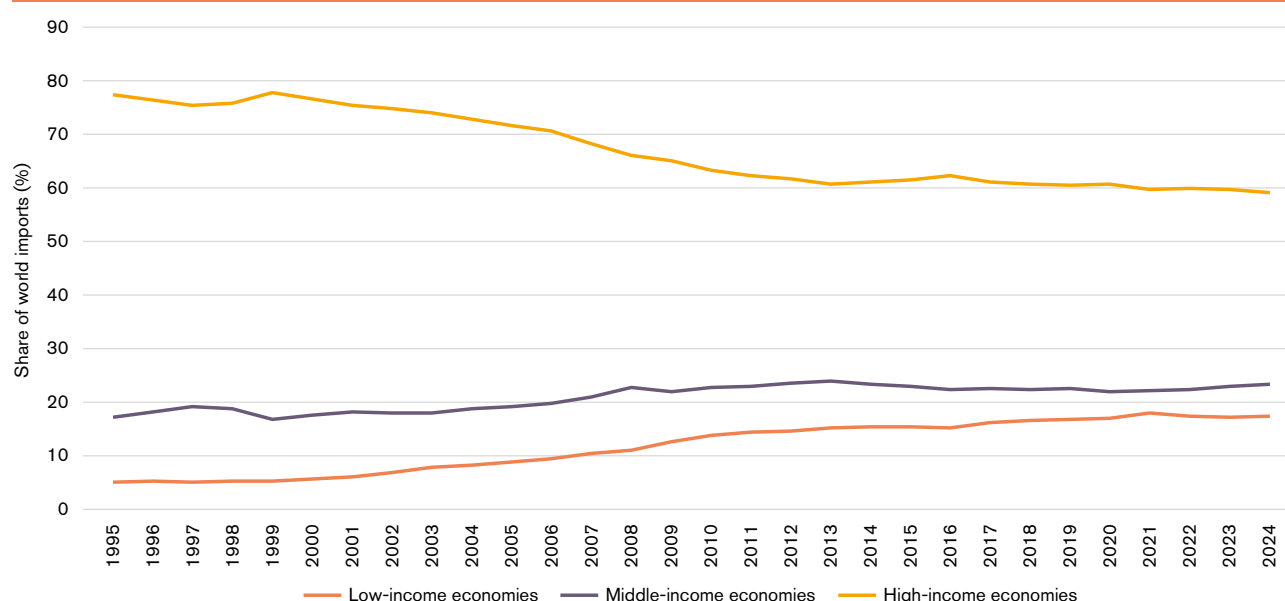
since 1995. While high-income economies maintain the largest share of total merchandise imports, low and middle-income economies have increased their share from less than 25 to over 40 per cent. Figure C.1 illustrates this expansion in global import shares, reflecting the increased consumption and purchasing weight of these middle-income economies. This implies that the capacity to influence world prices through domestic trade policy is now distributed across a broader set of global actors than at the time of the WTO's creation, some with relatively high tariff bindings.² The opinion piece by Professor Paola Conconi explores what the world trading system offers small and medium-sized economies, and what is needed to preserve this system for their benefit.

The changes in import market power since the Uruguay Round tariff bindings were established may have created new tariff bargaining opportunities, as a gap has emerged between current market realities and the tariff bindings established during the Uruguay Round. As discussed in Chapter B, according to the terms-of-trade theory – whereby part of the tariff burden is shifted from an importer onto foreign exporters in the form of lower export prices – an important function of the multilateral trading system is to discipline large economies with incentives to exercise market power at the expense of trading partners, a function that is

achieved only when tariff bindings reflect a member's actual influence on world prices (Bagwell and Staiger, 2002b; Staiger, 2022). Empirical evidence from Jakubik, Keck and Piermartini (2024) confirms that the incentive to curb the unilateral exercise of market power was a statistically significant driver of the original commitments reached during the Uruguay Round and in subsequent WTO accessions; the latter is also confirmed by the results of Bagwell and Staiger (2011). Further evidence that WTO membership reduces the imprint of market power on a member's tariffs is provided by Ludema and Mayda (2013) and Soderbery (2018). However, because current commitments remain tethered to historical data, they may no longer provide an effective corrective mechanism for the terms-of-trade spillovers generated by contemporary economic actors. Jakubik, Keck and Piermartini (2024) estimate that this discrepancy between the current market power of some economies and their tariff bindings is highly sector-specific.

Alongside the shift in import market power, the landscape of potential bargaining participation – as determined by economies' principal supplier status – has also changed. As discussed in Chapter B, the first five rounds of GATT negotiations took the form of simultaneous bilateral bargains organized around the principal supplier rule,

Figure C.1: Low and middle-income economies are claiming a growing share of world merchandise imports



Source: WTO Secretariat calculations.

Note: The figure groups economies based on their income classification as of 1995 according to the World Bank.

Small and medium powers in the multilateral trade system

by Paola Conconi

Professor of Economics, University of Oxford

The multilateral trading system, established with the 1947 General Agreement on Tariffs and Trade (GATT) and greatly expanded with the creation of the WTO in 1995, created a rules-based system in which trade concessions were extended to all members, commitments were bound, and violations could be challenged through institutional procedures.

The GATT/WTO system has been highly successful in expanding trade, lowering barriers and providing a predictable framework for economic exchange. But its importance for small and medium-sized economies goes beyond aggregate trade gains. In particular, the non-discrimination principle of most-favoured-nation (MFN) treatment has helped smaller members to obtain benefits they might not have been able to secure through bilateral bargaining alone. By generalizing concessions across the membership, non-discrimination has limited the ability of larger economies to reserve the best terms for themselves.

The system is now under strain. The United States has blocked the appointment of new members of the Appellate Body, the WTO's highest appeals tribunal, which consequently stopped functioning in 2019. This has weakened enforcement of multilateral rules: given that their appeals can no longer be heard, countries may delay or avoid compliance with adverse rulings. National security and strategic autonomy are increasingly invoked to justify trade restrictions, undermining trade policy predictability. Issues including digital trade, artificial intelligence (AI), climate-related measures, industrial policy, subsidies and state-owned enterprises are stretching rules designed for an earlier era.

The problem is not simply that the WTO has failed to update its rules. The trading system was built around bargains struck under an earlier distribution of economic power. Emerging economies now account for a much larger share of global trade, but tariff bindings and other market access commitments still reflect the Uruguay Round era. Some advanced economies argue that this has put them at a disadvantage: they have little left to offer in terms of tariff concessions, since they have bound their MFN tariffs at low levels; in contrast, emerging economies have high MFN tariff bindings, which gives them more power in trade negotiations. In the absence of a supranational authority with autonomous enforcement powers, international

agreements must be self-enforcing: members comply only if the long-term benefits of cooperation outweigh the short-term gains from defection (Bagwell and Staiger, 1997; Maggi, 1999; Conconi and Perroni, 2009). For the multilateral trading system to endure, large members must continue to see compliance with its rules as serving their interests.

For small and medium powers, this crisis is particularly risky. If large economies lose faith in the multilateral trading system, they are more likely to turn to exclusive agreements, unilateral instruments or power-based trade relations. The shift toward digital trade, climate measures, industrial policy, subsidies and national security also makes smaller economies vulnerable to fragmented standards, competing subsidy regimes, export controls and discriminatory regional arrangements. The more trade governance moves into exclusive or power-based settings, the harder it becomes for smaller members to shape the rules that affect them.

For the system to survive, it must therefore be reformed. WTO reform is essential to preserving cooperation among large economies and preventing mutually destructive trade policies (e.g., Bagwell and Staiger, 1999). But it is also key for smaller economies, whose voices are weakened in an increasingly multipolar and politicized global economy. For them, the WTO is not only a forum for trade liberalization; it is a source of institutional protection.

A key challenge is that WTO reform requires consensus among 166 members that differ in size, development levels and domestic economic models. As a result, any member can effectively block reform. If consensus cannot be achieved multilaterally, one way forward is to pursue WTO-compatible plurilateral initiatives. These must remain open, transparent and anchored in the multilateral framework. For small and medium powers, the priority is therefore not simply more trade liberalization, but the preservation of a system in which rules, rather than raw bargaining power, structure global trade.

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which states that nations should primarily negotiate tariff concessions on a specific product with the partner that serves as their main source of imports of that product into their market.³ While the Kennedy and Tokyo rounds experimented with formula-based reductions, the Uruguay Round saw a strategic return to negotiations structured around principal supplier relationships to maintain the integrity of the MFN principle. By reducing the degree to which economies can benefit from tariff cuts without offering their own reciprocal concessions, the principal supplier rule remains a central tool for identifying viable bargaining pairs and managing the complexity of bilateral trade interests. As shown by Table C.1, WTO research suggests that if bilateral trade negotiations were to take place today under the principal supplier rule, they would potentially differ significantly from those that would have taken place in 1995, with many more “North-South” and “South-South” bargaining pairs based on how these bilateral principal supplier relationships have evolved.

The shifts in import market power and principal supplier status open new possibilities for reciprocal MFN tariff negotiations. First, economies that have recently gained significant import market power are still currently operating under historical tariff bindings that reflect their past, weaker economic positions.⁴ Consequently, in view of the shifts in market power that have occurred since the Uruguay Round, the terms-of-trade theory implies that there may now be new scope for negotiated commitments to address this gap and achieve additional market access bargaining gains across WTO members. Second, some developing and emerging economies may have always possessed market power, but were historically excluded from active bargaining because they lacked

principal supplier status in key destination markets. As these nations achieve that status today, they too can potentially address this gap and achieve market access bargaining gains with other WTO members.

The return to traditionally structured market access negotiations was already suggested under the GATT as a means to better integrate less-developed economies following the shift toward formula-based tariff reductions. Finger (1979) posited that a return to reciprocal, request-and-offer, product-by-product tariff bargaining could be effective if refocused on exchanges between major industrial economies and their primary less developed trading partners. However, he noted that the feasibility of this approach remained contingent on “substantial bilateral, principal supplier trade flows between the proposed participants that are subject to negotiable trade restrictions”. The changing landscape of market power and principal supplier status since the Uruguay Round points to the possibility that this contingency may now be met, both for new North-South and for new South-South bargains.

Analysed through the lens of the terms-of-trade theory, the gap between existing commitments and current economic realities suggests substantial untapped potential for mutually beneficial gains from further bargaining. As shown in Figure C.1, the capacity to influence world prices through domestic trade policy is now distributed across a broader set of global actors than at the time of the WTO’s formation. And as shown in Table C.1, the identity of principal suppliers has changed meaningfully since 1995, altering the bargaining possibilities of different members. Specifically,

Table C.1: Principal supplier relationships have changed between 1995 and 2024

Exporter	Importer	
	North	South
North	116,961 → 101,167 (71% → 58%)	341,321 → 228,687 (74% → 41%)
South	48,234 → 73,054 (29% → 42%)	122,391 → 330,781 (26% → 59%)

Source: WTO Secretariat calculations.

Note: Figures are the sum of the number of distinct six-digit Harmonized System (HS) product and destination pairs in which an economy is the top exporting partner of the importing economy among all exporting partners facing the MFN tariff from the importing economy. Percentages represent the share of principle suppliers from the “North”/“South”. Green (orange) shading reflects a positive (negative) percentage change in principal supplier relationship between 1995 and 2024. “North” comprises economies classified by the World Bank as high-income on the basis of 1995 gross national income per capita; “South” comprises all other economies.

among economies that were GATT members at the conclusion of the Uruguay Round, there were 387 new potential bargaining pairs in 2024, i.e., pairs of economies that were mutually the principal suppliers of one or more goods to each other (among suppliers facing the MFN tariff) in 2024 and that had not exhibited this feature in 1995. This represents a significant shift when compared to the baseline of only 861 such pairs in total that existed at the end of the Uruguay Round. These changing trade patterns may have created entirely new North-South and South-South corridors where economies are now mutually principal suppliers to each other for one or more goods, and have incentives to bargain reciprocally with each other for lower MFN tariffs. Finding a way to unlock the potential for mutually beneficial gains through further reciprocal MFN tariff liberalization remains a central prospect for WTO members.

The terms-of-trade theory also suggests that developing economies that did not take part in the reciprocal tariff bargaining process could be missing out on economic advantages that industrialized economies achieved through a half-century of reciprocal MFN tariff liberalization (Jawara and Kwa, 2003; Bagwell and Staiger, 2014). Multilateral tariff negotiations were designed to maintain broadly stable world prices among active participants. Indeed, empirical evidence from recent negotiation rounds suggests that the principle of reciprocity has played a role in stabilizing world prices by tying domestic tariff liberalization to foreign market access concessions (Limão, 2006, 2007; Karacaovali and Limão, 2008). Because this neutralization of world price fluctuations prevents unreciprocated terms-of-trade windfalls from systematically spilling over to non-participants, the economic benefits of the market access bargain remain largely contained within the circle of active negotiators (see Box B.4 in Chapter B).

However, low tariff bindings in developed economies may limit the potential for reciprocal exchange. In the case of North-South bargaining, addressing this gap and achieving the potential gains is made challenging by a bargaining asymmetry – between early liberalizers and later arrivals to reciprocal tariff liberalization – that would be familiar from the early days of the GATT (see the quotation by E. Wyndham White at the beginning of this chapter) and that is sometimes described as the “latecomers” problem (Bagwell and Staiger,

2014). In its current manifestation, this challenge arises because industrialized economies have spent decades incrementally negotiating their MFN tariffs down to minimal levels. In contrast, many developing economies were not actively engaged in these earlier tariff negotiations and maintain higher tariff bindings as a result, although those that acceded more recently were required to accept much more stringent binding ceilings and significantly lower their applied rates upon joining. This creates an imbalance where developed economies possess limited remaining bargaining leverage to offer in exchange for the substantial concessions they now seek from emerging partners. Theoretically, the problem is that past negotiations become outdated when the arrival of powerful new actors was not fully anticipated in the original design, and untapped bargaining potential persists if the asymmetries in existing tariff bindings create an impasse where the traditional engine of reciprocity stalls (Bagwell and Staiger, 2014).⁵

The existing multilateral framework contains legal mechanisms that allow for the adjustment of tariff bindings. For example, as discussed in Chapter B, GATT Article XXVIII (“Modification of Schedules”) allows members to withdraw or modify concessions by endeavouring to maintain a general level of reciprocal and mutually advantageous concessions through compensatory adjustments or, alternatively, accept the withdrawal of substantially equivalent concessions by impacted trading partners. Whether the use of Article XXVIII could provide the needed flexibility for this purpose is an open question. Historically, as summarized by E. Wyndham White in the aftermath of the Torquay Round (1950-51), the problem of late arrivals to reciprocal liberalization was discussed as follows:

“The rules adopted by the Contracting Parties for their negotiations stipulate that the binding of a low duty or of duty-free treatment is to be recognized as a concession equivalent in value to the substantial reduction of high tariffs or the elimination of tariff preferences. Some thought that, in observance of this rule, the high-tariff countries should make further reductions in their duties in exchange for the prolongation of the binding of low duties.” (Interim Commission for the International Trade Organization, 1952).

(b) Special and differential treatment for a diverse group of developing members

As reviewed in Chapter B, there are over 150 special and differential treatment (S&DT) provisions across WTO agreements. These provisions seek to expand developing members' trade opportunities through improved market access and to safeguard their interests within the trading system. They also afford developing members greater flexibility in their commitments, their actions, and their use of policy instruments, alongside longer transition periods for the implementation of commitments. Finally, they provide for technical assistance and include provisions aimed specifically at least-developed country (LDC) members.

The economic rise of many developing economies poses a challenge to addressing S&DT in the negotiations. Today, two-thirds of WTO members are developing economies. They account for nearly half of global merchandise exports. One of the key issues in the WTO reform discussions has been the dilemma that members face in addressing S&DT in ongoing and future negotiations. This issue is primarily driven by the practice of self-designation of developing-economy status. Developing economies may access S&DT without differentiation, but as some developing economies have experienced growth and major changes in their trade capacity since 1995, some developed WTO members are reluctant to accord an across-the-board or horizontal S&DT without a meaningful differentiation.

Meanwhile, developing economies continue to stress the importance of flexibilities that reflect their development needs and capacities. Developing economies are calling for better or fuller implementation of existing S&DT provisions in WTO agreements that would afford them the policy space needed to spur innovation, diversify their economies and boost overall economic development (see Section B.2). They also seek longer transition periods to integrate new rules that are commensurate with their capacity. Beyond S&DT provisions, differences of views continue to persist on how to address the longstanding requests of some developing economies, for example in the context of the G90 coalition. In the area of agriculture, calls for the continuation of the agricultural reform process mandated by Article XX of the Agreement on Agriculture remain an important element of negotiations (see Section C.2).

It is important to emphasize that the discussion in the previous subsection about evolving import market power and principal supplier status does not constitute an argument against S&DT provisions in the multilateral trading system. Rather, it points to a more narrow and nuanced implication. If a developing economy qualifies for S&DT and is also a principal supplier of particular products in the markets of some of its trading partners, the exercise of its right to refrain from reciprocal tariff bargaining on those products may not be its economically optimal strategy. By opting out of reciprocity, such an economy may forego opportunities to shape negotiated outcomes and fully capture the associated gains. In these circumstances, non-reciprocity may entail significant opportunity costs despite the availability of S&DT flexibilities (see Box B.4 in Chapter B).

New S&DT approaches have been adopted in recent WTO agreements. In the approach to S&DT in recent agreements, it is increasingly recognized that developing economies need to implement commitments, albeit in a manner commensurate with their capacity. One of the defining features of the Trade Facilitation Agreement (TFA), which entered into force in February 2017, has been the implementation of commitments in stages that recognize the administrative, financial or institutional capacities of developing members and LDCs. The TFA enabled these members to set their own pace of implementation and to benefit from capacity-building support. Meanwhile, according to the Agreement on Fisheries Subsidies, which entered into force in September 2025, all members commit to prohibiting subsidies contributing to illegal, unreported or unregulated fishing. Neither of these agreements exempts developing members or LDCs permanently from any of their disciplines.

Recent discussions on development at the WTO call for an evidence-based approach to S&DT, or to accord special treatment to developing economies based on objective criteria. There have been instances in the past where flexibilities were based on specific criteria (e.g. Article 27 of the Agreement on Subsidies and Countervailing Measures on exemption of developing economies from phasing out export subsidies), and the Agreement on Fisheries Subsidies revived this approach by offering flexibilities to certain members in their notification obligations: LDCs and developing economies with an annual share of global volume

of marine capture production not exceeding 0.8 per cent can make certain notifications every four years, instead of every year, as other members are required to do.

One of the ways that the challenge of S&DT could potentially be addressed is by means of upfront commitments not to avail of S&DT in WTO negotiations. For example, the prior announcement by China in 2022 not to seek to use the flexibility provided for by the 12th WTO Ministerial Conference's Ministerial Decision concerning the TRIPS Agreement (Agreement on Trade-Related Aspects of Intellectual Property Rights) paved the way for the adoption of the Decision. The Decision temporarily relaxed certain rules governing compulsory licensing for the production and supply of COVID-19 vaccines.⁶ In addition, in recent years, a number of developing members, including Brazil, China, Costa Rica, the Republic of Korea and Singapore, have expressed their willingness not to seek S&DT in current or future negotiations without prejudice to their developing economy status.

2. The growing relevance of different economic systems and government interventions

The degree and form of governmental involvement in economies have become more diverse across the WTO membership since the creation of the WTO. Since 1995, 38 economies have acceded to the organization; many of these were formerly centrally planned economies in the process of economic transformation. Terms negotiated in their working party reports and protocols of accession reflect the specific economic structures and policy arrangements that each of these economies brought to the table, as well as the reforms that incumbent members requested from them. More than two-thirds of acceding members committed to regular reports on developments in their respective privatization programmes. One-third of acceding members made commitments that extended beyond standard GATT Article XVII disciplines on state trading enterprises, and the accession terms of three members included provisions allowing other members to apply alternative methodologies for price comparisons in anti-dumping proceedings. Moreover, government interventions in markets have become more important in many economies, with a renewed emphasis on industrial strategies and an intensified use of government

policies to address environmental and economic resilience issues (see also sections C.3(c) and C.4(a)).

Issues related to government interventions in markets and their economic spillovers on trading partners have become more prominent in WTO discussions. Records of discussions in the WTO General Council show that members have increasingly drawn attention to differences in economic systems as well as to industrial policy and its economic spillovers (see Figure C.2).

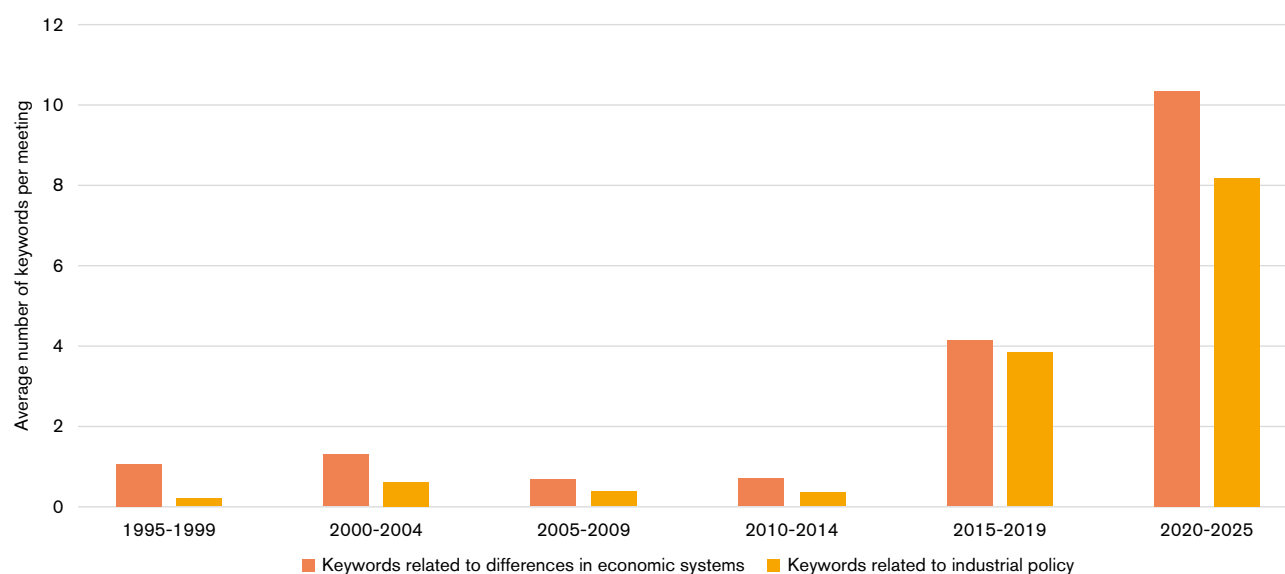
(a) Interface challenges arising from different economic systems

History provides numerous examples of the challenges that arose from the diversity of governmental involvement in the economies of GATT contracting parties and WTO members. International trade law Professor John H. Jackson coined the phrase the “interface problem” to describe the kinds of challenges that can arise from differences in economic and regulatory systems that sit within a single rules-based system (Jackson, 1990; 1997; Jackson et al., 2008). While Jackson was focused on the then-contemporaneous case of market and centrally planned economies in the 1980s, the same types of challenges could stem from a wide variety of differences, such as in terms of the role of state-owned enterprises in an economy, levels of development and regulatory preferences.

Jackson broadly grouped these interface challenges into two categories: first, securing an economy's interest in protecting its market access in another economy, and second, securing an economy's interest in ensuring a level playing field for domestic producers facing import competition in its own or third markets. Some of these challenges were addressed through new rules, while others were addressed through provisions in accession protocols, some of which took a transitory form.

(i) Securing market access commitments and ensuring a level playing field

The first of Jackson's interface challenges on protecting market access gains was already a live issue at the outset of the GATT. When negotiating the International Trade Organization (ITO) that ultimately led to the GATT, the negotiating parties grappled with how to secure market access outcomes negotiated between economies premised on different systems or policy preferences

Figure C.2: Prominence of some issues related to government interventions in markets has increased in WTO discussions (1995-2025)

Source: WTO Secretariat calculations.

Note: The figure shows the average number of keywords per WTO General Council meeting between 1995 and 2025 that relate to differences in economic systems as well as to industrial policy, as recorded in meeting minutes.

(Gerschenkron, 1947; Williams, 1947). In particular, at a time when it was envisaged that the Soviet Union might join, the default approach to structuring market access concessions through reciprocal tariff reductions secured by anti-circumvention disciplines seemed inapposite for centrally planned economies. Similar issues arose when Poland and Romania subsequently sought to accede to the GATT. Not only did they lack tariff systems, but the quantities and sources of their imports were decided by state-run monopolies⁷ (Davey, 1998; Kostecki, 1979). Moreover, even if market access concessions were agreed with the centrally planned economies, the gains could be eroded if their domestic prices were fixed by the state at uncompetitive levels, or if the state-run monopolies sold imports on the domestic market with mark-ups that nullified the expected gains (Jackson, 1989; Davey, 1998). State-run monopolies could also conceivably make purchasing decisions that had the effect of quantitative restrictions or discrimination in favour of certain domestic or foreign suppliers. Although these issues were most visible in relation to centrally planned economies, some aspects also arose in relation to other types of economies that featured a prominent role for state trading enterprises in certain sectors. In more recent times, similar questions were considered during the accession of some WTO members.⁸

The second of Jackson's interface challenges on ensuring a level playing field for domestic producers has arisen primarily in the context of GATT and WTO accessions.

In the GATT accessions of Hungary,⁹ Poland¹⁰ and Romania,¹¹ there was a concern that prices and costs in centrally planned economies may be artificially low, which could mask dumping if those artificially low prices and costs were used to ascertain whether dumping was occurring (Kostecki, 1979). In more recent times, analogous issues arose during the accessions of some WTO members. In the accessions of China, Tajikistan and Viet Nam, for instance, several members noted that certain features of their economic systems could lead to special difficulties in determining cost and price comparability in the context of anti-dumping investigations.¹² Additionally, in some of these accessions, there were concerns around the potential for market disruptions arising from post-accession increases in imports, particularly if such increases were to exceed the economic adjustment capacities of domestic industries in existing GATT/ WTO members.¹³

As some contracting parties' economic systems evolved after the creation of the GATT, a further set of market access-related interface challenges arose. These challenges again pertained

to economies with significant levels of governmental involvement. For example, in 1954, Czechoslovakia (a founding member of the GATT) articulated a concern that centrally planned economies could see their market access gains eroded if their centrally fixed domestic prices were used by other contracting parties when ascertaining whether to apply anti-dumping duties. Czechoslovakia's concern was that centrally fixed domestic prices might be higher than export prices in foreign markets solely as a function of being fixed by the state rather than reflecting the kind of discriminatory pricing behaviours typically associated with "dumping". Czechoslovakia submitted in this regard that "[i]n commercial relations between countries with different economic systems account should be taken of the different functions of individual economic notions in these two systems". Although "dumping" requires a comparison between domestic and export prices, Czechoslovakia pointed to the "incomparability of export and internal prices... being subject to different economic laws in the two different systems".¹⁴

Similar concerns were advanced by India in 1971 over the potential for anti-dumping duties to erode market access for developing economies. This was due to the differing economic policy preferences and constraints of developing economies, which may naturally produce domestic prices that were higher than export prices.¹⁵ In particular, India explained that, in some cases, "the prevailing domestic prices have no direct relationship with the prices at which the goods could be sold by [developing countries] in the international markets", for instance due to "structural imbalances, transport bottle-necks, and restrictions imposed on imports for balance-of-payments reasons" which result in "the prices of domestically produced and imported essential raw materials as well as intermediate products rule at artificially high levels". India likewise explained that "[t]o raise revenue for financing their developmental programmes these countries are required to impose high customs duties and fiscal charges both on imports of raw materials used in the manufacture as well as on finished product". From this perspective, developing economies' market access gains could be eroded if developed economies reflexively treated lower-priced exports from developing economies as being "dumped" without recognizing that their higher domestic prices might simply reflect their developmental status and economic system.

(ii) A variety of approaches to interface challenges

When confronted with the interface challenges described in the previous subsection, GATT contracting parties, and subsequently WTO members, have found various ways to accommodate differences in economic systems.

The institutional approach to accommodating different economic systems within a single framework of rules has often involved identifying pragmatic and case-by-case solutions depending on the particular nature of a given interface challenge.

A novel approach was devised in response to the challenge of how to structure market access commitments for centrally planned economies. This involved guaranteeing minimum import purchases. In particular, already in the earliest drafts of the ITO, the United States proposed that centrally planned economies "shall undertake to import in the aggregate over a period products of the other members valued at not less than an amount to be agreed upon", with "[t]his purchase arrangement... subject to periodic adjustment" (Davey, 1998; Gerschenkron, 1947). The United States took inspiration in this regard from its earlier trade treaty with the Soviet Union, in which market access outcomes were likewise structured in terms of guaranteed minimum import purchases by the Soviet Union in return for tariff concessions on an MFN basis by the United States (Gerschenkron, 1947; Hull, 1935). This proposal was not ultimately included in the GATT, given that no such economies joined at the outset. However, the same basic approach was revived when certain centrally planned economies sought to join the GATT some decades later. Upon acceding in 1967, Poland's market access concessions took the form of a commitment to increase the total value of its imports from GATT contracting parties by not less than 7 per cent per annum, subject to renegotiation from 1971.¹⁶ Romania took a similar approach upon its accession in 1971, albeit committing to increase imports in relative rather than absolute terms.¹⁷ These innovations provided a means of "interfacing" market access concessions between different economic systems. As time passed, however, they were criticized for failing to account for variables such as inflation, exchange rates, balance-of-payments issues and challenges in allocating an aggregate quantitative commitment in line with the MFN principle (Davey, 1998; Kostecki, 1979).

Another approach was devised in response to the challenge of how to secure market access commitments vis-a-vis economies with state trading enterprises. In particular, the GATT contracting parties settled on a framework in which such enterprises were required to abide by certain disciplines to mitigate against the potential erosion of market access outcomes. Specifically, it was decided that such enterprises would abide by rules on quantitative restrictions (Ad Articles XI, XII, XIII, XIV and XVIII to the GATT), refrain from reselling imports at mark-ups beyond the applicable tariff binding, and transact in accordance with commercial considerations and the principle of non-discrimination. In more recent times, additional commitments in this regard have been made in certain accessions to guarantee or expand the right to trade by private enterprises and to refrain from influencing the decisions of state trading enterprises.¹⁸ Some accessions have also involved commitments regarding price controls to alleviate the concern that such controls could impair market access commitments on goods and services.¹⁹

As a further approach, the rules were clarified in a flexible manner to address the concerns that market access could be eroded through anti-dumping measures for economies with different systems. For instance, in relation to its concerns described above, Czechoslovakia proposed amending Article VI of the GATT on anti-dumping,²⁰ but the GATT contracting parties opted instead for an interpretive note that clarified that the existing Article VI of the GATT (“Anti-dumping and Countervailing Duties”) was capable of addressing its concerns.²¹ This interpretive note recognised that Article VI allowed for a different approach to comparing prices (which is central to determining “dumping”) when those prices were formed in different economic systems, specifically when one such price was formed in “a country which has a complete or substantially complete monopoly of its trade and where all domestic prices are fixed by the State”. Following the clarification in the Kennedy Round Anti-Dumping Code that a “particular market situation” affecting price comparability could be a ground to reject domestic prices, India sought to rely on this new possibility to address its own concern, calling for a recognition that the different economic circumstances of developing economies comprised a “particular market situation”.²² This proposal was subsequently joined by a group of developing

economies in the Tokyo Round which sought to have the “special characteristics of their economies” recognized as a “particular market situation”.²³ This eventually led to a decision by the Committee on Anti-Dumping Practices recognising that a different approach to comparing prices might be warranted due to the different economic context in developing economies whereby “governments play a large role in promoting economic growth”.²⁴

Additional “interface mechanisms” were devised to protect domestic producers facing import competition from economies with different systems or policy preferences. The accession protocols of economies with different economic systems included special types of flexibilities allowing for temporary restrictions on imports from these newly acceded economies. For instance, special safeguard clauses were included in some accession protocols to allow GATT contracting parties (and later, WTO members) to restrict imports from acceding parties (or members) if they increased in such quantities as to threaten or cause serious injury. These clauses were included, for instance, in the GATT accession protocols of Poland,²⁵ Romania²⁶ and Hungary,²⁷ and in China’s WTO accession protocol.²⁸ In the case of China, these were described as “transitional safeguards” available for a 12-year period. As another example, in the accession processes of Poland and Romania, the concern that dumping by their exporters could be masked by variations in the way prices form across different systems was addressed by confirming that other GATT contracting parties could use the alternative approach to price comparison, described above, in the interpretive note to Article VI²⁹ (Kostecki, 1979). Even though Hungary did not unambiguously qualify as a country “where all domestic prices are fixed by the State” under that interpretive note, the GATT contracting parties likewise allowed this interpretive note to be invoked in respect of Hungarian imports if “appropriate and not unreasonable” in a given case.³⁰ More recently, analogous clauses addressing issues of price comparability resulting from the absence of market conditions were included in the WTO accession protocols of China, Viet Nam and Tajikistan. Additionally, the “particular market situation” aspect of the Kennedy Round’s Anti-Dumping Code was replicated in the Uruguay Round’s Anti-Dumping Agreement. This concept has since been relied on by various national authorities in cases where the prices

being compared in an anti-dumping investigation have been formed in different economic contexts, thereby impugning their comparability.³¹

(iii) Anti-dumping and “interface methodologies”

The extent to which some members have applied anti-dumping measures in certain contexts can help shed light on the present scope of interface issues. In particular, anti-dumping measures have been widely recognized as an instrument used by some jurisdictions to manage differences among economic systems and economic policy preferences (Jackson, 1997; Du, 2022; Lang, 2019).³² Indeed, in his earliest works on the matter, Jackson (1989; 1990; 1997) identified anti-dumping measures as one of the main interface mechanisms. This is because, as discussed above, differences between the economic contexts in which respective prices are formed can impact their ability to be compared, which in turn can play a role in whether dumping exists and whether anti-dumping measures are justified. As Jacob Viner explained in his seminal text (Viner, 1923), dumping can arise not only from the private pricing decisions of individual firms, but also from differing governmental policy settings that shape how prices are formed, such as higher tariff protection that allows firms to charge higher prices in their home market. Accordingly, when ascertaining dumping, governments may opt to reject the investigated exporters’ domestic sales prices on the grounds of a “market situation”, “non-market economy” considerations, or analogous rationales that prevent a fair comparison with the export price. The extent to which anti-dumping measures rely on these approaches, referred to collectively as “interface methodologies”,³³ may help to shed light on the present scope of interface challenges.

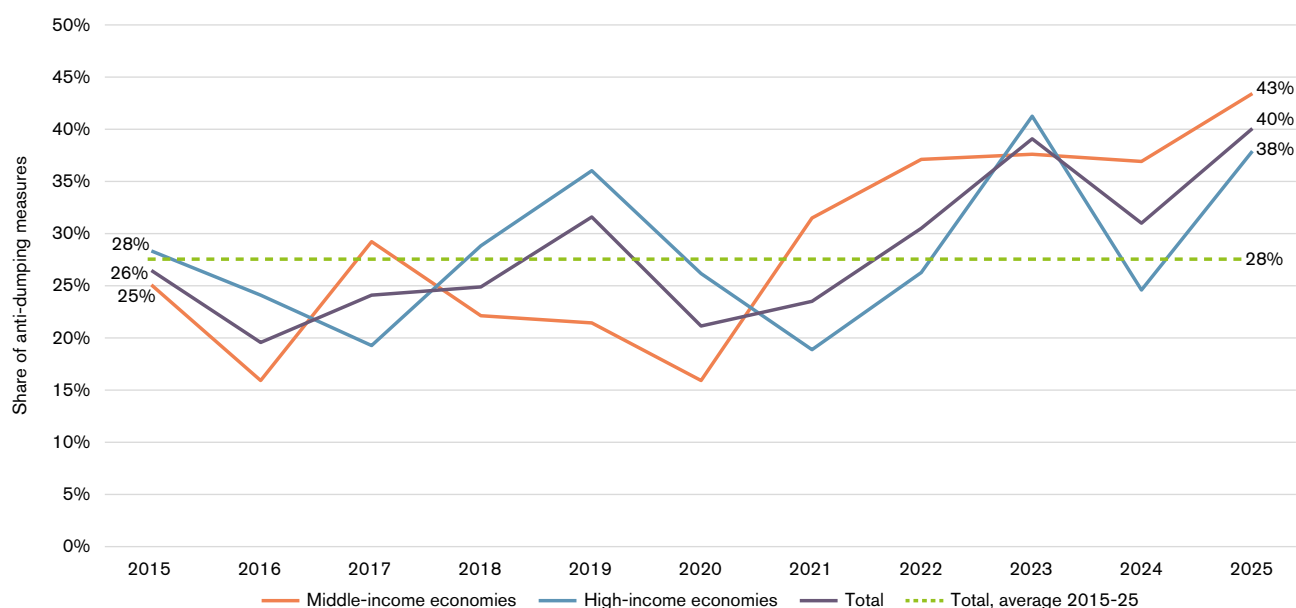
Over the past decade, investigating authorities have relied on an interface methodology in more than one-quarter of anti-dumping investigations. This is illustrated in Figure C.3, in which the analysis covers seven major users of anti-dumping measures (India, the United States, the European Union, China, Brazil, Canada and Australia) that together accounted for almost two-thirds of all such measures imposed over the period analysed (2015 to 2025). Investigating authorities in each of these members at various times ascertained dumping by reference to differences in economic

systems or policy preferences, although the rate at which they did so varied considerably – from less than one-tenth of China’s investigations to more than half of those of the European Union. Figure C.3 also shows an increasing trend in the use of anti-dumping measures based on interface methodologies. Among the seven investigating authorities, the share of measures using an interface methodology rose from around one-quarter in 2015 to more than one-third a decade later. Anecdotally, anti-dumping measures have tended to rely on an interface methodology in situations where investigating authorities found that government policies or support measures affected input costs or price comparability.³⁴ However, there are also instances in recent years in which other phenomena, such as allegedly weak labour standards or the role of economic sanctions, contributed to “market situation” findings.³⁵ In that regard, it is noteworthy that legislative and regulatory initiatives in some jurisdictions have sought to clarify the role of anti-dumping measures in addressing regulatory differences, such as those pertaining to labour and environmental protections.³⁶ It remains to be seen whether the anti-dumping systems of domestic jurisdictions will evolve to account for such regulatory differences in a more routine manner.

(b) Increasing government interventions in markets

Issues related to the cross-border spillovers of government interventions extend beyond those related to the interface challenges discussed in the previous subsection. Broader questions around ensuring a level playing field for domestic producers also arise in relation to subsidies and other policies, or the lack of thereof, in the context of economies with similar economic systems.

The rise of new industrial strategies has led to an increasing use of subsidies, making the discussions about their cross-border effects more central to rules-based cooperation. The rise of industrial policies over the past 15 years has been linked to policy objectives ranging from promoting competitiveness in strategic sectors and accelerating the green transition and digital transformation to, more recently, supply chain resilience and national security. The relevance of these policies has also been discussed in relation to broader macroeconomic outcomes (see Box C.1). While mapping and quantifying industrial policies

Figure C.3: Anti-dumping measures imposed by high- and middle-income economies based on an interface methodology

Source: WTO Secretariat calculations.

Note: The data are based on final anti-dumping determinations of Australia, Canada, the European Union and the United States (high-income economies) and of Brazil, China and India (middle-income economies) that resulted in measures imposed between 2015 and 2025. For this analysis, interface methodology refers to cases in which the investigating authority declined to rely on the exporter's domestic prices or costs for normal value purposes on the basis of findings concerning market situations, non-market economy conditions, significant distortions or comparable rationales affecting price or cost comparability. This category is used for analytical purposes and does not imply a view as to the WTO consistency of any measure.

remains an inherently difficult task, available evidence suggests that subsidies are the instrument most widely used, particularly among upper middle-income and high-income economies (Bown, 2024; IMF, 2025; Fernandes and Reed, 2026). As discussed in Section B.2(c), subsidies are considered a legitimate tool for achieving public policy goals, and WTO rules address only the types of subsidies that have the potential to generate negative cross-border spillovers by tilting the competitive field, either at home or in foreign markets, toward subsidized firms.

Subsidies were recognized early in the GATT as a recurring challenge for the trading system. Unlike tariffs, subsidies could not simply be negotiated product by product, because they often served domestic policy objectives even as they affected foreign competitors. Identifying and compensating the affected trading partners was also recognized as a key challenge, since subsidies could often impact third parties, rendering some countervailing measures ineffective. Jackson (1997)

described subsidies as one of the “perplexities” of international trade law, requiring rules that distinguish between ordinary domestic policy space and measures with harmful cross-border effects. The historical GATT approach was to bring subsidies into view, create procedures for consultation where they harmed trading partners, permit offsetting duties in defined circumstances, and gradually sharpen the legal distinction between subsidies as domestic policy instruments and subsidies that became actionable because of their trade effects.

The Agreement on Agriculture introduced disciplines on domestic support in the agriculture sector, but some longstanding concerns remain. Agricultural Market Support (AMS) commitments were established under the Agreement on Agriculture following the Uruguay Round. Because these commitments were based largely on historical levels of support, members that had traditionally provided substantial trade-distorting support entered the WTO with higher AMS entitlements, while those with

Box C.1: Trade imbalances are persistent

Trade imbalances have long been a concern for policymakers because persistent imbalances potentially lead to demands for corrective trade policy actions. Recent tariff actions – framed in part as efforts to reduce bilateral deficits – may be one example. Notable precedents include trade tensions between the United States and Japan in the 1980s and the global imbalance debates following the 2008 financial crisis. Indeed, empirical research shows that variations in trade imbalances, particularly at the bilateral level, are strong predictors of trade action (Delpeuch, Martin and Fize, 2025).

Trade imbalances *per se* are not necessarily problematic from an economic perspective (Ossa et al., 2025). Sectoral imbalances can arise from specialization: an economy with a comparative advantage in services may run a surplus in services and a deficit in goods, and *vice versa*. Changes in an open economy's savings, investment, borrowing and consumption behaviour would translate into external imbalances, including trade imbalances. From this perspective, trade imbalances are not always signs of dysfunction, but channels through which economies realize the gains from trade across sectors and over time.

While trade imbalances can reflect healthy economic forces, they may also be associated with various domestic and international disequilibria, such as home-grown domestic macroeconomic imbalances, financial debt build-up, market access and industrial policy distortions, or stickiness of exchange rates. If such distortions are not corrected, it may affect confidence in the trading system and the expectation that it will generate fair outcomes and equitable economic benefits.

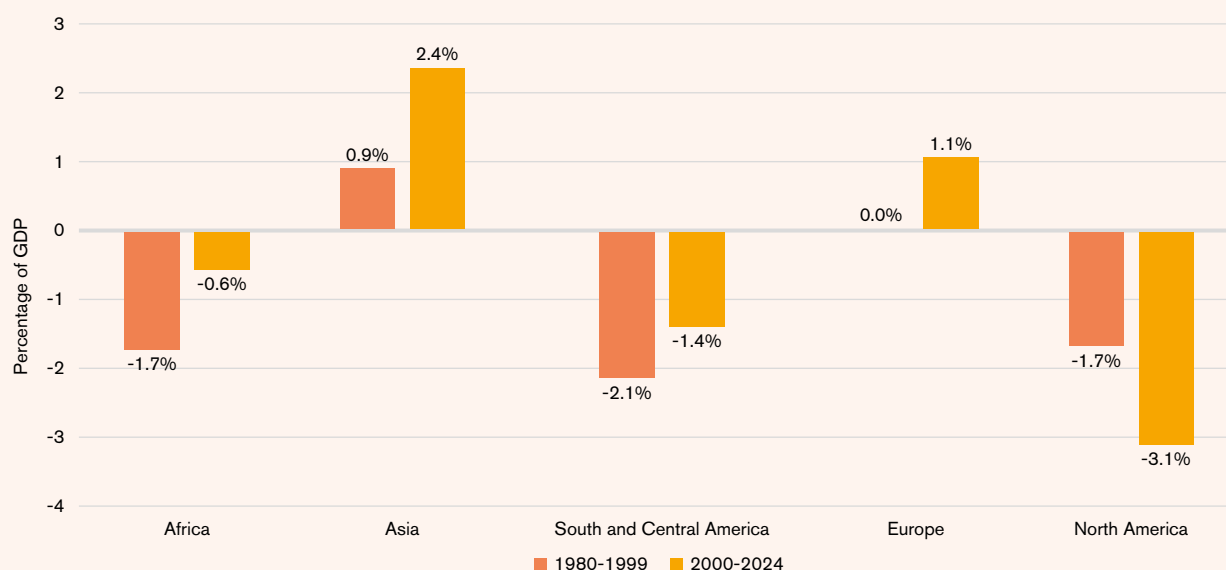
The effectiveness of policy action to address imbalances depends on the identification of their causes, which, at times, can be difficult to disentangle. Imbalances can be driven by a mix of macroeconomic factors (for example, large and sustained fiscal deficits or undervalued exchange rates) and micro-economic factors, including preferences or distortions that affect resources allocation toward production or consumption.

A foundational principle of economic policy design is that each distortion should be addressed with the instrument that targets it most directly. This targeting principle, formalized by Nobel Laureate Jan Tinbergen and widely applied in public economics, suggests that trade distortions are best addressed with trade policy, while macroeconomic imbalances are more effectively handled with macroeconomic instruments. Using one to address the other is not only inefficient but may also have unintended consequences.

The WTO Secretariat has run quantitative simulations to compare the impact of macroeconomic actions (a reduction in savings rate in surplus regions offset by a proportional increase of that savings rate in the deficit regions) relative to that of tariff increases on trade imbalances between regions (Ossa et al., 2025). A conclusion of those simulations is that, while trade policies can, in principle, influence aggregate trade imbalances, macroeconomic policies would play a far more decisive role to correct them. Macroeconomic rebalancing implying a 2.5 percentage point increase in current gross savings-to-GDP ratio in North America, matched by a corresponding decline in the main surplus regions, Asia and Europe, would be sufficient to close actual aggregate trade gaps. However, in this scenario, sectoral imbalances, such as those existing in manufacturing, would remain resistant. Tariffs, on the other hand, can reduce manufacturing imbalances, albeit at the expense of other sectors, and would only impact aggregate imbalances at a fairly high GDP cost, unless savings-investment decisions respond to tariffs.

Addressing persistent trade imbalances (see Figure C.4) would require coherence across policy domains, as well as deeper cooperation among institutions with complementary mandates and a shared stake in global economic stability. This insight was already acknowledged at the creation of the WTO when trade ministers affirmed that, “difficulties the origins of which lie outside the trade field cannot be redressed through measures taken in the trade field alone”.³⁷ In today's interconnected global economy, this insight remains as relevant as ever. Trade policy alone cannot correct policy imbalances and be an answer to non-trade policy concerns. WTO rules do not aim to fix consumption or saving patterns at home, will not solve competitiveness issues of domestic industries, and are not a prime driver of capital flows, all of which influence current account balances. These issues require a mix of cooperation in the macro-financial field and proper domestic policies, which lie outside the remit of the WTO.

Figure C.4: Trade imbalances are persistent



Source: WTO Secretariat calculations based on World Bank data.

Note: The figure shows the current account balance as percentage of GDP by region, averaged over the periods 1980 to 1999 and 2000 to 2024.

limited support at the time relied primarily on *de minimis* allowances. Developing members have argued that this approach resulted in unequal policy space and constrained their ability to expand support programmes aimed at objectives such as food security and rural development. Concerns regarding these asymmetries have since become an important element of the agriculture negotiations.

The Agreement on Subsidies and Countervailing Measures (SCM) strengthened subsidy disciplines, which have become increasingly relevant as the use of these policy instruments has expanded. As discussed in Section B.2.(c) of Chapter B, the SCM Agreement expanded beyond earlier GATT subsidy disciplines by establishing multilateral rules on prohibited and actionable subsidies, the use of countervailing measures, and notification and transparency obligations. These disciplines have been increasingly tested as subsidies have become more prevalent. As discussed in Section B.2.(d) of Chapter B, countervailing measures are the primary instrument to protect domestic producers from subsidized foreign competition in the domestic market. The proliferation of subsidies is thus mirrored in the use of countervailing measures, which has more than doubled in the past decade compared

to the two previous decades (see Figure B.11 in Chapter B).

When subsidies by other members distort competition in export markets, the options for addressing these concerns are confined largely to the WTO's dispute settlement procedure.

The use of this remedy has been relatively limited, especially in recent years as the dispute settlement system has come under strain. This may also reflect a limitation inherent in the WTO's prospective-only remedy: a subsidy can persist throughout the litigation period, and the productive capacity or learning-by-doing it generated may already be locked in before any withdrawal is required, so the remedy can come too late to undo the harm (Grossman and Sykes, 2025).

Achieving transparency on subsidies remains a challenge. Evidence on the scope and scale of government support in industrial sectors remains relatively scarce. One reason for this lack of transparency is the insufficient information disclosed by governments, both in the context of national budgetary processes and in WTO notifications. The share of WTO members that provided mandatory subsidy notifications to the Committee on Subsidies and Countervailing Measures was just 59 per cent between 2015 and 2024, and 77 per cent of

these notifications arrived late. While the average delay has improved compared to the previous two decades, it remains at more than one year on average (see Table B.3 in Chapter B). Suggested causes include limited administrative capacity, reluctance to expose programmes that might invite a dispute, and disagreement over what counts as a notifiable subsidy (IMF et al., 2022). A similar picture emerges in the Committee on Agriculture, where domestic support notifications are the main target of questions raised on individual notifications (see Figure B.16 in Chapter B), suggesting issues with notifications clarity, completeness or quality. The resulting picture is incomplete in both coverage and detail, prompting efforts to fill the gaps outside the notification system, such as the Joint Subsidy Platform³⁸ launched by the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the World Bank and the WTO, which seeks to consolidate information on the nature, size and impact of subsidies.

The failure to address concerns related to subsidies effectively risks fragmenting trade governance and undermining trust in the system. Such concerns may affect confidence in the rules designed to maintain the balance of negotiated commitments while preserving legitimate policy space.³⁹ Where members consider that existing disciplines or remedies do not adequately address perceived spillovers, there is a risk that responses will shift toward unilateral measures or fragmented approaches. Greater transparency, clearer analytical distinctions and continued rules-based cooperation can help manage the risk.

Subsidy disciplines are best addressed at the multilateral level. Unlike tariffs or other market access measures that can be implemented in a discriminatory manner, the benefit of any negotiated reduction in a subsidy is inherently MFN and cannot be confined to the negotiating partner. Only a multilateral forum, in which every beneficiary is represented, can overcome this free-rider problem and preserve the balance of commitments the system was built to protect.

3. The changing nature of trade is creating potential for new spillovers

The increased complexity of GVCs, the rapid digitalization of economic activity, and

growing concerns over climate change and environmental sustainability are altering both the nature of trade and the policies that govern it. As a result of GVCs, trade measures adopted in one economy can generate cumulative or unintended effects along supply chains, amplifying costs and distortions internationally through novel channels. Advances in digital technologies have contributed to an increase in the share of services in total trade by enabling a growing proportion of services to be supplied across borders through the internet. Economic transformation linked to sustainability objectives is moving policy debates away from traditional border measures and toward domestic regulations, standards and industrial policies.

These changes in trade are raising a number of challenges for the WTO. The rise of GVCs has increased the complexity of economic relations, making it more difficult to assess the impact of trade policies. Moreover, the trade in customized inputs underpinning GVCs introduces novel channels through which government policy choices can have cross-border impacts, as parties are locked in a supply relationship with limited options to change trading partners. The increase in the share of services in trade raises an additional challenge because it elevates the importance of General Agreement on Trade in Services (GATS), and the GATS is mostly concerned with negotiating over regulatory measures regarding market access commitments. This raises sensitive issues regarding regulatory approaches that negotiations over GATT tariff commitments have not had to confront, making further cooperation challenging. A similar challenge arises from the link between environmental policies and trade policy as, although there need not to be a trade-off, environmental policies can create new spillovers and alter the balance of market access commitments.

(a) The rise of GVCs increases the complexity of trade policymaking

The world economy is far more deeply integrated than it was at the end of the Second World War. International trade as a share of global GDP has almost quadrupled since the 1950s and today accounts for close to 60 per cent of global economic activity. Trade has become the backbone of intricate cross-border production networks, linking firms' production activities across multiple jurisdictions. In 2024, GVCs accounted for 46 per cent of global trade, not far off their 2022 peak of 48 per cent

(UIBE et al., 2025). Much of this integration reflects technological change – advances in transportation, communications and digital connectivity – but it has also been enabled by predictable trade rules.

(i) GVCs complicate assessment of the impacts of trade policy

The complexity of GVC linkages complicates the impact assessment of trade policies. The wider scope for cross-border and cross-sector spillovers has direct economic impacts, but also makes it more difficult to assess the effects of trade policies. Tariffs do not affect only the sectors to which they are directly applied, they can also propagate through production networks by impacting the competitiveness of firms using imported inputs or supplying downstream industries. The economic concept of “effective rate of protection” (ERP) captures this complexity by measuring the overall effect of the tariff structure on the value-added generated by domestic producers, taking into account both tariffs on final goods and tariffs on intermediate inputs.

In order to compute ERP, it is necessary to account for upstream and downstream production linkages, tariffs applied at all production stages, and substitution patterns. Blanchard, Boice and Johnson (2026) show that once GVC linkages are incorporated, the sectoral effects of tariffs can differ substantially from statutory tariff rates, both in terms of the sectors affected and the magnitude of protection. Figure C.5 illustrates this point by showing the effect of a hypothetical 10 per cent increase in import tariffs on all final goods. The first component of each bar captures the direct protection arising from a sector’s own tariff, while the second component captures additional protection transmitted through GVC linkages. Despite the uniform tariff increase, the effects vary substantially across sectors. Downstream industries that sell a larger share of their output directly to final consumers, such as furniture, motor vehicles, electrical equipment, pharmaceuticals and textiles, experience relatively large direct effects. At the same time, production linkages transmit part of these final-goods tariffs upstream, generating sizeable indirect effects in sectors such as metals, minerals, paper, rubber and plastics, and wood. The figure also shows that tariffs on goods can confer a degree of effective protection on services sectors through their role as suppliers of inputs to goods-producing industries. While the magnitude of ERP varies across economies and tariff scenarios, the analysis

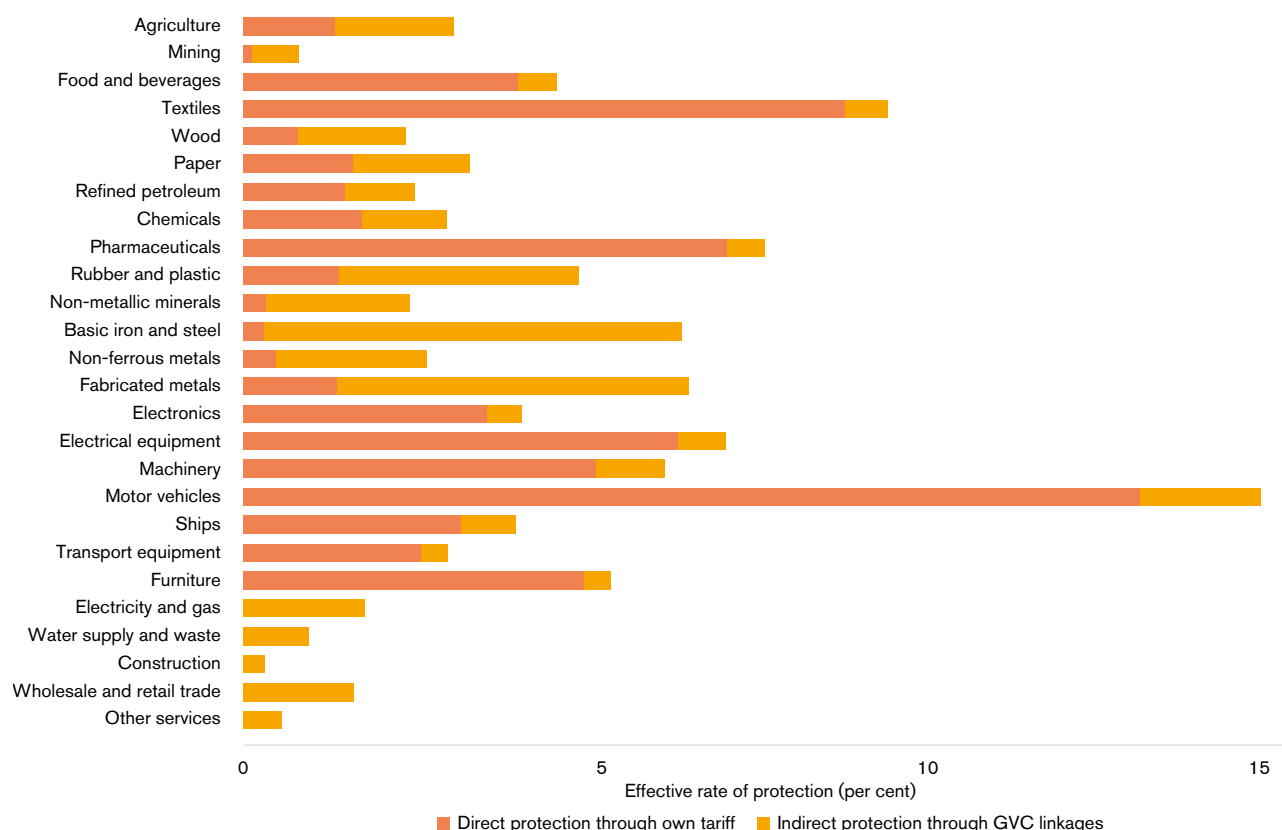
illustrates how complex production networks can reduce the transparency of trade policy effects and thus complicate trade policy design, implementation and negotiations.

(ii) Trade in customized inputs introduces new channels for cross-border policy spillovers

The rise of relationship-specific trade in customized inputs associated with GVCs exposes gaps in existing trade institutions. A growing share of tradable intermediate inputs is no longer standardized but tailored to specific buyers. For example, most components in modern smartphone supply chains are specific to particular brands due to technical specifications. As a result, the prices of a growing share of traded goods are determined bilaterally between specific buyers and sellers, rather than through open-market mechanisms. Such transactions require a high degree of predictability and contractual reliability. However, contract enforcement across borders is typically more complex and less effective than domestic enforcement, which can complicate these transactions and discourage trade in customized inputs.

The relationship-specific nature of customized inputs introduces novel channels through which government policy choices can have cross-border impacts, as parties are locked in a supply relationship with limited access to alternative buyers or sellers. This can impact both the nature and the magnitude of cross-border policy spillovers (Alviarez et al., 2026). For example, export taxes on customized inputs can seem more desirable, as the tax burden will be partially passed on to foreign buyers. Similarly, importing economies may have incentives to distort both border and behind-the-border measures in order to shift bargaining power from foreign input suppliers to domestic buyers of these inputs, raising the question of whether existing multilateral trade institutions, traditionally focused on shallow integration through disciplines on border measures, are sufficient to address the policy spillovers generated by increasingly integrated production networks (Antràs and Staiger, 2012a, 2012b).

Regional trade agreements (RTAs) are playing increasingly important roles in a global economy characterized by complex GVCs. In general, reaching consensus on measures that

Figure C.5: The effective rate of protection can differ significantly from the statutory import tariff rate

Source: Adapted from Blanchard, Boice and Johnson (2026).

Note: The figure shows the decomposition of the effective rate of protection, which measures protection as the shift in demand for a sector's real value added in response to a tariff change, following a hypothetical 10 per cent increase in import tariffs on all final goods, accounting for the effect of GVC linkages.

require coordination of behind-the-border policies is more difficult within the multilateral trading system (Maggi and Ossa, 2021). The opportunities arising from GVCs have encouraged the formations of new RTAs governing an expanded scope of GVC-related areas, such as in cross-border investment or intellectual property (IP) rights, which, in turn, has boosted trade in intermediate goods among the RTA partners (Orefice and Rocha, 2014). This relationship largely reflects the fact that deeper integration helps reduce contractual uncertainty by harmonizing divergent domestic regulations, strengthening enforcement mechanisms and providing credible commitment devices, especially for economies with weaker institutional frameworks (WTO, 2014).

(iii) The firm has become an important organizing principle of global trade

The global economy reflects an increasingly intertwined production and ownership

network. The rise of GVCs has been accompanied by the expansion of organizational production networks, as intermediate trade occurs through both outsourcing to unaffiliated foreign parties and offshoring to affiliated suppliers. Unlike in 1947, when the GATT was first ratified, the firm, instead of the national economy confined by borders, has become an important organizing principle of global trade. According to World Bank data, global foreign direct investment inflows rose from roughly 1-2 per cent of world GDP in the early 1990s to peaks above 4-5 per cent prior to the global financial crisis, before moderating to around 2-3 per cent of world GDP in recent years (World Bank, 2026). Data from the US Census Bureau show that approximately 90 per cent of US exports and imports are conducted by multinational firms (Bernard et al., 2009). Related-party trade, defined as trade by US companies with their subsidiaries abroad, as well as trade by US subsidiaries of foreign companies with their parent

companies, accounted for 49 per cent of US imports and 33 per cent of US exports in 2025 (US Census Bureau, 2026).

The blurring of boundaries between ownership, suppliers and location has led to a wider scope for cross-border policy spillovers. A trade measure imposed on imports from one economy may in practice affect production by firms headquartered in another economy and relying on inputs sourced from a third economy, which may itself include the importing economy. As global supply chains become more geographically fragmented and involve multiple cross-border stages, a single final product may be subject to trade barriers, whether tariffs or non-tariff measures, at multiple points along the production process (Yi, 2003). As a result, changes in trade policy, and the associated adjustments in terms of trade, can generate complex and sometimes unintended effects that propagate through GVCs. These interdependencies may partially offset incentives to impose trade barriers, as policy measures can generate spillovers that feed back to the implementing economy through ownership and trade networks (Baldwin, 2006; Blanchard, 2007; Baldwin et al., 2009; Blanchard, 2010; Blanchard, Boice and Johnson, 2026). Nevertheless, the potential costs associated with trade barriers and fragmentation can be amplified in such an environment.

(b) Digital transformation and the rise of artificial intelligence (AI)

Since the mid-1990s, digital technologies have fundamentally reshaped international trade. Major advances in internet connectivity, computing power and digital technologies have enabled information, services and knowledge to move across borders more rapidly, supporting the rapid growth of digital trade. As a result, digitalization has transformed not only how economies trade, but increasingly what they trade and how they implement trade policy. Services, including digitally delivered services or services produced using AI tools, now account for a growing share of international exchange, complementing and, in some cases, replacing traditional trade in physical goods. As a result, domestic regulations – including rules on data flows, the recognition of professional qualifications and IP – are increasingly shaping conditions of international trade and may create more significant barriers than traditional border measures such as tariffs.

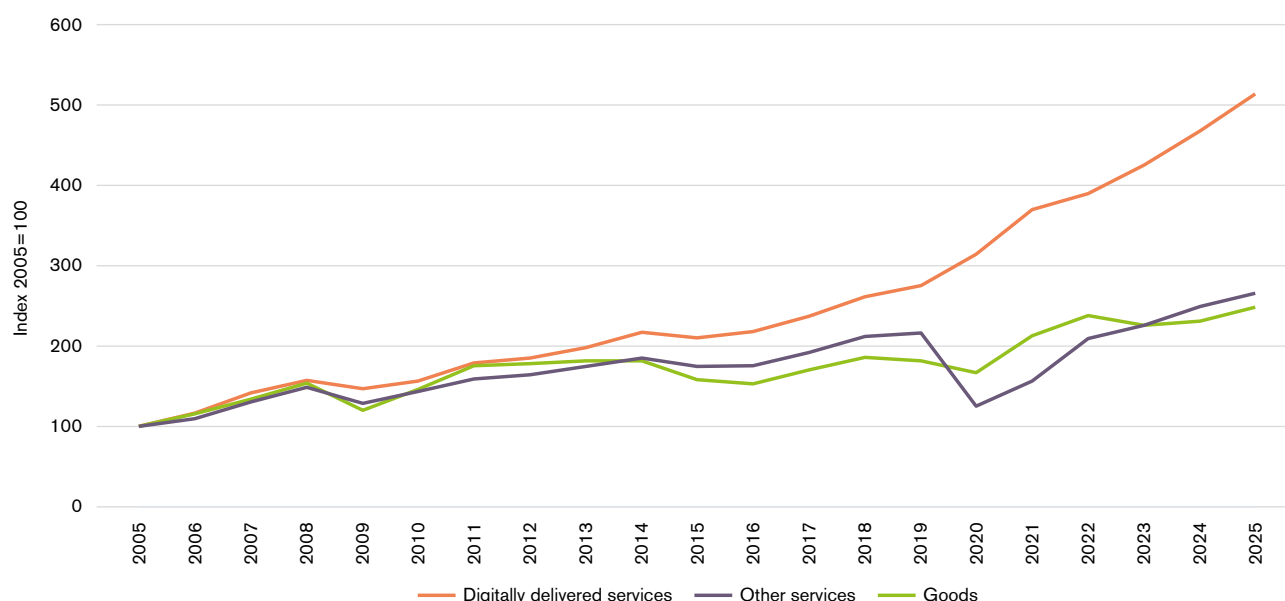
Over the last decade, the share of digitally delivered services in total global trade has steadily increased. By 2025, trade in commercial services reached an estimated 27.6 per cent share of total global trade, its highest level since 2005 when these data become available. This growth has been largely driven by the rapid expansion of digitally delivered services, particularly professional, computer and financial services, which are well suited to electronic cross-border delivery. According to WTO estimates, digitally delivered services, now representing 55 per cent of global services exports, grew by 10 per cent in 2025 alone (see Figure C.6).

The rapid emergence of AI is amplifying this transformation, generating significant economic opportunities while at the same time creating new challenges. AI is expanding the range of services that can be delivered digitally, reshaping production processes across sectors and lowering the costs of creating, processing and transmitting information. Together, digitalization and AI have the potential to raise productivity, stimulate innovation and reduce trade barriers, thereby supporting economic growth and development. WTO simulations project that AI could increase global trade by 40 per cent by 2040, with the largest gains concentrated in digitally deliverable services. Under the most favourable scenario, where technology adoption and policy frameworks converge, AI could add 13.2 per cent to global GDP over the next 15 years (WTO, 2025). At the same time, these technologies can also generate uneven adjustment costs across and within economies, as well as raise privacy, security and competition concerns, requiring governments to strike a careful balance between promoting innovation and addressing legitimate public policy concerns.

(i) The range of policies related to digital trade and AI is growing

As the digital economy expands, governments have responded with a growing range of policies related to digital trade and AI. These include industrial subsidies, export restrictions, data governance measures, privacy rules and cybersecurity requirements. Available evidence shows that digital trade-related policy interventions have increased steadily across all regions of the world. Regulation of cross-border data flows provides a particularly clear illustration of this trend. Figure C.7 illustrates the evolution of policy announcements affecting data flows through regulation, using information drawn

Figure C.6: Digitally delivered services exports see faster growth than goods and other services (2005-25)



Source: WTO Secretariat calculations.

Note: Digitally deliverable services include information and communications technology (ICT), financial services, IP, insurance and other business services.

from the Digital Trade Integration Database, which systematically compiles digital policy measures introduced by governments. The growing number of measures reflects the increasing strategic importance that governments attach to the digital economy.

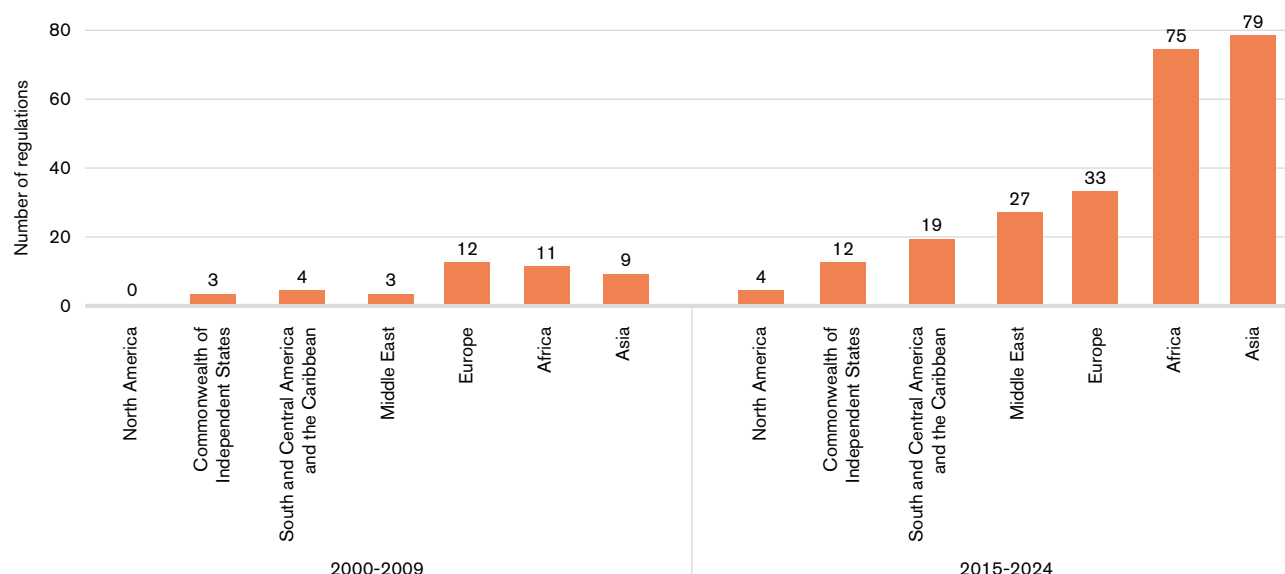
Legitimate domestic objectives may require digital regulation, but differences in national regulatory approaches can also increase trade costs, fragment digital markets and generate new cross-border spillovers. Privacy regulation protects citizens' data. Cybersecurity requirements protect critical infrastructure. Consumer protection rules prevent fraud and manipulation. Yet these policies may also fragment markets by requiring firms to comply with divergent or incompatible national rules, localize data or operations, and duplicate compliance procedures across jurisdictions. They may therefore generate both pecuniary (price-based) and non-pecuniary cross-border spillovers. The pecuniary spillovers operate through trade effects and the terms of trade and can result in an under-provision of openness – an issue that trade agreements could address (Staiger, 2021). The non-pecuniary spillovers arise when digital regulations pursuing objectives such as privacy, cybersecurity or national security create cross-border effects that do

not operate through prices. As the digital economy becomes more integrated, addressing these cross-border externalities increasingly requires international regulatory cooperation.

(ii) Existing policy disciplines and venues for cooperation related to the digital and AI economy are important

WTO members have been able to set up institutional structures to help shape international cooperation on digital trade issues. The Work Programme on Electronic Commerce is one such attempt. Adopted by the WTO General Council in 1998, it laid the groundwork for discussions on trade-related aspects of e-commerce. Although it has not produced concrete recommendations, the Work Programme has provided a forum for members to exchange experiences and explore digital trade issues and their trade implications. In addition, for over 25 years the moratorium on customs duties on electronic transmissions was a central feature of the international trading environment for digital trade and the moratorium decision was replicated in several RTAs and plurilateral initiatives. At the 14th Ministerial Conference in Yaoundé in 2026, WTO members

Figure C.7: The number of regulations relating to cross-border data flows has increased



Source: WTO Secretariat calculations based on Digital Trade Integration database (<https://dti.eui.eu/>).

were unable to reach consensus on extending the moratorium and the Work Programme.

The WTO framework nevertheless continues to provide an important foundation for governing digital trade, primarily through the GATS. There is broad consensus that electronic commerce falls within the scope of WTO agreements, even when there is no specific reference to e-commerce or digitalization. The GATS is particularly relevant because many services can be supplied electronically and because a number of services sectors provide the infrastructure that enables digital trade. The GATS is “technology-neutral”,⁴⁰ and therefore covers the supply of services traded through electronic means, as through all other technological means. It contains both general obligations – MFN and transparency – and specific commitments on market access and national treatment.

Beyond the GATS, multilateral rules for trade in goods and IP are also relevant for digital and AI-related trade. The Information Technology Agreement (ITA) and its expansion facilitate access to the technology that underpins digital trade by eliminating tariffs on a broad range of information and communications technology (ICT) products. The TFA encourages the use of digital technologies to expedite customs procedures. The Technical Barriers

to Trade (TBT) Agreement promotes regulatory convergence and mutual recognition to facilitate trade in AI-related goods. The TRIPS Agreement and the multilateral IP system that it has created provide the legal framework in which IP rights support markets by making intangible assets tradable, licensable and protected internationally. Together, these agreements help create the conditions under which digital trade can develop across borders.

Building on the existing WTO framework, in 2024 a group of WTO members concluded negotiations of the Agreement on Electronic Commerce (ECA). This agreement establishes baseline digital trade rules to address fragmentation in digital trade regulation by creating common disciplines that facilitate cross-border digital trade, foster an open digital environment and promote trust in online transactions. Its provisions include commitments related to electronic transactions frameworks, paperless trading, online consumer protection and protection of personal data, and a permanent ban on applying customs duties on electronic transmissions. Although consensus on incorporating the ECA into the WTO framework has not been reached, the agreement demonstrates that there is interest in addressing some of the regulatory challenges posed by digitalization.

(iii) The rapid evolution of the digital and AI economy is outstripping existing WTO disciplines

Although WTO agreements remain relevant, the rapid evolution of the digital and AI economy exposes areas where existing disciplines provide only partial guidance. These new challenges relate to the need both to address new pecuniary and non-pecuniary cross-border spillovers and to enhance cooperation to capture coordination gains.

One challenge is to capture the potential gains from further cooperation by extending the coverage of digital trade-related commitments.

The examination of specific commitments under the GATS in sectors relevant to e-commerce (i.e., digitally enabled and enabling services, as well as services sectors like distribution that are relevant for the online sale of goods) show that members have so far made uneven use of GATS commitments to reduce trade barriers or to bind existing levels of openness through commitments. It is important to note that most services commitments reflect negotiations concluded almost 30 years ago, before e-commerce became a major component of the global economy. At that time, services were predominantly traded via commercial presence (mode 3 of the four modes of supply of services under the GATS);⁴¹ since then, the digital transformation has increasingly been making cross-border service trade (mode 1) possible (WTO, 2019). This gap in the coverage of e-commerce in services has been opening up opportunities for new potential reciprocal market access bargaining.

Another challenge is to realize the gains from deeper integration, by cooperating on complex regulatory issues at the multilateral level. As digital trade increasingly depends on domestic regulatory frameworks governing data flows, privacy, cybersecurity, consumer protection and digital competition – issues that often entail important cross-border non-pecuniary spillovers – effective international cooperation increasingly requires coordination over domestic regulation rather than simply reducing border barriers. Interoperability is relevant for data governance, e-transactions and e-payments and digital trade facilitation (e.g., through single windows, or single data entry points for traders). Negotiating over regulations is qualitatively more complicated and politically more sensitive than negotiating tariff schedules, because it touches

directly on domestic policy, potentially raising issues of sovereignty, in ways that border measures may not (Staiger and Sykes, 2021).

A further challenge is to address digital and AI-related inclusiveness issues that require greater coherence between trade policy and other policy domains.

AI has important implications for inclusiveness, understood as the ability of economies and individuals to participate in and benefit from trade. Unequal access to digital infrastructure, skills, data and computing capacity can affect both the distribution of trade gains and the practical value of existing trade commitments. Furthermore, because of network externalities (whereby a product or service becomes more valuable as more people use it), digital markets may be more prone to global “winner-take-most” dynamics, where a single platform captures nearly the whole market. This can create new cross-border policy spillovers, as the conduct and regulation of large digital firms in one jurisdiction can affect market conditions in others through these network externalities. The global reach of these firms, and the implications for market access of how competition law and digital regulation are applied to them, have therefore made competition-related policies increasingly relevant to trade (WTO, 2018; 2025). These challenges matter for the WTO's ability to deliver broad-based benefits, but they cannot be addressed through trade policy alone. As discussed in the 2025 *World Trade Report* (WTO, 2025), such challenges require a “trade and” approach that strengthens coherence between trade policy and policies on competition, innovation, education, infrastructure and labour market adjustment.

The rise of AI is itself intensifying some of these challenges, while also creating a number of new challenges. These new challenges range from interoperability and accountability to strategic issues.

First, as with other technologies, interoperability problems arise when AI models, platforms, data systems and applications cannot communicate or exchange information with each other or be easily substituted for one another. This makes it harder to combine data or transfer it between systems. In addition, economies may have different documentation, testing, risk management and conformity assessment requirements, which may oblige firms to repeat

essentially similar assessments for each jurisdiction. Economically, limited interoperability can produce vendor lock-in, i.e., once a firm has adapted its data, software, workforce and business processes to one platform, switching providers becomes costly. This can weaken competition, reinforce the position of large incumbent platforms and make it harder for smaller firms or foreign suppliers to enter the market. It can also fragment markets. Developers may have to produce separate versions of the same service for different platforms or jurisdictions, raising fixed costs and preventing AI services from scaling internationally. A lack of interoperability can also contribute to the risk of over-dependence on a single source for economies that are importers of AI services. International standards can help to promote interoperability by providing common specifications for data quality, system lifecycles, evaluation and governance, thereby reducing trade barriers without requiring economies to adopt identical regulations. The WTO is not a standard-setting organization, but it can help with coordinating policies across jurisdictions (see Section B.2 in Chapter B).

Second, AI creates new IP challenges. Existing TRIPS disciplines were developed around human authorship and invention and do not resolve questions relating to ownership of AI-generated outputs, the use of copyrighted material in training datasets or the patentability of AI-assisted discoveries.

Third, AI creates new accountability issues. AI safety and algorithmic accountability are emerging regulatory priorities with genuine cross-border dimensions. An AI system developed in one jurisdiction can cause harm across many others simultaneously and continue to evolve autonomously after deployment, creating non-pecuniary spillovers that are difficult to attribute, contain or address (WTO, 2025).

Finally, AI has raised the perceived economic and security value of the sectors that contribute to its development – especially semiconductors, computing infrastructure and critical minerals. AI-specific industrial policy, such as large-scale public subsidies for AI development, or export controls of advanced semiconductors and chips, represents a new dimension of strategic trade intervention.

Efforts at the regional level offer a partial response to these challenges. RTAs and digital

economy agreements provide example of cooperation for digital rule-making and AI cooperation. Since January 2020, about 60 agreements containing e-commerce or digital trade provisions have been signed.⁴² Digital trade commitments have evolved from a few provisions scattered throughout RTAs into standalone substantive chapters, separate from the services and investment chapters, including specific provisions requiring cross-border data flows for digital trade, with exceptions for privacy, security or public policy objectives, and exemptions, most notably for government procurement. In addition, increasingly agreements include provisions on aspects that transcend traditional digital trade rule-making, such as AI, competition policy related to the digital economy, digital identities and digital inclusion, as well as fintech (i.e., digital payments, online banking and investment tools) and lawtech (i.e., digital tools that apply to the delivery of legal services) cooperation, standardization, interoperability or mutual recognition regarding electronic means (Burri, Callo-Müller and Kugler, 2024). AI-specific provisions remain relatively rare. As of September 2025, only 2 per cent of RTAs and digital economy agreements incorporated explicitly AI-related provisions (WTO, 2025). These provisions generally take the form of best-endeavour clauses (i.e., which require parties to do everything possible to achieve the relevant result) or recognition statements encouraging the development of governance frameworks to promote the trusted, safe and responsible use of AI (WTO, 2024b).

It is important to note that these regional initiatives appear to complement rather than replace multilateral cooperation. The OECD Index of Digital Trade Integration and Openness (INDIGO), covering 193 economies since 2000, estimates that the world economy is just 8.5 per cent of the way toward what could be considered full global digital trade integration and openness (OECD, 2026). Most existing integration stems from multilateral WTO initiatives – including the Telecommunications Reference Paper,⁴³ the Information Technology Agreement,⁴⁴ the e-commerce moratorium (which expired in 2026)⁴⁵ and the Trade Facilitation Agreement (TFA)⁴⁶ – while RTAs account for only around 10 per cent of integration. This suggests that multilateral cooperation remains the main driver of digital trade integration. Rather than competing with multilateralism, regional and plurilateral initiatives could therefore reinforce multilateral discussions

by providing practical experiences that could inform broader rule-making.

(iv) The significant costs of uncoordinated digital trade and AI policies

The benefits of fostering cooperation on digital- and AI-related trade issues are substantial. Cooperation can reduce policy uncertainty and avoid the costs of fragmented digital markets. Greater technical and regulatory interoperability can lower the costs of adapting data, models and applications to different platforms and jurisdictions, reduce vendor lock-in, and make it easier for firms to switch providers or operate across markets. International cooperation on data privacy could also help to prevent a race to the bottom through regulatory competition, in which governments weaken domestic regulation to attract or retain economic activity (Goldfarb and Trefler, 2019). Moreover, privacy, cybersecurity and other digital regulations can generate non-pecuniary cross-border spillovers that do not operate through prices and are distinct from the pecuniary spillovers underlying regulatory competition (Bagwell and Staiger, 2001), creating additional grounds for cooperation over regulatory measures. Cooperation could also help to contain costly subsidy races in strategic sectors and reduce the risk of tit-for-tat restrictions on critical minerals, semiconductors and other essential inputs. By improving transparency, promoting interoperability and managing strategic dependencies collectively, economies could strengthen resilience and preserve legitimate regulatory objectives without unnecessarily distorting competition, fragmenting markets or intensifying geopolitical tensions.

The economic costs of insufficient international cooperation are measurable. Recent evidence illustrates both the potential gains from policy coordination and the costs of fragmentation. A joint OECD-WTO report (2025) finds that global approaches combining open data flows with appropriate safeguards could increase global exports by 3.6 per cent and GDP by 1.8 per cent. The gains are particularly meaningful for low-income and lower middle-income economies, exceeding 4 per cent of their GDP. By contrast, full data fragmentation (“data autarky”) could reduce global GDP by 4.5 per cent and exports by 8.5 per cent, while unrestricted data flows without safeguards would also lower global GDP and exports by eroding trust. Fragmentation along geoeconomic blocs would likewise impose significant economic

costs, exceeding 1 per cent of global GDP. These findings suggest that global solutions to data flow issues balancing openness with safeguards yields the strongest economic outcomes.

The contrast between the potential economic benefits of cooperation and the institutional difficulty of achieving consensus illustrates one of the defining governance challenges of the digital economy. Preserving the benefits of openness while addressing the cross-border spillovers generated by digital and AI-related unilateral policies requires that international cooperation moves beyond mere commitments in traditional border measures. Digital transformation and AI innovation and development require cooperation over domestic regulation. Consensus-based negotiations among a diverse WTO membership become more complex. But this complexity does not eliminate the need for multilateral cooperation, as the pecuniary and non-pecuniary spillovers that digital and AI transformation entail are global.

(c) Environmental transformation and the transition to net zero emissions

The importance and scope of environmental policy have changed dramatically since the WTO was established in 1995. Environmental policy actions have grown in response to the triple challenge of climate change, pollution and biodiversity loss. Climate change has gained prominence on WTO members’ policy agendas due to rising awareness and fast-approaching emission reduction targets under the Paris Agreement (OECD et al., 2024). As of 2025, over 90 per cent of the 195 parties to the Paris Agreement have adopted quantified emission reduction targets, and more than 95 economies have announced net zero pledges, covering over 85 per cent of global energy-related CO₂ emissions. Such pledges have translated into concrete policy measures. For example, in 1995 the share of global greenhouse gas emissions (i.e., emissions of gases that trap heat in the atmosphere, such as CO₂) covered by either emission trading or carbon taxes stood at 0.7 per cent, while by 2025 this share had climbed to 28 per cent.⁴⁷

Global emissions remain far above reduction targets, and so environmental policy actions are expected to increase in the future. Although many economies have adopted increasingly ambitious intermediate and long-term targets on

climate mitigation, the International Energy Agency (IEA) estimates that current policies and projected emissions trajectories remain significantly off track from pathways consistent with limiting global warming to no more than 1.5°C by reducing greenhouse gas emissions (IEA, 2025) (see Figure C.8 for three possible global warming scenarios).

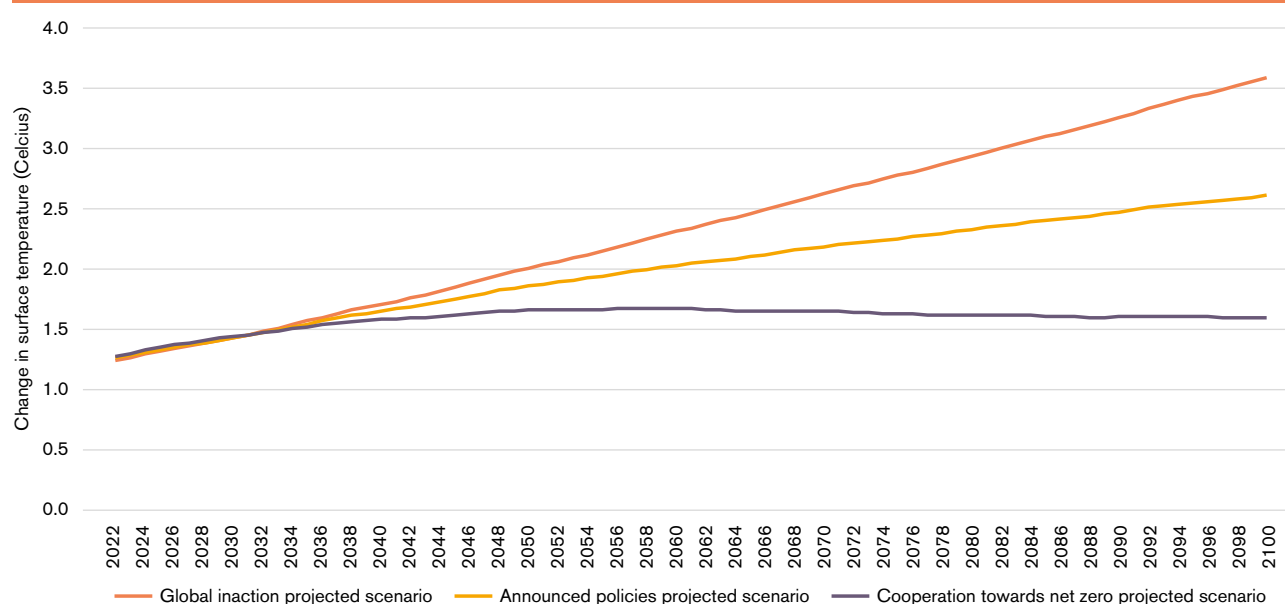
As environmental policy actions have increased, so have the number of environment-related notifications at the WTO. WTO agreements require members to notify the WTO when they adopt new measures or change existing ones that could affect trade. From 2009 to 2024, members notified more than 7,000 climate-related measures to the WTO, with the number of measures increasing by 40 per cent after 2017. Roughly two-thirds of these measures pursue the objectives of energy conservation and the transition to alternative and renewable energy (see Figure C.9). WTO members rely on support measures to advance their climate-related objectives along with technical regulations and conformity assessment procedures. Export and import restrictions are also used. The economic sectors mostly affected by these measures are manufacturing, energy, chemicals and agriculture.

(i) Interaction between environmental and trade policies

WTO rules prevent the misuse of environmental measures for protectionist purposes while preserving policy space for environmental action. As is the case with other policies implemented in pursuit of legitimate societal objectives, WTO members remain free to adopt environmental measures at the level of protection they consider appropriate, even when such measures may significantly affect trade, provided in particular they are not applied in a manner that results in arbitrary or unjustifiable discrimination or constitutes disguised protectionism. WTO jurisprudence has consistently confirmed members' right to pursue legitimate environmental objectives, while ensuring that such measures remain coherent, proportionate and non-discriminatory (WTO, 2020a). In this sense, the WTO framework preserves policy space for environmental action and prevents the misuse of environmental measures for protectionist purposes, thereby supporting predictability and cooperation in international trade relations.

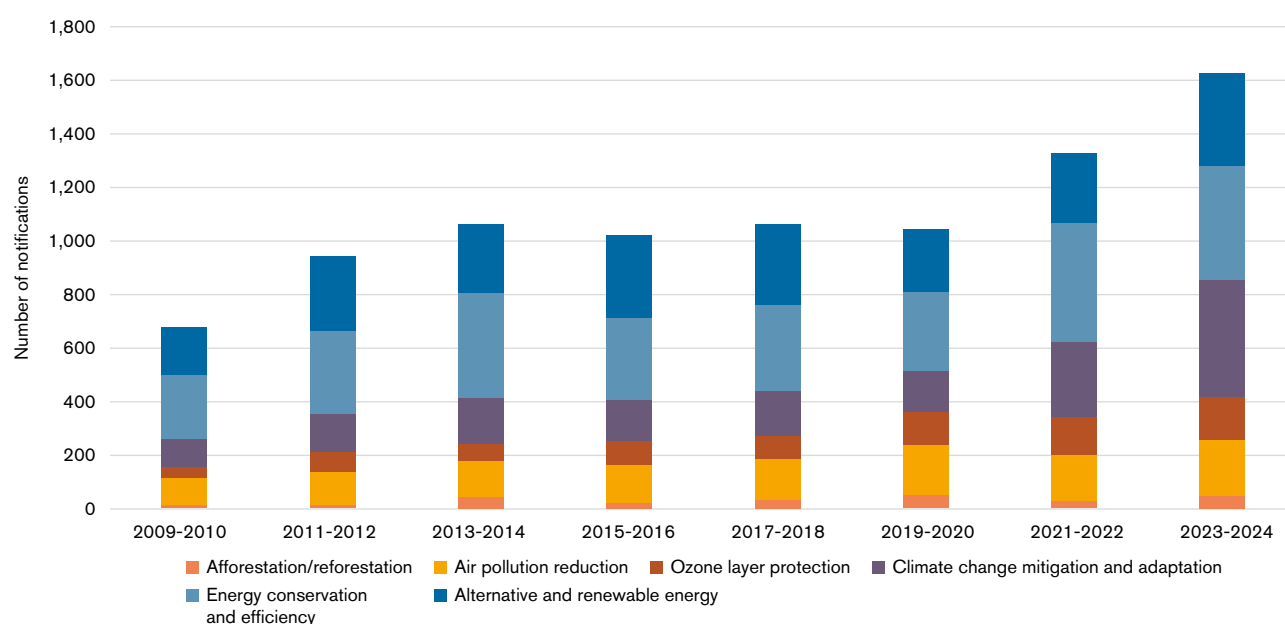
Fundamentally, both trade policy cooperation and climate change policies aim at addressing

Figure C.8: Without international cooperation, global warming is projected to continue increasing



Source: Adapted from Bekkers, Kalachyhin and Teh (2025).

Note: In the "global inaction" projected scenario, economies do not take further action toward reducing their CO₂ emissions. In the "announced policies" projected scenario, economies independently undertake actions to mitigate their carbon emissions, resulting in varying levels of climate ambition across nations. In this scenario carbon prices are set at a level that targets emission reductions announced in the nationally determined contributions until 2030, after which carbon prices follow a linear growth trajectory until 2050. In the "cooperation towards net zero" projected scenario, economies cooperate to tackle climate change and reach net zero emissions by 2050.

Figure C.9: Environment-related notifications to the WTO have more than doubled

Source: WTO Secretariat calculations based on WTO Environmental Database.

Note: The data are based on environment-related notifications submitted by WTO members pursuant to the transparency requirements of the WTO agreements. Data have been aggregated into two-years periods to reduce year-on-year fluctuation caused by the biennial nature of notifications of the Agreement on Subsidies and Countervailing Measures.

cross-border spillovers. However, the nature of these spillovers differs importantly across the two domains, and, if policies are uncoordinated, they can act at cross purposes. As discussed previously, WTO rules exist in large part to guide governments away from policy choices that may harm their trading partners. In a similar way, climate policies are an effort to guide choices that ultimately determine the carbon footprint of economic activity. A key difference is that WTO rules primarily address pecuniary (price-based) spillovers arising from trade policies, whereas carbon emissions into the atmosphere create a negative spillover that is not automatically transmitted through prices (a non-pecuniary spillover). Therefore, there need not be tension between these frameworks, even if in some cases, such as global trade in electric vehicles, policymakers have to deal with a confluence of environmental, trade policy and other spillovers (Barwick et al., 2026; Staiger, 2022; see also Becko and Costinot (2026) for a unified treatment of these spillovers in the context of trade agreements).

Some measures that advance environmental objectives may generate positive global environmental spillovers as well as reshape

trade flows and affect competitiveness. The scale of the gap between actual and desired emissions, and other broader environment goals, implies that economies will be required to implement a wide range of transformative policies impacting almost all areas of economic activity to achieve these goals (UNEP, 2023). The policy mix includes environmental tax and pricing systems, regulations and standards, trade facilitation, subsidies, tariffs and quantitative restrictions (see Box C.2). Some of these policies, especially when applied on a large scale and by large economies, may have trade effects that create negative cross-border spillovers and alter the value of WTO market access commitments. For instance, production subsidies to support green technologies can generate positive spillovers by increasing the innovation and adoption of green technologies and contribute to lower global greenhouse gas emissions (WTO, 2023c). At the same time, however, subsidy-driven shifts in trade patterns can create systemic negative spillovers that give rise to frictions between trading partners, particularly when subsidies are perceived to affect competitiveness, technological leadership or the fairness of market conditions. Similarly, climate policies operationalized through

price-based and other measures, such as regulations and standards, can be globally beneficial by helping internalize the negative externalities from greenhouse gas emissions. However, if certain jurisdictions adopt more ambitious climate measures than other jurisdictions, this can alter the balance of market access commitments.

Moreover, carbon taxes can give rise to carbon leakage problems and trigger carbon border adjustments. The basic economic logic of the carbon leakage problem and attempts to address it with border carbon adjustments can be understood in two steps with a simple example. First, an economy imposes a carbon tax on its domestic producers at a level calibrated to reach its emission reduction objectives over a set timeframe. This tax has no

direct effects on foreign exporters' market access to this economy, because the tax is imposed only on domestic producers. However, the carbon tax may distort the balance of market access commitments indirectly, as it can cause domestic production costs to increase relative to the production costs of foreign exporters, with the latter becoming more competitive in the economy's market. Hence, the imposition of this carbon tax worsens the conditions of competition for domestic producers relative to foreign exporters, and can potentially lead to carbon leakage, especially if carbon taxes are absent in other jurisdictions and carbon-intensive production moves from this economy to other economies with low carbon taxes (WTO, 2023c). Second, the economy imposing a carbon tax may react to the loss of competitiveness

Box C.2: Environmental policy instruments

A growing number of economies are using trade-related policies to address climate change.

Economies can draw upon a mix of different policy instruments, including environmental tax and pricing systems, regulations and standards, subsidies and quantitative restrictions (Stiglitz et al., 2017). The experiences of WTO members show that a range of policies can be relevant, spanning trade facilitation, regulations, government procurement, services and tariffs, amongst others (WTO, 2023b; 2024a).

Carbon pricing, which places a cost on emitting greenhouse gases, is typically the most cost-efficient solution, as a single carbon price incentivizes economic agents to adopt the emissions-reduction solutions with the lowest abatement cost (i.e., the cost of an intervention that can reduce emissions by one tonne) until marginal abatement costs are equalized. Carbon prices can be introduced directly via a carbon tax or indirectly through an emissions trading scheme.

The second approach – regulations and standards, or non-price-based measures – is widely used to advance environmental goals, including to overcome market failures and deal with circumstances where responsiveness to price signals is weak. Effective regulations and standards create demand signals for low-emissions materials and products, helping to scale green markets and supporting green procurement (OECD, 2022). WTO notification data reveal that regulations and standards are the most frequently applied type of trade-related measure used to address environmental objectives.⁴⁸

Complementary and framework policies are the third component of a comprehensive policy mix. These include policies that provide enabling conditions by lowering the economic and social costs of decarbonization. They fall into two broad categories: measures to accelerate the development and deployment of new green technologies, such as subsidies and upgrading infrastructure networks; and policies to address the distributional effects of climate policies, such as revenue recycling, social transfers and just transition programmes. With revenue recycling, the proceeds of policies like carbon prices can be rebated to the public through income transfers and social supports. Just transition policies can support the retraining and reallocation of workers in shrinking carbon intensive industries into new industries.

Subsidies designed to promote environmental policy goals are expected to grow substantially and have the potential to shape global trade. Estimates place the scale of government support for renewable power among G20 economies at over US\$ 160 billion in 2023. This is expected to double by 2030 (Laan et al., 2024). According to OECD data, the production of solar cells and modules was one of the most subsidized sectors over the period 2005-24, with subsidies amounting to over 3 per cent of firm revenue (OECD, 2026).

by implementing a border carbon adjustment that extends its carbon tax regime to imported products and eliminates the risk of carbon leakage. The economy might also exempt its exported products from the regime, in effect converting the carbon tax on its producers into a carbon tax on its consumers.

Discussions in WTO bodies illustrate a wide range of views among members on border carbon adjustments and their impact on trade.

For example, some members consider that border carbon adjustment measures are trade-restrictive and run counter to WTO principles, and some also mention the need to consider the principles of the United Nations Framework Convention on Climate Change (UNFCCC). Other members consider them to be legitimate policy tools to address carbon leakage (WTO, 2023b).⁴⁹

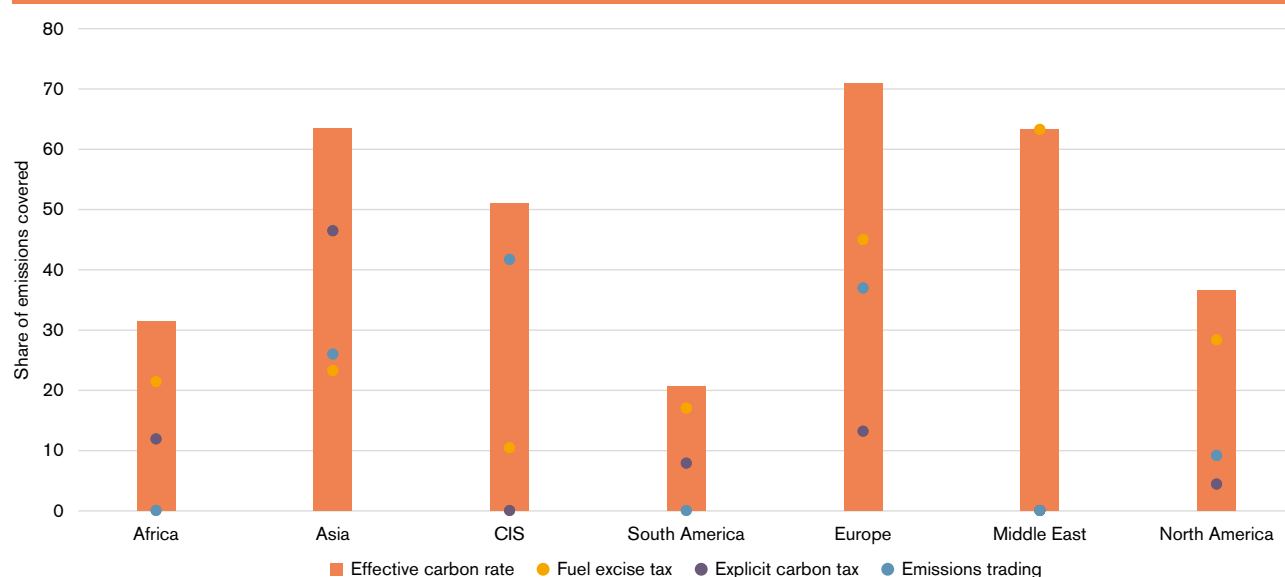
Implementing border carbon adjustment measures also involves a host of design questions. Designing a border carbon adjustment mechanism raises important questions on sectoral coverage, country coverage and how to measure emissions, as well as how to account for carbon mitigation policies in foreign economies (WTO, 2022c). The lack of information on the carbon intensity of production is a practical barrier to implementing border carbon measures while also satisfying MFN

commitments. Information gaps could arise in relation to price matching of carbon costs or carbon content matching of production emissions. In both cases, there is a wide array of economy-specific and product-specific prices that could make up a border carbon adjustment tax schedule. This reflects the wide range of carbon intensities of production, explicit carbon taxes and effective carbon rates across economies, all of which also vary over time (see Figure C.10). However, the potentially significant difficulties relating to primary data collection in many economies, especially in developing economies and LDCs, could result in reliance on average economy-level calculations. In turn, such an approach could be to the disadvantage of more environmentally efficient producers located in relatively more carbon-intensive economies where firm-level data cannot easily be demonstrated or verified. As a result, products with comparable carbon content, but originating from different economies, could face different import charges.⁵⁰ Equally, this information barrier could lead to differential treatment of domestic and foreign goods of the same carbon intensity.

(ii) Environmental policy and transparency at the WTO

Trade and environmental sustainability have been embedded in the WTO's architecture and work since its establishment. The preamble to

Figure C.10: Carbon pricing policy instruments and their coverage vary by region



Source: Adapted from OECD (2025a).

Note: The Effective Carbon Rate (ECR) is the sum of fuel excise taxes, carbon taxes and tradable emission permits.

the Marrakesh Agreement establishing the WTO refers to “the optimal use of the world’s resources in accordance with the objective of sustainable development” as a central principle, while the ministers in Marrakesh also established the Committee on Trade and Environment (CTE) to examine the relationship between trade and environmental policies. Article XX of the GATT (“General Exceptions”) allows WTO members to seek the justification of GATT-inconsistent measures if these are necessary to protect human, animal or plant life or health, or if the measures relate to the conservation of exhaustible natural resources.

The regular work of the CTE, as well as the work of member-led initiatives, seeks to respond to the challenges and opportunities that may arise from the interaction of environmental and trade policy. The CTE focuses on the impact of trade policies on the environment and of environment policies on trade through multilateral dialogue and cooperation. One example from the recent work of the CTE is in the area of methodologies for measuring emissions that are the basis for trade-related climate measures, such as border adjustment mechanisms, green procurement or product labelling. Since 2025, the CTE has been working to promote transparency and interoperability and to address development aspects of trade-related climate measures and carbon standards.⁵¹ A voluntary information-sharing exercise on trade and climate measures was launched on a pilot basis in 2026. Other topics of discussion include energy transition, sustainable agriculture and the transfer of environmental technology. The TBT Committee and the CTE are platforms to support regulatory cooperation in this area, including on topics like decarbonization standards, lithium-ion batteries, climate change and buildings, clean energy and biofuels. Since 2021, and as a complement to the CTE, a series of member-led environmental initiatives – namely, the Dialogue on Plastics Pollution and Environmentally Sustainable Plastics Trade (DPP), the Trade and Environmental Sustainability Structured Discussions (TESSD), and the Fossil Fuel Subsidy Reform (FFSR) initiative – have addressed specific topics at the intersection of trade and environmental protection. Most recently, in 2026, the WTO Agreement on Fisheries Subsidies, the first WTO agreement with sustainability at its core, came into force.

(iii) Aligning trade and environmental policy

Trade policies can be designed to promote trade that helps achieve environmental goals. Currently, tariff and non-tariff barriers tend to be

lower in carbon-intensive industries than in clean industries (Shapiro, 2021), and indeed, carbon-intensive goods tend to be traded more than less carbon-intensive ones (Le Moigne and Ossa, 2021). Members have a range of opportunities to reorient their trade policies to promote cleaner production and consumption (WTO, 2023b; 2023c). Some WTO members are already using trade policy tools like tariff rebalancing or trade facilitation measures as a means for achieving their climate targets.

International trade can have direct benefits on the environment by improving efficiency.

International trade can increase the scale and diffusion of environmental technology, as well as facilitate indirect benefits by improving incomes and living standards, which increase the resources that can be used to support environmental goals and adaptation (Copeland and Taylor, 2004; WTO, 2023c). Reaping the benefits of trade in supporting environmental goals depends in part on stemming further fragmentation related to trade and environmental policies.

A reorientation of global production in favour of the least carbon-intensive producer would reduce global emissions and could be greatly facilitated by a well-functioning trading system.

An important benefit would come through a “green comparative advantage”, whereby economies’ trade specialization re-orientates to include their carbon intensity of emissions with production expanding in the least carbon-intensive locations. Estimates indicate that the environmental gains from trade account for over 10 per cent of the greenhouse gas emissions reductions brought about by a global carbon tax (Le Moigne et al., 2026). Some developing economies and LDCs with a strong renewable energy potential and critical mineral endowments are well positioned to leverage a “green comparative advantage” and integrate into emerging decarbonized value chains (WTO, 2023). Conversely, trade policy fragmentation would mute benefits from green comparative advantages and the associated inclusion opportunities.

International cooperation around emission measurement standards, including within the WTO framework, can help to minimize trade costs associated with diverse climate policies.

Regulatory cooperation-building on WTO principles and guidance (such as the 2024 TBT Committee guidelines on conformity assessment procedures)⁵²

could help to support recognition of different methodologies, standards and approaches, thereby lowering transaction costs.

Greater international cooperation on transparency and the interoperability of environmental measures can reduce unnecessary trade costs, prevent policy fragmentation and enhance the effectiveness of environmental policies. Improved cooperation and coordination can also facilitate a better understanding of the rationale, implementation and enforcement of environmental measures, while reducing uncertainty for producers and exporters operating across multiple jurisdictions. In this context, international cooperation and coordinated trade approaches can play an important role in reducing unnecessary frictions, addressing cross-border spillovers, supporting a more cost-effective and inclusive decarbonization process, and harnessing the benefits of international trade to accelerate the global green transition.

(iv) The costs of uncoordinated environmental policy

Uncoordinated environmental policies risk slowing down the green transition and impacting trading partners. While environmental policies are important tools to protect the environment and accelerate the green transition, a lack of coordination in their design and implementation can reduce their effectiveness and create significant trade-related spillovers. Divergent carbon pricing schemes, subsidies, standards and border adjustment measures can increase compliance costs, disrupt supply chains, distort competitiveness and disproportionately affect smaller firms and developing economies. Such measures have increasingly given rise to trade concerns in WTO bodies, with concerns including effects on market access or uncertainty for exporters (see Figure C.11). Uncoordinated approaches could also invite retaliatory measures, subsidy races and broader trade tensions, with potentially adverse implications for global welfare, international cooperation and the predictability of the multilateral trading system (WTR, 2023b).

Inconsistencies between trade and environmental policy could undermine policy effectiveness. As already noted, environmental policy is much more prominent and economically consequential today than at the inception of the WTO in 1995. A failure to coordinate trade and

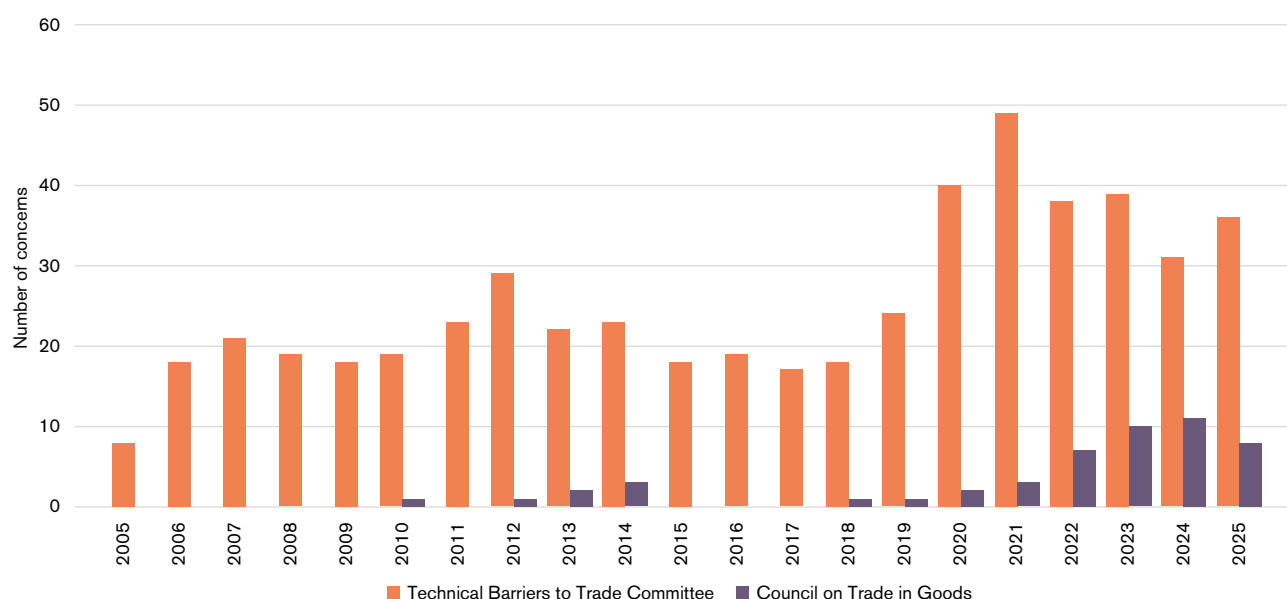
environmental policies risks significantly undermining the potential gains, whereas an open trading system can substantially enhance the effectiveness of environmental policy. For example, Le Moigne et al. (2026) show that a global carbon tax would induce firms to shift sourcing towards less carbon-intensive producers, allowing economies with lower-emission production methods to expand their exports.

4. Geopolitical tensions and the transition to a multipolar global economy

Global economic integration has led to more specialization, interdependence and complexity. Finer specialization within GVCs has concentrated the production of certain goods, especially parts and components, in a few locations. The number of potential bottleneck products – the majority of which are electronics and electronic inputs, such as cell phones and semiconductors, critical minerals such as rhodium and lithium, and agricultural goods such as soybeans and sunflower – more than doubled between 2000 and 2024 (UIBE et al., 2025; Bruno and Cipollina, 2026). This interdependence has also magnified the potential cross-border spillovers of trade policies. Trade policy mattered much less for the domestic economy in 1995 when the average ratio of trade to GDP was 43 per cent, than in 2025 when the ratio was 68 per cent.⁵³

Moreover, a series of global shocks and geopolitical tensions has recast interdependence as a security issue. Major shocks to the global economy, such as the COVID-19 pandemic and the war in Ukraine, have underlined concerns about the reliability, resilience and security of complex global supply chains. In addition, concerns about how dependence on foreign suppliers in strategic sectors can be exploited as geopolitical leverage have led to an increase in the prominence of security considerations in trade policymaking. At the same time, the proliferation of potentially dual-use technologies (i.e., technologies that can have both civilian and military uses) has steadily broadened the definition of what constitutes a strategic sector, prompting governments to pursue a broad set of protective measures on imports, exports and investment. The rise and persistence of trade barriers between the world's largest economies have catalysed a decoupling of trade flows between them.

Figure C.11: Trade concerns raised on measures to protect the environment have increased



Source: WTO Secretariat calculations based on WTO Trade Concerns Data Portal and analysis from Santana and Dobhal (2024) updated to the most recent years.

Note: The figure shows the number of concerns raised in the Technical Barriers to Trade (TBT) Committee on measures motivated by environmental protection and the number of concerns raised in the Council on Trade in Goods on measures related to environmental protection.

Global trade is increasingly sensitive to “geopolitical distance”, challenging multilateral cooperation in favour of a more fragmented global economy, where trust in trading partners increasingly shapes policy and business decisions. The economic costs of fragmentation are projected to be high, and place a disproportionate burden on small, open economies.

(a) Concerns about interdependence and production concentration

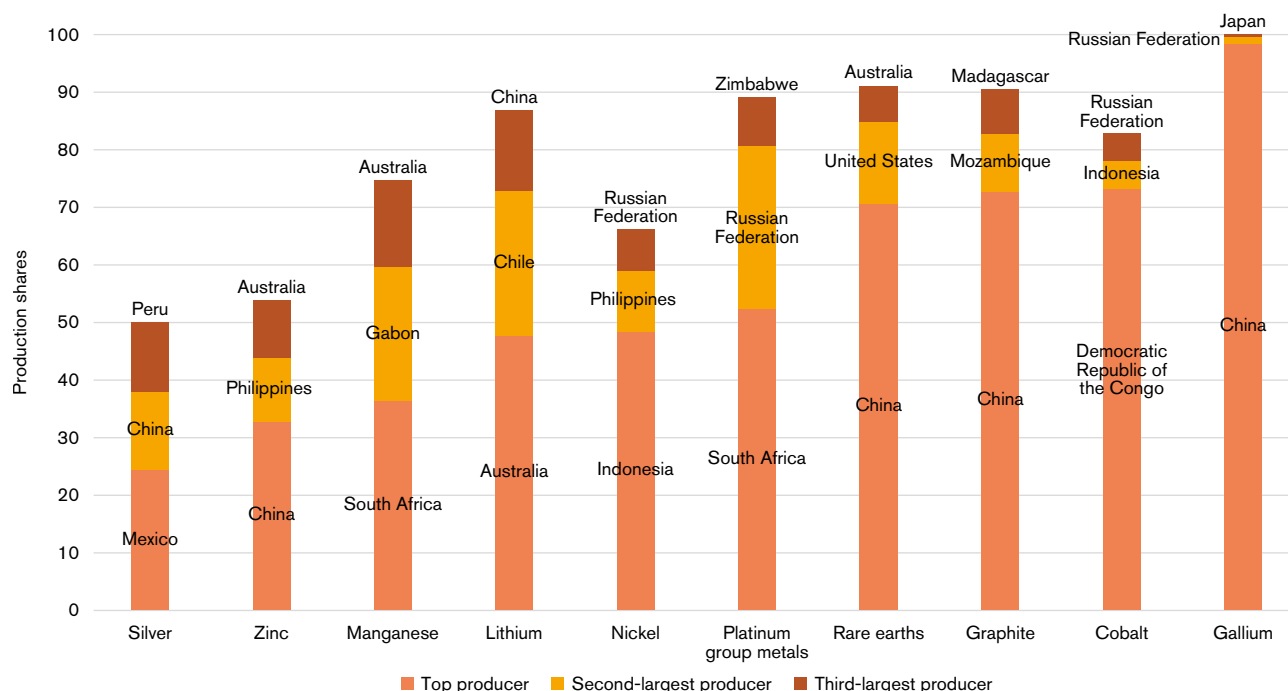
High concentration in certain sectors can turn local supply disruptions into wider economic and security risks. Policymakers are increasingly concerned that deeper interdependence could also create economic security risks. In some sectors, production is concentrated in only a few economies, often because of comparative advantages and economies of scale. The security concern is especially relevant for strategic sectors such as semiconductors and critical raw materials. According to OECD data, just five economies account for 75 per cent of value-added in the semiconductor industry, and four of these are in East Asia (OECD, 2025b). Similarly, for four types of critical minerals, the largest producer accounts for more than 50 per cent of global production, as shown in Figure C.12. These sectors

are also very far upstream, meaning that many other sectors use them as inputs, either directly or indirectly. As a result, a disruption in one or a few locations can lead to profound economic and security impacts that may affect sectors directly linked to national security, such as defence, food supply, energy systems and critical infrastructure, especially in the absence of short-term supply substitutes.

Increased geopolitical tensions and the expansion of potential dual-use technologies have further magnified trade-related national security concerns. Security concerns have become more relevant as geopolitical competition has intensified. Policymakers increasingly view economic interdependence as a potential source of strategic vulnerability, as reliance on foreign suppliers in strategic sectors may create leverage for foreign actors (Hirschman, 1980; Farrell and Newman, 2019; Clayton, Maggiori and Schreger, 2026). Compounding these dynamics, the definition of strategic sectors has broadened over time as digital and emerging technologies, such as AI, develop dual-use applications (Alekseev and Lin, 2026).

Various policies motivated by security and geopolitical considerations have expanded

Figure C.12: The production of several types of critical minerals is geographically concentrated



Source: WTO Secretariat calculations based on US Geological Survey (2017).

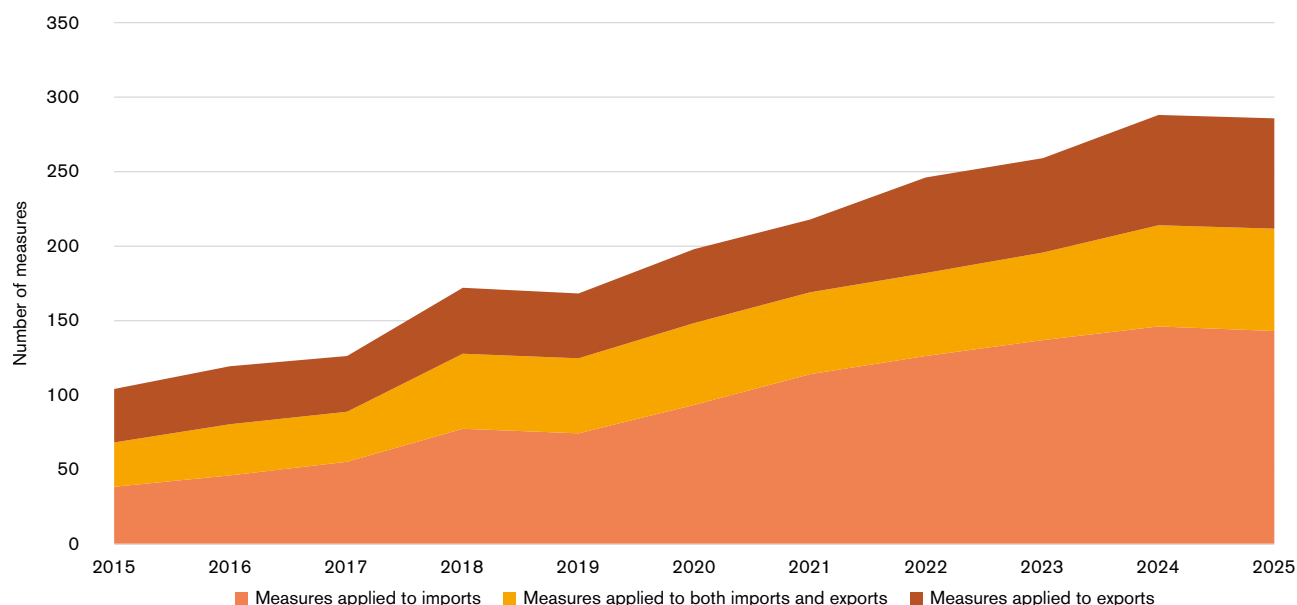
Note: The figure shows the production shares of the top three producers for selected critical minerals.

in response. Traditionally, industrial policy has been used to mitigate the decline of industries and associated labour market disruptions, and to develop capabilities in sectors with potential future economic importance or broader economic benefits. More recently, though, industrial policy has increasingly aimed to reduce dependence on foreign suppliers of strategic goods – particularly those from geopolitical competitors – to diversify supply sources and to maintain technological leadership in strategic technologies (Bown, 2024). Implemented industrial policy tools include subsidies, export controls and targeted trade deals (sectoral or otherwise limited trade agreements that are often focused on addressing non-tariff barriers through soft law provisions),⁵⁴ as well as other industrial policy instruments. Concerns about strategic dependence being exploited have contributed to the development of unilateral trade instruments.

Consistent with these trends, the number of quantitative restrictions notified under the security exception has increased over the last decade. Although Article XI:1 of the GATT provides for the general elimination of quantitative restrictions, members are allowed to introduce or maintain them

in a limited number of circumstances as exceptions. WTO rules acknowledge members' right to adopt necessary measures to protect national security, as reflected in the national security exception under GATT Article XXI. To enhance transparency, all members are required to notify prohibitions and other restrictions that they introduce or maintain on their trade in goods, including their legal justification. Figure C.13 shows that the number of quantitative restrictions, such as import or export controls and prohibitions, notified under the national security exception, has almost tripled over the last decade.

Targeted trade deals are becoming an increasingly prominent feature of the trade policy landscape to address resilience and security concerns. Agreements that are sectoral or otherwise limited in scope or coverage have become a more frequent instrument to address resilience and security concerns. For instance, the number of economy pairs connected through such targeted trade deals in the digital area has increased by a factor of 35 since 2019, and 80 per cent of targeted trade deals on critical minerals were signed between 2022 and 2024. Most critical mineral agreements involve a resource-rich economy and are intended

Figure C.13: Quantitative restrictions notified under the security exception have increased (2015-25)

Source: WTO Secretariat calculations based on WTO Quantitative Restrictions Notification Data Portal (<https://qr.wto.org/en/notifications>).

Note: This figure reports the number of quantitative restrictions in force notified to the WTO under GATT Article XXI.

to open new sourcing relationships to diversify supply of key inputs (UIBE et al., 2025). However, these agreements also raise concerns related to transparency and coordination (see Section B.2.(d) in Chapter B).

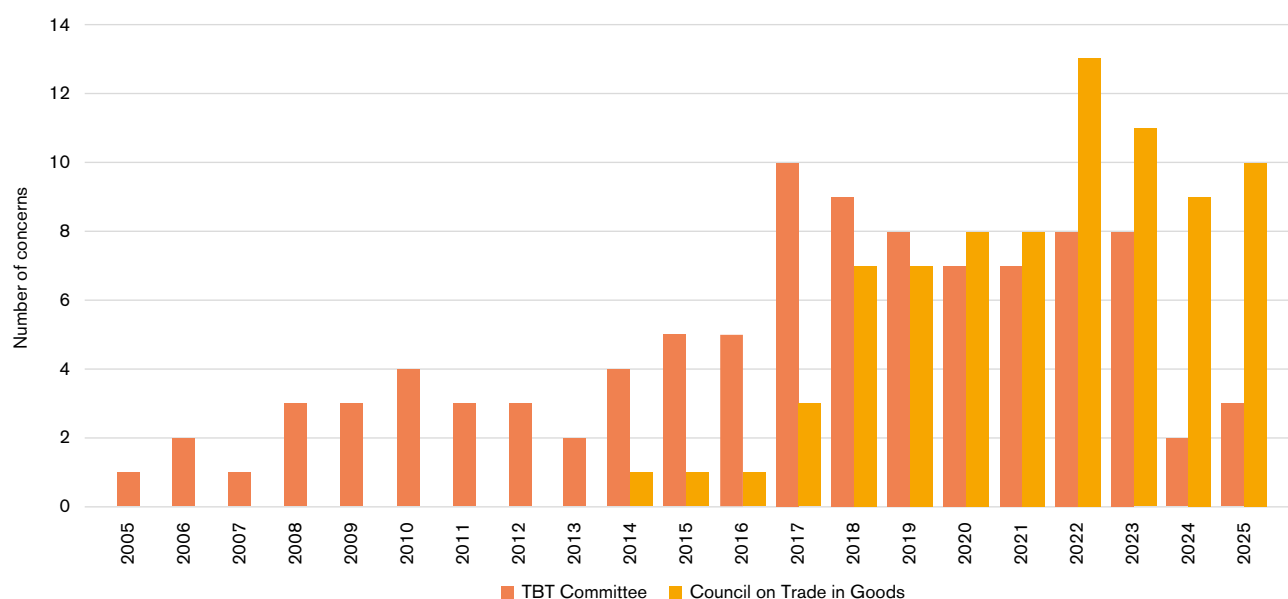
The expanding toolkits of national policies point to the need to clarify the nature of the flexibilities to address security concerns that are consistent with preserving the benefits of a rules-based system. The balance between security concerns and the rules-based system is becoming more challenging to maintain as security-motivated policies continue to expand. When security-related trade measures restrict trade, discriminate across trading partners or favour domestic firms, they generate concerns that are voiced by members in WTO bodies. Figure C.14 shows the increasing number of concerns raised on TBTs motivated by national security requirements, as well as the increasing number of concerns raised in the Council on Trade in Goods. Several of these concerns have recently escalated to the dispute settlement system.⁵⁵

Policies introduced to increase resilience and reduce security risks can impose large economic costs and deepen fragmentation. Trade growth since 2018 between the United States and China has consistently lagged behind

the respective trade of each of these members with other partners, reflecting a decoupling of trade flows between the world's two largest economies (Blanga-Gubbay and Rubínová, 2024). The same study shows that this decoupling pattern is part of a broader shift away from trading with politically non-aligned economies in times of heightened global uncertainty. Decoupling and friend-shoring strategies may come at a significant economic cost if they further reinforce geopolitical tensions and contribute to severe economic fragmentation (Evenett et al., 2025; Gopinath, 2023).

Economic modelling suggests that the transition from a globally integrated system to a fragmented landscape would be costly. Fragmentation does not merely increase trade costs; it stifles global productivity by disrupting the international production networks that underpin the global economy. As shown in Chapter B, a “Geo-fragmented world” scenario, in which security considerations and geopolitical alignments play a central role in shaping trade policy and trade cooperation is organized around geopolitical blocs, would result in an over 5 per cent loss of world GDP. The systemic vulnerability of developing economies further underscores these risks. In a fragmented landscape split into two major geopolitical blocs and a group of “unaligned” economies that do not belong

Figure C.14: The number of concerns raised on measures taken to protect national security has increased (2005-25)



Source: WTO Secretariat calculations based on WTO Trade Concerns Data Portal and analysis from Santana and Dobhal (2024) updated to the most recent years.

Note: The figure shows the number of concerns raised in the TBT Committee on measures motivated by national security requirements and the number of concerns raised in the Council on Trade in Goods on measures related to national security or geopolitical issues.

to either bloc, IMF research indicates that the median “unaligned” economy in Asia and Africa would face real per capita income losses 80 per cent and 120 per cent larger, respectively, than those of developed economies (Hakobyan, Meleshchuk and Zymek, 2023).

These high costs signal the importance of finding the right balance for flexibilities to protect national security, while preserving the benefits of the rules-based trading system.

While this is more challenging in the current environment than at any time over the past 80 years, achieving this balance, with flexibilities that account both for the security needs of member governments and the costs imposed on trading partners when flexibilities are exercised, is precisely what the rules-based system is meant to do.

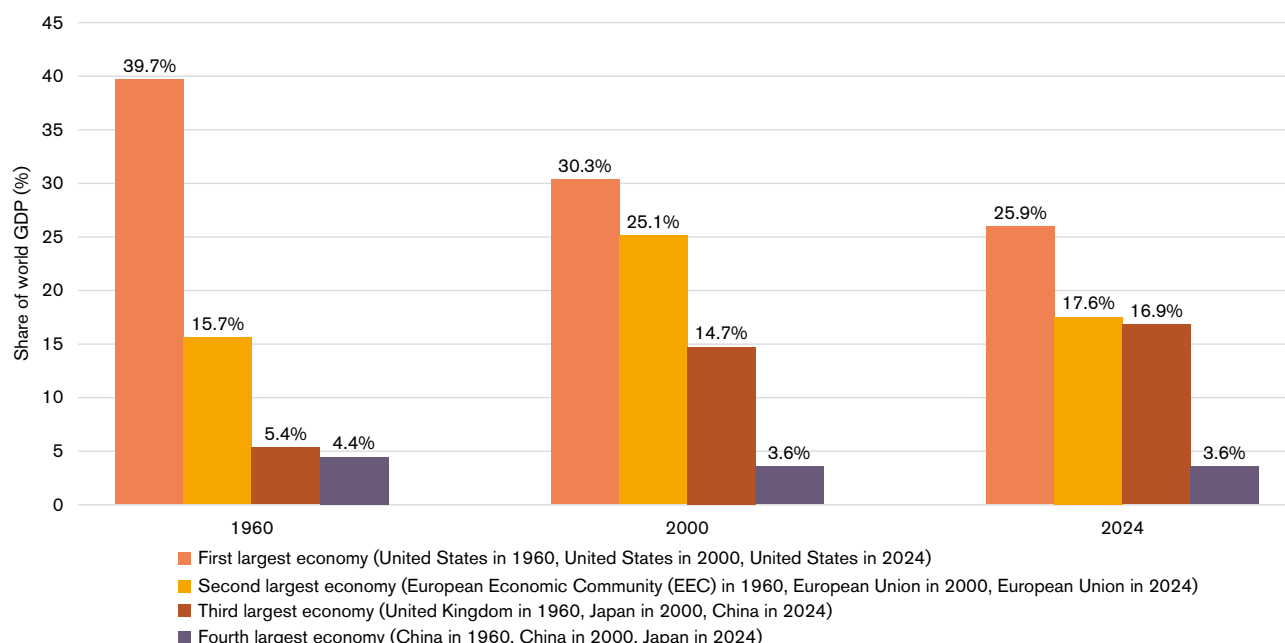
(b) The transition to a multipolar world

The rapid economic integration of the developing world over the past three decades has altered the balance of both economic and geopolitical power. While this shift reflects the successful realization of core multilateral objectives, it has produced an increasingly multipolar world.

The economic dimension of this change is evident in the distribution of world output, illustrated in Figure C.15: in 1960, a single dominant economy accounted for nearly 40 per cent of world GDP; by 2000, the second-largest economy had substantially narrowed the gap, though a notable margin to the third largest remained; and by 2024, economic size was distributed across three comparable poles. This evolution presents a new set of institutional challenges, as a system originally designed to facilitate global integration is increasingly called upon to manage the divergent interests of emerging and incumbent powers. This redistribution has been accompanied by a parallel geopolitical shift whereby the rules-based order is adapting to an environment where earlier shared security assumptions are overlaid by a more fragmented, multi-layered global hierarchy (WTO, 2023c).

According to classical “hegemonic stability” theory, a rules-based international order depends on the presence of a single dominant economy to sustain it. Such a regime constitutes an international public good, typically underprovided due to high coordination costs and a lack of enforcement (Kindleberger, 1975). A hegemon

Figure C.15: Shares of world GDP of the largest economies have shifted (1960-2024)



Source: WTO Secretariat calculations based on World Bank GDP data in current US dollars.

Note: Each cluster is a year; the four columns are the first to fourth largest economies that year. The European Union is included as a single entity with time-varying membership.

resolves this collective action problem: because it is large enough to capture benefits exceeding the costs of provision, it is rational for the hegemon to sponsor the system alone.⁵⁶ While smaller economies “free-ride” on the benefits of a rules-based system, the result is a stable order. The theory therefore predicts that liberal regimes endure only as long as a dominant power is willing to sustain them, and that erosion of the leading economy’s relative power will shift the underlying incentives for hegemonic leadership from individual sponsorship toward the challenges of collective action (Mattoo and Staiger, 2020). This pessimistic reading is echoed by historian and commentator Robert Kagan, who regards the rules-based international order that has prevailed over the past 80 years as a historical anomaly made possible by hegemonic leadership – an anomaly that may now be ending (Kagan, 2018). However, other theories suggest that international rules-based cooperation can persist after hegemonic decline (Keohane, 1984).

Emerging theories further explore the conditions under which leading economies may have incentives to overcome the collective action problem even in the absence of a hegemon. Whereas classical hegemonic stability theory emphasizes the necessity of a single sponsor,

this newer research explores conditions under which non-hegemonic actors might collectively uphold international rules as a rational safeguard against future economic volatility. Recent research by Carvalho et al. (2025) suggests that, while a hegemon is necessary to initiate a system, once it is in place its maintenance may be possible through a “strategic hedge” by non-hegemonic leading economies. These actors uphold multilateral rules to ensure against future exploitation if their influence declines – provided that they remain oriented toward the long term and that the system maintains high leadership turnover (see the opinion piece by Daniel Monte and Emanuel Ornelas). Middle powers can play a complementary role: dependent on a rules-based multilateral system for their own economic security, yet lacking the individual leverage to protect it against fragmentation, they cannot replace the leadership of a great power but can help to preserve cooperation through collective stewardship and institutional influence (Ossa, 2026).

A further challenge stems less from the distribution of economic power than from geopolitical rivalry itself. Geopolitical rivalry can undermine the logic of mutual gains at the heart of cooperative international institutions when rivals

International trade rules in a post-hegemonic world

by Daniel Monte

Associate Professor, Sao Paulo School of Economics, Fundação Getulio Vargas, and

Emanuel Ornelas

Professor, Sao Paulo School of Economics, Fundação Getulio Vargas

Sustaining international trade rules requires more than updating provisions that may have become outdated. As Kindleberger (1975) argued, it is easier to sustain international rules when a leading economy is willing to bear a disproportionate share of the costs. But as the world becomes increasingly multipolar, incentives to remain constrained by rules have weakened, encouraging a shift toward power-based bargaining (Mattoo and Staiger, 2020). In such an environment, major economies may want rule-based constraints for others while seeking greater discretion for themselves in bilateral bargaining. This temptation to free-ride on others' compliance interacts with market power incentives, making a rules-based system difficult to sustain.

The question is therefore how to adapt the WTO to this new reality. We examine this challenge formally in Carvalho, Monte and Ornelas (2025) and in Carvalho et al. (2026).

A first response is to make the system more valuable. The key WTO principles of reciprocity and non-discrimination help governments internalize, or take into account, the cross-border consequences of unilateral trade policies, while limiting the role of bargaining power in tariff negotiations (Bagwell and Staiger, 1999). These principles must now be applied to a broader and more politically demanding set of policy problems. If WTO rules generate larger and more visible gains for both leading and non-leading economies, remaining inside the system becomes more attractive even for powerful members. Reform should therefore focus on areas where cooperation still offers large, unrealized benefits, including subsidies, industrial policy, climate-related trade measures, digital trade, and the interaction between trade and economic security.

A second response is to make the system more resilient to disruption. Our framework highlights a "Goldilocks" property of institutional stickiness. We know that rules are difficult to dismantle and rebuild;

otherwise, they would become disposable, cycling on and off as international and economic conditions shift. But if they are too costly to establish and maintain, even cooperative leaders will not invest in them. Only when maintaining and rebuilding rules is neither too cheap nor too costly can a durable rules-based equilibrium persist across changes in leadership. This has a practical implication: the WTO benefits from institutional arrangements that make rule-breaking costly and rule-rebuilding feasible but not effortless. Cooperative coalitions among like-minded members, plurilateral agreements and stronger dispute settlement mechanisms all serve this function.

A third response is more delicate: the system may need to offer additional flexibility without abandoning its core principles. This is not an argument for abandoning commitments. Our formal analysis shows that when the short-term gains from power-based negotiations are large relative to the long-term benefits from rules-based commitments, major economies may eventually become less supportive of the system. Sustainability may therefore require adjustments in the distribution of the gains from cooperation.

In sum, sustaining the WTO in an evolving global landscape requires acknowledging the new balance of economic and political forces. Rules that were self-enforcing under one configuration of global leadership may require adaptation to remain viable under another. The goal should be to reform the rules that govern the pursuit of power while giving leading economies both reasons to remain bound by them and the confidence that others will do the same in the future. The path forward lies in making the system sufficiently valuable, and resilient enough, that all major economies find it in their interest to remain bound by it.

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prioritize their strategic positions relative to one another. As Mearsheimer (2003) puts it,

“... states motivated by relative power concerns are likely to forgo large gains in their own power, if such gains give rival states even greater power, for smaller national gains that nevertheless provide them with a power advantage over their rivals”.⁵⁷

Historical evidence from the period between the two world wars suggests that multilateral frameworks can become paralyzed when states seek to use them to secure control over global resources rather than to foster cooperation (Brandtjen, 2026; Maiolo and Robson, 2025). In the 1930s, this paralysis left a vacuum in which the predictability of international law gave way to unilateral actions – retaliatory tariffs and export controls – and the volatility of geoeconomic leverage (James, 2009).

Yet history also provides examples demonstrating that cooperation can persist even during periods of intense systemic rivalry. Despite the binary nature of the 20th century Cold War standoff, the international community maintained functional channels for technical and economic coordination when interests aligned. For example, the Soviet Union remained engaged with the GATT on a technical level and participated in critical global commodity markets, such as the 1970s grain deals and the development of transcontinental gas pipelines to Western Europe. Even at the height of the Cold War, shared economic necessities kept these institutional bridges intact.

Economic theory suggests that when two states see each other as rivals, cooperating on trade can still make both of them better off, even when they take their rivalry into account. This holds as long as each government still cares at least somewhat about its own citizens' welfare. In that case, a nation can only advance its strategic goals effectively if it also keeps an eye on its own economic interests – in other words, rivalry does not erase the basic case for trade cooperation. However, the same theory suggests that reaching a cooperative outcome may require new mechanisms if geopolitical rivals are to adjust their trade relationships without imposing undue costs on other trade partners (Mattoo, Ruta and Staiger, 2024).

5. Conclusion

Over eight decades, the multilateral trade cooperation embodied in the GATT and subsequently the WTO has successfully fostered a deeply integrated, multipolar global economy. Global trade integration has distributed economic power more evenly, and has been a crucial element of economic growth. However, this very success has also contributed to multiple challenges for the rules-based system that saw its last comprehensive update 30 years ago.

The first of these challenges is the potential gap between historical legal commitments and modern economic realities. Driven by the rapid rise of emerging economies, the potential to generate cross-border trade spillovers is no longer concentrated among a few advanced nations. Because existing tariff bindings and flexibilities still largely reflect bargains struck decades ago, the system struggles to balance rights and obligations with the contemporary distribution of market power.

The second challenge the system faces concerns the growing relevance of different economic systems and government involvement in markets. Although the GATT and the WTO have experience creating instruments to address certain challenges arising from differences in economic systems and concerns related to government interventions, the scale and scope of modern industrial policies strain traditional disciplines and risk undermining trust in the ability of the rules-based system to maintain the balance of commitments.

Third, the changing nature of trade itself has shifted the frontier of international cooperation from border tariffs to domestic regulations, adding more complexity. GVCs, digital trade and the environmental transition have introduced deep structural interdependencies and new cross-border spillovers that the system must address.

Finally, these challenges are exacerbated by rising geopolitical tensions, which have altered the perceived balance between the benefits and risks of economic interdependence. As economies increasingly deploy trade measures to address national security, technological rivalry and supply chain vulnerabilities, the boundary between legitimate policy space and unilateral escape from rules becomes harder to maintain, with the emergence of geopolitical rivalry itself further complicating the picture.

Ultimately, leaving these challenges unaddressed carries a significant global opportunity cost and risks drifting away from rules-based cooperation toward less predictable and fragmented forms of governance. The results of economic modelling described in Section B.4 of Chapter B show that the benefits of enhancing multilateral cooperation could increase global income by 3 per cent, while letting

the system fragment could reduce global income by up to 7 per cent. Overall, rebalancing commitments, rebuilding trust in institutional mechanisms, advancing cooperation on more complex policies and addressing security-related concerns could help realize a scenario in which global income is 10 per cent higher than in the scenario in which challenges are left unaddressed.

Endnotes

- 1 See the Preamble of the Marrakesh Agreement Establishing the World Trade Organization, https://www.wto.org/english/docs_e/legal_e/marag_e.htm.
- 2 A study by Broda et al. (2008) identifies inverse export supply elasticities as the most direct measure of market power, noting that import shares serve as an imperfect but positively correlated proxy. However, time-varying estimates of these elasticities are unavailable. Consequently, an economy's share of world imports is used for each Harmonized System (HS) six-digit product as a proxy to capture the variation of market power over time, across economies and by product.
- 3 For example, the negotiating protocol for the Geneva (1947) Round (GATT document number E/PC/T/C. II/58, available at <https://docs.wto.org/>) describes the implications of the principal supplier rule for the organization of bargaining in the round as follows:

"Notwithstanding the multilateral character of the negotiations, it will usually be found that only two or three countries will be directly and primarily concerned in the concession on a particular product, and that the interest of other countries, although material, will be secondary. It is therefore proposed that the third stage of the negotiations will ordinarily consist of discussions on particular products between two, or possibly three or four countries. For the purpose of engaging in such negotiations, therefore, each country should to the extent practicable have separate groups of persons competent to negotiate with each of the other countries with which important negotiations are likely to be conducted."
- 4 From the standpoint of the traditional "optimal tariff" theory (Johnson, 1953), an economy that lacks market power is expected to maintain an optimal tariff of zero, as it cannot influence international prices to its advantage. In practice, however, many developing nations historically maintained elevated tariff structures to serve alternative domestic policy functions, such as securing fiscal revenue or promoting industrial growth. As noted in chapter B, the traditional optimal tariff theory can be extended to accommodate these objectives without changing the essential feature that nations with market power set tariffs that, from a global perspective, are inefficiently high in light of their underlying goals (Bagwell and Staiger, 2002b). While the terms-of-trade framework typically states that this feature arises in the presence of market power because importing governments actively manipulate world prices with their tariff choices, it could also be said that this feature arises because importing governments simply do not account for the costs that their tariff choices impose on foreign exporters through lower prices and profits (Staiger and Sykes, 2011).
- 5 A practical illustration of this problem can be found in the Environmental Goods Agreement (EGA) negotiations between 2014 and 2016. To address concerns about free-riding by major producers not participating in the talks on concessions extended on an MFN basis, China proposed a "snapback" mechanism, under which participants could reinstate their tariffs on covered goods if trade among EGA members fell below 70 per cent of global trade in those products, and if at least 3 per cent of such trade was accounted for by a WTO member not party to the agreement. The proposal sought, in effect, to convert critical mass from a one-off entry threshold into a continuing condition, making the durability of the concessions contingent on sustained participation. It was not adopted, in part because it was seen by some as cutting against the predictability that tariff bindings are meant to provide, and the question formed part of the disagreements that left the negotiations unconcluded. This episode nonetheless illustrates that the "latecomers" and free-rider problems are not merely theoretical, but are concerns with which WTO members grapple in practice.
- 6 In December 2005, when WTO members approved an amendment of the TRIPS Agreement in order to make permanent a decision on patents and public health originally adopted in 2003 (see https://www.wto.org/english/tratop_e/trips_e/amendment_e.htm), 11 developing members indicated that they would not be using the special system of compulsory licenses as importers.
- 7 See GATT official document L/2806, available at <https://docs.wto.org/>.
- 8 See, for instance, Report of the Working Party on the Accession of China (WTO official document WT/ACC/CHN/49); Report of the Working Party on the Accession of Viet Nam (WTO official document WT/ACC/VNM/48), Report of the Working Party on the Accession of Ukraine (WTO official document WT/ACC/UKR/152), Report of the Working Party on the Accession of the Russian Federation (WTO official document WT/ACC/RUS/70), and Report of the Working Party on the Accession of the Republic of Kazakhstan (WTO official document WT/ACC/KAZ/93); WTO official documents available at <https://docs.wto.org/>.
- 9 See GATT official document L/3889, available at <https://docs.wto.org/>.
- 10 See GATT official document L/2806, available at <https://docs.wto.org/>.
- 11 See GATT official document L/3557, available at <https://docs.wto.org/>.
- 12 Protocol on the Accession of China (WTO official document WT/L/432), Report of the Working Party on the Accession of Viet Nam (WTO official document WT/ACC/VNM/48), and Report of the Working Party on the Accession of Tajikistan (WTO official document WT/ACC/TJK/30). WTO official documents are available at <https://docs.wto.org/>.
- 13 See GATT official document L/3889, available at <https://docs.wto.org/>; Protocol on the Accession of China (WTO official document WT/L/432) and Report of the Working Party on the Accession of China (WTO official document WT/ACC/CHN/49). WTO official documents are available at <https://docs.wto.org/>.
- 14 Proposals by the Czechoslovak Delegation, W.9/86 (9 December 1954); Memoranda received from the Governments of Czechoslovakia and Sweden (L/943, 26 November 1958): https://www.wto.org/gatt_docs/English/SULPDF/90720061.pdf.
- 15 See GATT official document Spec(71)98, available at <https://docs.wto.org/>.

- 16 See GATT official documents L/2851 and L/2806, available at <https://docs.wto.org/>.
- 17 See GATT official document L/3557, available at <https://docs.wto.org/>.
- 18 For example, see WTO official documents WT/ACC/CHN/49, WT/ACC/VNM/48, WT/ACC/RUS/70, and WT/ACC/KAZ/93, available at <https://docs.wto.org/>.
- 19 See WTO official documents WT/ACC/CHN/49, WT/ACC/VNM/48 and WT/ACC/RUS/70, available at <https://docs.wto.org/>.
- 20 See GATT official document W.9/86, available at <https://docs.wto.org/>.
- 21 See GATT official document W.9/220, available at <https://docs.wto.org/>.
- 22 See GATT official document Sepc(71)98, available at <https://docs.wto.org/>.
- 23 See GATT official document MTN/INF/30, available at <https://docs.wto.org/>.
- 24 See GATT official document ADP/M/2, available at <https://docs.wto.org/>.
- 25 See GATT official document L/2851, available at <https://docs.wto.org/>.
- 26 See GATT official document L/3557, available at <https://docs.wto.org/>.
- 27 See GATT official document L/3889, available at <https://docs.wto.org/>.
- 28 See GATT official document WT/L/432, available at <https://docs.wto.org/>.
- 29 See paragraph 13 of GATT official documents L/2806 and L/3557, available at <https://docs.wto.org/>.
- 30 See paragraph 18 of GATT official document L/3889, available at <https://docs.wto.org/>.
- 31 See, e.g., Australian Anti-Dumping Commission, Final Report No. 441: Alleged Dumping of Steel Pallet Racking Exported from the People's Republic of China and Malaysia (5 April 2019); USDOC, Issues and Decision Memorandum for the Final Affirmative Determination in the Anti-dumping Duty Investigation of Biodiesel from Argentina (20 February 2018); UK Trade Remedies Authority, Final Determination Case AD0012: Investigation into alleged dumping of aluminium extrusions from the People's Republic of China (16 December 2022); Canada Border Services Agency, Notice of conclusion of a re-investigation: Certain concrete reinforcing bar (10 May 2023).
- 32 See WTO official documents WT/WGTCP/W/88 and WT/WGTCP/W/78, available at <https://docs.wto.org/>.
- 33 These approaches are referred to collectively here as "interface methodologies", which is for analytical purposes only and which carries no implication as to the WTO consistency of these approaches and the anti-dumping proceedings in which they have been used. With respect to approaches based on a "particular market situation", one panel report adopted by the WTO Dispute Settlement Body (DSB) held that they are fact-specific and case-by-case inquiries that do not exclude situations arising from government actions. With respect to approaches based on non-market economy provisions in accession protocols, a panel was established to hear a complaint premised in part on the relevant provision having expired. The complainant later requested the panel to suspend its work, which ultimately resulted in the panel's authority to hear the case lapsing.
- 34 See, e.g., USDOC, Issues and Decision Memorandum for the Final Affirmative Determination in the Less-Than-Fair-Value Investigation of Large Diameter Welded Pipe from the Republic of Korea (19 February 2019); ADC, Final Report No. 441: Alleged Dumping of Steel Pallet Racking Exported from The People's Republic of China and Malaysia (5 April 2019); CBSA, Statement of Reasons Concerning the Final Determinations with respect to the Dumping of Certain Silicon Metal (18 October 2017); Commission Implementing Regulation (EU) 2024/1040 of 27 March 2024 imposing a definitive anti-dumping duty on imports of certain polyethylene terephthalate originating in People's Republic of China (2 April 2024); MOFCOM, Final Determination of An Anti-Dumping Investigation into N-Propanol Exported from the United States (17 November 2020).
- 35 See, e.g., CBSA, Notice of conclusion of a re-investigation: Certain concrete reinforcing bar (10 May 2023); USDOC, Decision Memorandum for the Preliminary Affirmative Determination in the Less-Than-Fair-Value Investigation of Hardwood and Decorative Plywood from Indonesia (24 February 2026); USDOC, Decision Memorandum for the Preliminary Determination in the Less-Than-Fair-Value Investigation of Certain Freight Rail Couplers and Parts Thereof from India; USDOC, Issues and Decision Memorandum for the Final Results of the Anti-dumping Duty Administrative Review of Certain Frozen Warmwater Shrimp from India; 2023-2024.
- 36 See, e.g., Regulations Improving and Strengthening the Enforcement of Trade Remedies, 89 Fed. Reg. 20766 (25 March 2024); Amending Regulation (EU) 2017/2321, recital 4 and art 1(1) amending art 2(6a)(b); Department of Industry, Science and Resources, Strengthening Australia's Trade Remedies System: consultation paper.
- 37 "Declaration on the Contribution of the World Trade Organization to Achieving Greater Coherence in Global Economic Policymaking" – see https://www.wto.org/english/docs_e/legal_e/32-dchor_e.htm.
- 38 See www.subsidydata.org.
- 39 In his discussion of how those who drafted the GATT conceived of the concept of nullification or impairment and the role of Article XXIII, Petersmann (1997) notes how one negotiator summed up the approach:

"We shall achieve...if our negotiations are successful, a careful balance of the interests of the contracting parties. This balance rests upon certain assumptions as to the character of the underlying situation in the years to come. And it involves a mutuality of obligations and benefits. If, with the passage of time, the underlying situation should change or the benefits accorded any contracting party should be impaired, the balance would be destroyed. It is the purpose of Article XXIII to restore this balance by providing for a compensatory adjustment in the obligations which the contracting party has assumed."

- 40 In the sense that it does not contain any provisions that distinguish between the different technological means through which a service may be supplied, although some members have expressed the view that the issue is complex and needs further examination (see WTO official document S/C/W/74, available from <https://docs.wto.org/>).
- 41 See https://www.wto.org/english/tratop_e/serv_e/gatsqa_e.htm for information concerning the four modes of supply of services under the GATS.
- 42 Trade Agreement Provisions on Electronic Commerce and Data 2025 (<https://unilu.ch/taped>).
- 43 See https://www.wto.org/english/tratop_e/serv_e/telecom_e/tel23_e.htm.
- 44 See https://www.wto.org/english/tratop_e/inftec_e/inftec_e.htm.
- 45 See https://www.wto.org/english/tratop_e/ecom_e/ecom_work_programme_e.htm.
- 46 See https://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm.
- 47 See <https://carbonpricingdashboard.worldbank.org/>.
- 48 See <https://edb.wto.org/>.
- 49 Another consideration is how to recognize climate mitigation efforts of trading partners when these differ from domestic approaches. Under the border carbon adjustment mechanisms adopted and proposed to date, recognition is limited to effective carbon prices paid in the economy of origin, which are then deducted from the carbon border fee levied. Therefore, other approaches, such as regulations that mandate emissions cuts, or subsidies that incentivize cleaner technologies, are not credited directly, only indirectly, to the extent that the production process ends up generating lower emissions, which can then be measured and verified in line with the carbon border mechanism.
- 50 In principle, an MFN border carbon adjustment that is calibrated to offset the added cost of production faced by domestic producers as a result of the domestic carbon tax would obviate the need to measure emissions from foreign suppliers, while preventing carbon leakage by neutralizing the market access consequences of the carbon tax (Staiger, 2022).
- 51 For instance, a group of eight members (Australia, Canada, Chile, Costa Rica, Israel, Japan, the Republic of Korea, New Zealand, and the United Kingdom), led by Japan, have proposed “non-binding guidance on methodologies for measuring embedded emissions”, including an information sharing template for transparency on such measures (see WTO official documents WT/CTE/W/269/Rev.5 and WT/CTE/W/271, available at <https://docs.wto.org/>). China has proposed strengthening discussions on carbon standards in the CTE and other WTO bodies (see WTO official document WT/CTE/270).
- 52 See WTO official document G/TBT/54, available at <https://docs.wto.org/>.
- 53 See <https://databank.worldbank.org/source/world-development-indicators>.
- 54 As per UIBE et al. (2025).
- 55 See for instance disputes concerning *Russia – Measures Concerning Traffic in Transit*, 2019; *United States – Certain Measures on Steel and Aluminium Products*, 2022; *United States – Origin Marking Requirement*, 2022.
- 56 The central prediction of hegemonic stability theory arises naturally from the terms-of-trade perspective on trade agreements described in Chapter B of this report (Bagwell and Staiger, 1999).
- 57 As Mattoo, Ruta and Staiger (2024) observe, Mearsheimer (2003) quotes from Adam Smith's *The Wealth of Nations* to provide an illustration of how states behave when forced to choose between wealth and relative power:

“In 1651, England put into effect the famous Navigation Act, protectionist legislation designed to damage Holland's commerce and ultimately cripple the Dutch economy. The legislation mandated that all goods imported into England be carried either in English ships or ships owned by the country that originally produced the goods. Since the Dutch produced few goods themselves, this measure would badly damage their shipping, the central ingredient in their economic success. Of course, the Navigation Act would hurt England's economy as well, mainly because it would rob England of the benefits of free trade. ‘The act of navigation,’ Smith wrote, ‘is not favourable to foreign commerce, or to the growth of that opulence that can arise from it.’ Nevertheless, Smith considered the legislation ‘the wisest of all the commercial regulations of England’ because it did more damage to the Dutch economy than to the English economy, and in the mid-seventeenth century Holland was ‘the only naval power which could endanger the security of England’.”

1

Wider distribution of economic power

Existing WTO commitments were made when markets looked very different to today. The challenge now is to ensure both developed and developing economies can benefit from new tariff bargaining opportunities.

45%

of global trade

Low and middle-income economies' share of global trade has nearly doubled since 1995, now accounting for 45 per cent of trade.

Four challenges facing the WTO

The WTO's rules are foundational for global trade, but a rapidly changing world economy is challenging that system.

In General Council meetings, **members' discussions** about different economic systems and industrial policy increased tenfold in 2020-25 compared with 1995-2000.

1995-2000

2020-2025

2

Greater role of government interventions

The increasing use of industrial policies and the diversity of economic systems raise level-playing-field concerns. The challenge is to ensure trade rules maintain the balance of members' commitments while preserving policy space.

3

The changing nature of trade

Global value chains, digitalization and environmental objectives have shifted the focus of international cooperation from border tariffs to domestic regulations, adding more complexity.

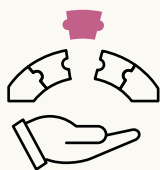


Digitally delivered services, such as computer and financial services, grew more than fivefold between 2005 and 2025. They now represent 55% of global services exports.



The WTO must adapt to the world economy it helped to create

The future of the multilateral, rules-based trading system will depend on members' ability to:



Repair what is broken



Preserve what works



Cooperate and avoid fragmentation

1960

2000

2024

The global economy grew from one dominant economy in 1960 to two leading economies in 2000 and three broadly comparable economic hubs by 2024.

4

Rising geopolitical tensions and a multipolar global economy

Concerns about supply-chain concentration, technological rivalry, national and economic security, and a multipolar world make it harder for economies to sustain cooperation.

