

# Digital Trade Development



## Disclaimer

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## Executive summary

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This report explores the opportunities and challenges for developing economies arising from digital trade and discusses the role of international cooperation in tackling these opportunities and challenges. The report considers policy actions in the areas of digital infrastructure, skills, international support for capacity development, and the regulatory and policy environment. Specific policy issues include the WTO e-commerce moratorium, regulation of cross-border data flows, competition policies and consumer protection.

The digital transformation is having profound effects. Digitalization of the economy is radically transforming the way we communicate, produce, govern and trade with one another. Digital technologies are engines of growth, increase productivity by reducing production costs, foster economies of scale and more efficient financing, promote innovation by fostering exchange of ideas and expand and diversify export baskets by reducing international trade costs. Digitalization can also promote resilience to shocks, a wider services-led growth model and more inclusive growth. At the same time, by transforming existing processes and business models, digitalization creates opportunities and risks, with winners and losers both across and within economies.

Cross-border digitally delivered services are the fastest growing segment of international trade, with new players emerging. Digital trade refers to all international trade digitally ordered and/or digitally delivered. According to WTO estimates, digitally delivered services have recorded an almost fourfold increase in value since 2005, rising 8.1 per cent on average per year over the period 2005-22, outpacing goods (5.6 per cent) and other services exports (4.2 per cent) to account for 54 per cent of total services exports. With new ways of obtaining comparative advantage, opportunities arise for new players to engage in global markets, including for farmers to connect to markets and for small business to trade via parcels. While developed economies are responsible for the majority of digitally delivered services exports, they have also grown in most developing economies, including in Africa, where Ghana, Morocco and South Africa have seen the largest growth. That said, growth in least developed countries (LDCs) continues to lag behind and Africa contributed less than 1 per cent of digitally delivered services exports globally in 2022. During the COVID-19 pandemic, the gap between the most globally in /de evelopunic.ncreas,c 0.al50.ced econo14es in term MorocimwTjvr/de an

digital trade or e-commerce provision. However, only few LDCs are party to RTAs with provisions on digital trade. The African Continental Free Trade Area (AfCFTA) is, for many countries, the first experience negotiating provisions on digital trade.

Since 1998, the WTO Work Programme on E-commerce has considered how WTO rules apply to e-commerce. E-commerce is widely seen as within the scope of existing WTO agreements. At the same time, a majority of WTO members consider that, to respond to the changing nature of trade and to facilitate e-commerce related activities, existing WTO rules related to digital trade need to be updated and complemented by new ones. Under the Joint Statement Initiative (JSI) on E-commerce, 90 WTO members, including many developing economies and 16 LDCs, are negotiating specific rules on digital-trade-related issues.

The WTO moratorium on the imposition of customs duties on electronic transmissions is attracting attention in the run-up to the WTO's 13<sup>th</sup> Ministerial Conference (MC13).



Trade has played an important role in fostering economic





# B

## Unleashing the potential of digital technologies: growth, trade and development opportunities

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Increased use of digital technologies is transforming the way workers, firms and consumers interact. The digital revolution has seen the transition from mechanical and analogue technologies to the widespread adoption of computers and the exchange of machine-readable information (i.e. digital data). While new digital technologies will continue to emerge, current technologies include artificial intelligence (AI), 3D printing, cloud computing and blockchain (OECD, 2019a; UNCTAD, 2021b; WTO, 2018).<sup>1</sup> Digitalization is transforming processes of production, consumption and trade and ultimately impacting on economic growth in multifaceted ways.

This section looks at the opportunities from digitalization. Like any technological change, digitalization brings with it challenges and opportunities. While this section focuses on the potential benefits of digitalization and how digitalization impacts trade, Section C discusses the challenges and the necessary policy options. Whether digital technologies are used in production to order or deliver services or order goods online domestically or internationally (like in the case of digital trade), digitalization provides new opportunities for growth and development and changes what we trade and who trades.

## 1. Digitalization changes the way economies grow

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Digitalization promotes wider services-led growth. The services sector has been significantly impacted by the advent of new digital technologies, potentially more so than the agriculture and manufacturing sectors (Matthess and Kunkel, 2020). ICTs have played a crucial role in overcoming the traditional need for physical proximity in many services activities. This has resulted in increasing tradability of many services across borders as well as a surge in “trade in tasks”

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economies has been found to have led to knowledge spillovers that have boosted the productivity and innovation of other firms, in particular the most productive ones (Paunov and Rollo, 2016).

Third, improving digital connectivity lowers international trade costs, thus boosting trade across all sectors. Digital technologies enable real-time communication, simplify cross-border transactions and expand market access by allowing for greater efficiency, transparency and customization. Digital technologies can reduce trade costs (such as transportation, information verification and tracking costs), thus improving supply chain efficiency through shorter delivery times, better transport, logistics and distribution services and enhanced traceability along the supply chain (Kang, 2016; Ma, Shi and Kang, 2023). WTO research suggests that a 10 per cent increase in mobile broadband subscription per capita is associated with around 1 per cent lower trade costs both in goods and services. The effect is especially strong for trade in digitally deliverable services, such as business and professional services (Bellucci, Rubínová and Piermartini, 2023). The impact of digital technologies on reducing trade costs has increased over time. OECD research shows that by 2018, the impact of an increased share of individuals using the internet on international trade costs was three times higher than it was in 1995 (López González, Sorescu and Kaynak, 2023). Although estimated trade effects of improved digital connectivity vary between 0.5% and 1.398% (JTI, 2023), they remain positive across all sectors and different levels of development. Digital trade has been an engine for growth, particularly on trade, economies to the extent of economies

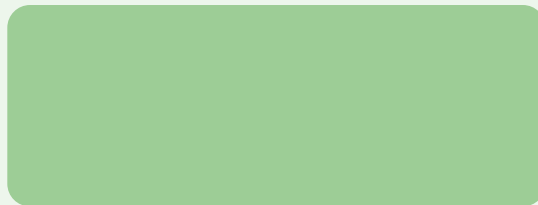
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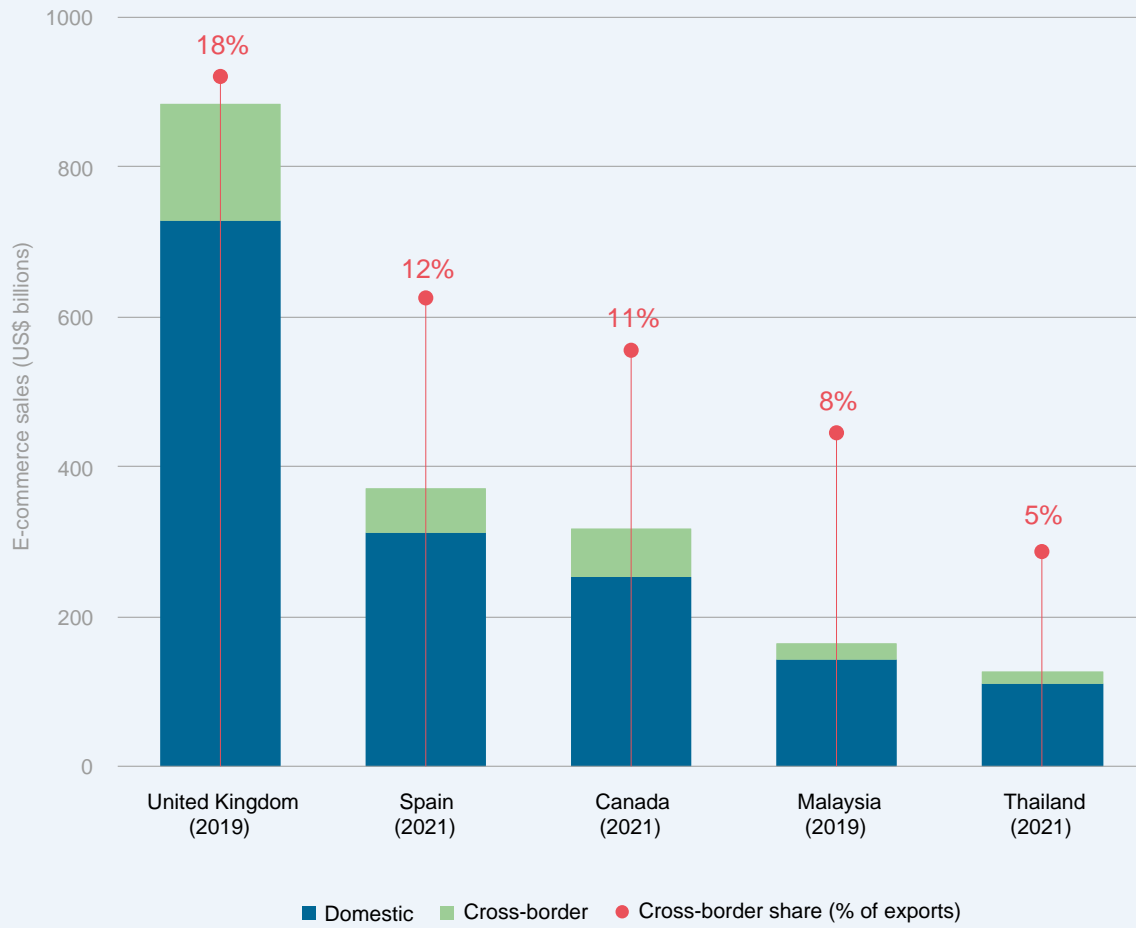
WTO Work Programme on Electronic Commerce

definition (1998)

“The production, distribution, marketing, sale or delivery of goods and services by electronic means”



International transactions that are both  
digitally ordered and digitally delivered



2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022

### 3. Digital trade provides opportunities to launch new products

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Digital technologies have provided new opportunities to trade a broad range of services. In the last decade, computer services were the most dynamic services sector. In 2022, digitally delivered services exports were dominated by business, professional and technical services, which accounted for approximately 40 per cent, followed by computer services (20 per cent), financial services (16 per cent) and intellectual property-related services (12 per cent) (WTO, 2023b).

Digital delivery is increasingly common, with impacts on goods trade, predominantly in developed economies. Demand in physical formats of music, movies, books and software, which once dominated the market, have plateaued as digital equivalents have become more prevalent because demand is



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Trade in goods that underpin the use of digital technologies has seen an increase too. The rising demand for innovative digital products and solutions, coupled with the growing reliance on digital infrastructure and tools, are making certain goods, such as ICT equipment, essential for achieving optimal functionality and performance in the digital economy. As a result, the demand for these goods has led to an increase in their international trade. From 2012 to 2021, global ICT goods exports grew by nearly 50 per cent to US\$ 2.7 trillion. The share of trade in ICT goods in total merchandise trade varies across regions. While Asia continues to lead in terms of trade in ICT goods, other regions have demonstrated comparatively lower levels of engagement in this sector. In particular, in LDCs and several developing regions, including Northern and Sub-Saharan Africa, the share

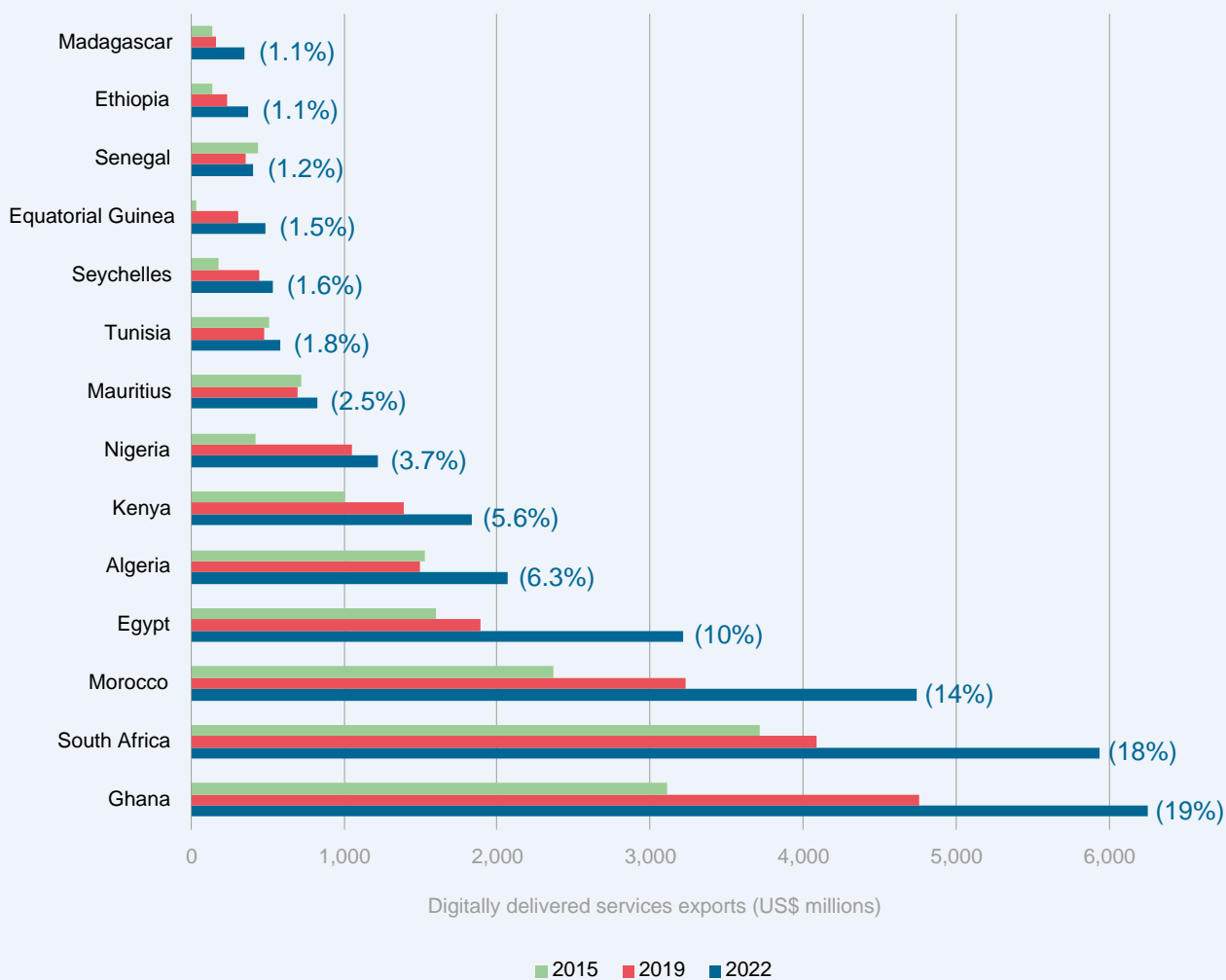
of ICT goods in total merchandise trade remains limited due in part to differences in technological development and industrial focus as well as higher tariffs. These economies further experienced a strong decline in the value of both imports and exports of ICT goods 21 m reong r

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and digitally delivered trade. These costs are primarily attributed to poor transport infrastructure and inefficient border crossing procedures<sup>5</sup>. In this context, certain African economies have been performing well in digitally delivered services (see Figure B.8). Ghana, Morocco and South Africa accounted for over half of the region's exports of digitally delivered services in 2022. The growth of these services exports in some economies, such as Egypt, Ghana and Madagascar, has outperformed the rest of the world for several years, driven by the Business Processing Outsourcing (BPO) and IT industries (World Bank and WTO,

2023a). In a simulation using the WTO Global Trade Model, an enhanced use of digital technologies in Africa could lead to a potential increase of over US\$ 70 billion in digital services exports between 2023 and 2040, assuming regions with lower broadband connectivity can reduce trade costs in face-to-face intensive sectors more than regions with better broadband connectivity, where trade costs are already lower on average (World Bank and WTO, 2023a). Other developing economies, such as the Philippines, have also experienced growth in call centres, finance and healthcare services.

Figure B.8: Digitally delivered services in some African economies have expanded significantly in recent years



Source: WTO estimates.

Note: The numbers in parenthesis correspond to each country's share in Africa's exports of digitally delivered services.

(b) Digital trade can open up opportunities for greater participation of MSMEs, women and young people

Social media can enable individuals, including young people and women, and MSMEs to connect with wider audiences and collaborate globally. Online education platforms provide individuals with opportunities to learn and acquire skills from any location. Instant digital translation technology also provides a solution for overcoming language barriers and communication issues. Social media can help empower women and young entrepreneurs by providing platforms for visibility, networking and business growth (Miniesy,

Elshahawy and Fakhreldin, 2022). Technology-enabled crowdfunding platforms can further offer women and young people an alternative means to address their financial constraints by providing a finance mechanism that bypasses the traditional barriers often faced when seeking to access capital. As discussed in Section C, small firms, women and young people need to be able to access and productively use the internet. Digital skills are essential in this context to adapt to the changing requirements of labour markets.

## Endnotes

1. Artificial intelligence refers to the simulation of human intelligence in machines (e.g., machine learning and deep learning). 3D printing, also known as additive manufacturing, refers to the process of making three-dimensional solid objects from digital files. Cloud computing is the on-demand online availability of computing resources, such as infrastructure platforms and software. Blockchain refers to a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a network.
2. These estimates are based on the assumption that what was digitally deliverable in 2015 was also digitally deliverable in 2005.
3. The following high-income economies, based on the World Bank classification, have been excluded from the geographical groupings: Anguilla; Antigua and Barbuda; Aruba; Australia; Austria; Bahamas; Kingdom of Bahrain; Barbados; Belgium; Bermuda; Brunei Darussalam; Canada; Cayman Islands; Chile; Croatia; Curaçao; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; French Polynesia; Germany; Greece; Guyana; Hong Kong, China; Hungary; Iceland; Ireland; Israel; Italy; Japan; Republic of Korea; State of Kuwait; Latvia; Lithuania; Luxembourg; Macao, China; Malta; Nauru; Netherlands; Netherlands Antilles; New Caledonia; New Zealand; Norway; Oman; Panama; Poland; Portugal; Qatar; Romania; Saint Kitts and Nevis; Kingdom of Saudi Arabia; Seychelles; Singapore; Sint Maarten; Slovak Republic; Slovenia; Spain; Sweden; Switzerland; Chinese Taipei; Trinidad and Tobago; United Arab Emirates; United Kingdom; United States and Uruguay.
4. Despite the increased availability of e-books, their usage continues to significantly trail behind that of printed books worldwide (Richter, 2022).
5. For instance, a doubling of the distance between buyers and sellers in Ethiopia and Nigeria has been found to result in transportation costs that are four to five times higher than in the United States (Atkin and Donaldson, 2015).

Governments around the world are increasingly recognizing the potential of digital trade to contribute to economic growth and enhance global competitiveness.

## 1. Improving digital connectivity, ICT infrastructure and digital skills is essential to promote digital trade

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The growth of digital trade relies on reliable and affordable internet access and relevant digital skills. To engage in and reap the benefits of digital trade requires access to fast and reliable internet infrastructure and affordable electronic devices, connectivity subscriptions and electricity infrastructure (to power digital devices). According to IMF



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Digital skills have become essential for workers to navigate the evolving demands of the labour market. The integration of digital technologies in production processes can render some jobs obsolete, threatening job security for certain roles (UNCTAD, 2017b). Labour market policies can support workers in adapting to technological advances and mitigate potential loss of jobs by providing retraining programmes to upskill workers for digital jobs, promoting lifelong learning, addressing time and financial constraints to training participation, tackling unequal access to digital technologies based on employment status, and encouraging firms to train groups at risk of losing their jobs (OECD, 2019b). Employment protection and compensation schemes can also help to alleviate labour market disruptions arising from digitalization. Reducing the costs incurred by workers who are obliged to change jobs can also lower public resistance to digital technological change (WTO, 2017).

collaborative effort among 35 members (including the World Bank and the WTO) to enhance transparency in capacity-building for “eTrade Readiness Assessment”. It serves as a central platform for developing economies to identify potential sources of assistance and connect with potential partners in various areas, including infrastructural support and skills-building (UNCTAD, 2022d).

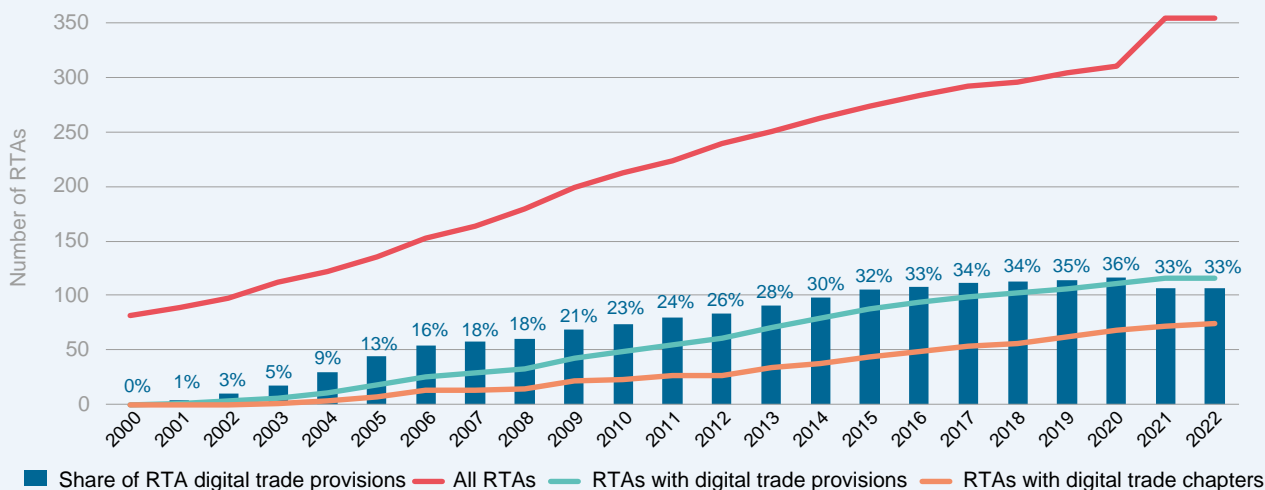
## 2. An enabling legal and regulatory environment coupled with proactive trade policies are essential components of the ecosystem for digital trade

### (a) A robust domestic regulatory framework is crucial for fostering digital trade

A well-designed and effective domestic regulatory framework provides a stable and secure environment for digital trade, fostering trust and confidence among businesses and digital trade.



Figure C.4: A growing number of RTAs have digital trade provisions



Source: López-Gonzalez, Sorescu and Kaynak (2023).

Note: The analysis only considers agreements notified to the WTO and currently in force. RTAs with digital trade provisions are defined as agreements with at least one e-commerce/digital trade provision. Digital provisions are identified from the Trade Agreements Provisions on Electronic-commerce and Data (TAPED) database (accessed August 2022) (Burri, Vasquez Callo-Müller and Kugler, 2022).

### (c) WTO rules already cover digital trade, but some of these rules may need to be updated to adequately address the evolving nature of digital trade.

Digital trade falls within the scope of existing WTO agreements. As mandated by the 1998 WTO Work Programme on Electronic Commerce, most discussions on how WTO rules apply to e-commerce, defined as “the production, distribution, marketing, sale or delivery of goods and services by electronic means” for the purposes of the Work Programme, have concluded that existing WTO agreements cover e-commerce, even without specific references to it (WTO, 2017).<sup>6</sup> While the applicability of the WTO agreements to digital trade is widely accepted, there is still uncertainty regarding whether digitized products are goods or services, and therefore whether the General Agreement on Tariffs and Trade (GATT) or the GATS applies.

The GATS covers digital trade in services. The GATS makes no distinctions regarding different technological means through which a service may be supplied, including electronic means. Measures affecting trade in services through electronic means are generally recognised as subject to GATS obligations and commitments.<sup>8</sup> Obligations such as most-favoured-nation

(MFN) treatment and transparency apply to all services covered by the Agreement whether or not liberalisation commitments have been undertaken. Market access and national treatment disciplines, instead, apply only in sectors where a member has scheduled a specific commitment, and only to the extent of the liberalisation undertaken. As a result, the most advantageous and stable conditions for digital trade in services are achieved when commitments exist and when those are as open as possible. The predictability of conditions for digital trade in services might, however, be limited by the fact that many GATS commitments relevant for digital trade are nearly 30 years old and do not necessarily reflect the actual services market conditions (WTO, 2019).

Trade in digitally ordered goods is subject to the existing WTO rules on trade in goods. The GATT and various other relevant WTO agreements do not distinguish between the manner in which goods are traded and apply to goods purchased online and delivered physically. Trade in digitally ordered goods is therefore subject to the principles of non-discrimination (MFN and national treatment) and transparency, among other things. In addition, several WTO agreements are particularly relevant to trade in digitally ordered goods, including the Customs Valuation Agreement and the Trade Facilitation Agreement (TFA) (see Section C.2.e).

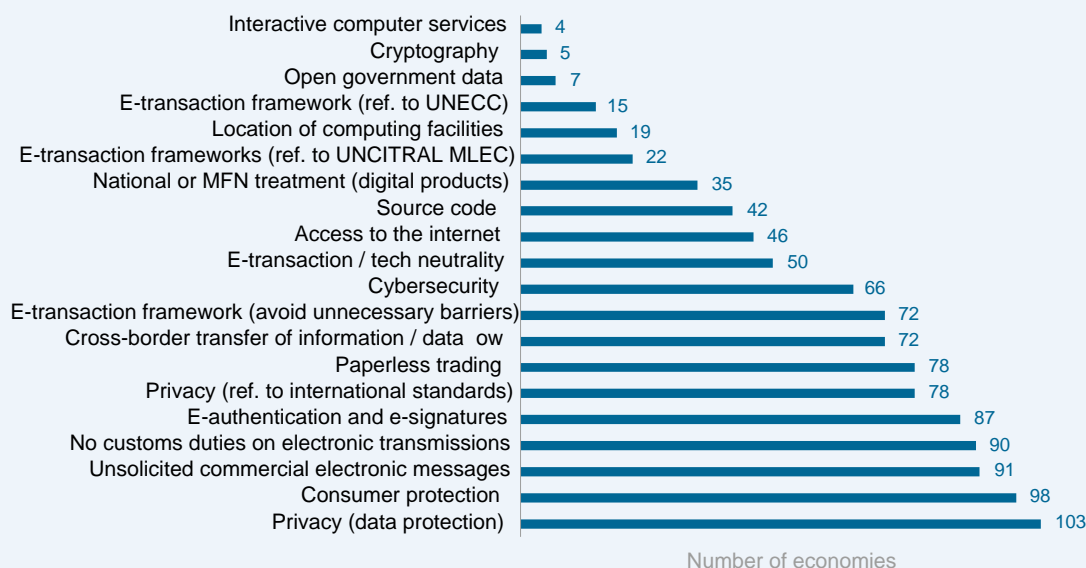
The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) covers trade in intangible digital products. The ownership and transfer of use-rights to digital products like music, software and films largely determine the commercial transaction, making the underlying IP licence crucial in defining the nature of the digital transaction. While the TRIPS Agreement does not expressly address digital trade, it is essentially technology-neutral and extends to products traded online and online commercial activity more generally. TRIPS disciplines on the non-discriminatory availability of IP rights, such as undisclosed information, copyright (including for software), patents and trademarks, balanced enforcement mechanisms, and the scope for competition safeguards, are particularly relevant to digital trade.<sup>13</sup>

A majority of WTO members consider that the existing WTO rules on digital trade need to be updated and complemented to respond to the changing nature of trade and to facilitate digital trade. Under the so-called Joint Statement Initiative (JSI) on E-Commerce, 90 WTO members, including many developing economies and a few LDCs, as of October 2023, are negotiating rules on trade-related aspects of e-commerce.<sup>14</sup> Significant progress has

been made on several sets of disciplines, including electronic signature, online consumer protection and paperless trade. Technical discussions continue on several other issues, such as customs duties on electronic transmissions. The need for special and differential treatment for developing and LDC members is also being considered. Negotiators have also started to address data-related issues as well as questions about the legal status of these talks. The negotiations of the E-Commerce JSI are expected to conclude by the end of 2023.

New international trade cooperation initiatives have been launched to support the participation of developing economies, in particular LDCs, in digital trade negotiations. The “E-commerce Capacity Building Framework” launched by Australia, Japan, Singapore and Switzerland in early 2023 aims to bolster the participation of developing and LDC members in the E-Commerce JSI and help them tap into digital trade opportunities by bringing together a wide range of technical assistance, training and capacity building efforts. One of these capacity-building initiatives is the Digital Advisory and Trade Assistance Fund (DATA Fund), a pilot programme hosted by the World Bank, aimed at fostering trust in digital markets, streamlining online business processes and offering specialized training for policymakers.

Figure C.5: A wide range of digital trade issues are covered in trade agreements



Source: Nemoto and López-González (2021).

Note: The figure identifies the number of economies having negotiated specific types of digital trade provisions in their RTAs. Digital provisions are identified from the Trade Agreements Provisions on Electronic-commerce and Data (TAPED) database (accessed June 2020) (Burri, Vasquez Callo-Müller and Kugler, 2022). UNCITRAL MLEC refers to the United Nations Commission on International Trade Law Model Law on Electronic Commerce. UNECC refers to the United Nations Convention on the Use of Electronic Communications in International Contracts.

## Box C.1

### Broader digital economy agreements are emerging

In parallel to RTAs, some economies have negotiated digital economy agreements (DEAs). These include the Digital Economy Partnership Agreement (DEPA) between Chile, New Zealand and Singapore and the Digital Economy Agreement between Australia and Singapore. As of 2023, five DEAs are in force, while an additional three are signed but not yet in force (López González, Sorescu and Kaynak, 2023).

These agreements cover many of the same digital trade issues addressed in RTAs, but they also go beyond these issues to

include cooperation on artificial intelligence, digital identity and open government data. Provisions in DEAs tend to be “best endeavours” clauses that seek to promote shared values, continued dialogue and cooperation. Moreover, these agreements are often referred to as “living agreements” that aim to deepen mutual understanding of the digital economy and help participants adapt to emerging technologies, business models and regulatory challenges (Honey, 2022).

## Box C.2

### Disciplines on the non-imposition of customs duties on electronic transmissions are frequently included in RTAs

Provisions on the non-imposition of customs duties on electronic transmissions (NICDET provisions) are some of the most common elements in e-commerce chapters. There are nearly as many NICDET provisions as there are e-commerce chapters, signed by a total of 102 economies. 87 of these signed at least one provision that does not tie the commitment to the outcome of the E-commerce Work Programme at the WTO.

Six key observations emerge from the analysis of these commitments (Andrenelli and López González, 2023):

1. The majority of agreements (88 out of 100) do not tie NICDET provisions to the outcome of the WTO E-commerce Work Programme. Most agreements do not specify that the lapse of the multilateral practice would lead to the review of their NICDET provision. The opposite is true for only 12 agreements which explicitly tie commitments to the WTO e-commerce Work Programme.

2. Internal taxation is deemed to be outside the scope of the E-commerce Work Programme. (In 4 (v)20 (e0 (53li)40 (via (v)20 (e0 (53li)7(e0aas rto b0 (v t(v)20 (e8ra9 to y35 (utual unde9l u507>>> BDC 7.9





pronounced for specific economies (Andrenelli and López González, 2023).

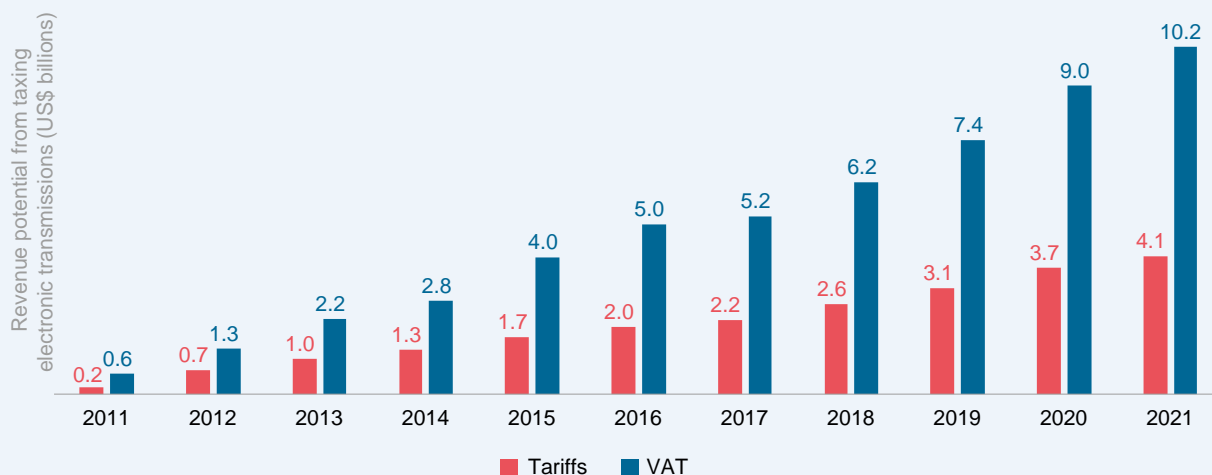
Contrary to tariffs on goods, there is less understanding on how to apply custom duties on electronic transmissions. While raising tariffs generally comes with low administrative costs, it is unclear whether this is also the case for collecting tariffs on electronic transmissions given the limited available information regarding setting up a system for raising these tariffs, and the accompanying administrative and compliance costs.

Domestic taxes represent another way to collect revenue from digital trade that does not discriminate between domestically supplied and imported products, is more uniform across different products, and does not impose a tax burden on intermediate inputs used by domestic producers. Value added taxes (VATs) and goods and services taxes (GSTs) typically apply uniformly and are based on consumption location. VAT/GST can raise revenue from both domestic and foreign firms and apply to broad categories of products. Although a growing number of developing economies are successfully adapting their VAT systems for digital trade, low-income economies continue to face challenges with VAT administration and compliance, including with collecting VAT from non-resident sellers. To close this gap and improve revenue mobilization, further investment and technical assistance for modernizing their tax and customs infrastructure is required by the global community.<sup>22</sup> Learning from good practices, economies may

seek to make digital platforms liable for tax on sales made by online traders that they facilitate, data sharing and cooperation tax authorities (OECD, 2019c).

The moratorium does not affect governments' capacity to generate revenue through non-discriminatory consumption taxes, such as VAT/GST. The adoption of VAT/GST systems has grown significantly in the last 30 years, and as of 2022, 174 economies had implemented such taxes, and more than 120 jurisdictions are either in the process of adapting or considering adapting their VAT administration to address the challenges posed by digitalization (OECD, 2022b). At the same time, the share of trade taxes in total government revenue has continued to decrease in most economies (Aizenman and Jinjarak, 2009; Kowalski, 2006). Taxes on domestic consumption have the advantage of being broader-based, resulting in fewer distortions to production and consumption decisions, lower revenue instability, and potentially greater gains in revenue generation if investment is directed at improving their administrative efficiency (Aizenman and Jinjarak, 2009; Jinjarak, 2015). (ITW 1

Figure C.6: IMF upper-bound estimates of revenue from VAT/GST on electronic transmissions vs. hypothetical revenue from tariffs on electronic transmissions



Source: Hanappi, Jakubik and Ruta (2023).

Note: See the main text for a description of the methodology used.

potential revenue from VAT is approximately 150 per cent higher than potential revenue from customs duties on electronic transmissions in 2021 (see Figure C.6) (Hanappi, Jakubik and Ruta, 2023).<sup>23</sup> Another study, in addition, finds that for most economies, namely 77 out of 106 economies, VAT/GST on computer, audio-visual and information services imports (that were not previously imported through a physical carrier medium) in 2021 (or latest available year) would completely offset potential reductions in customs revenue that could be attributed to the moratorium<sup>24</sup> (see Figure C.7) (Andrenelli and López González, 2023).

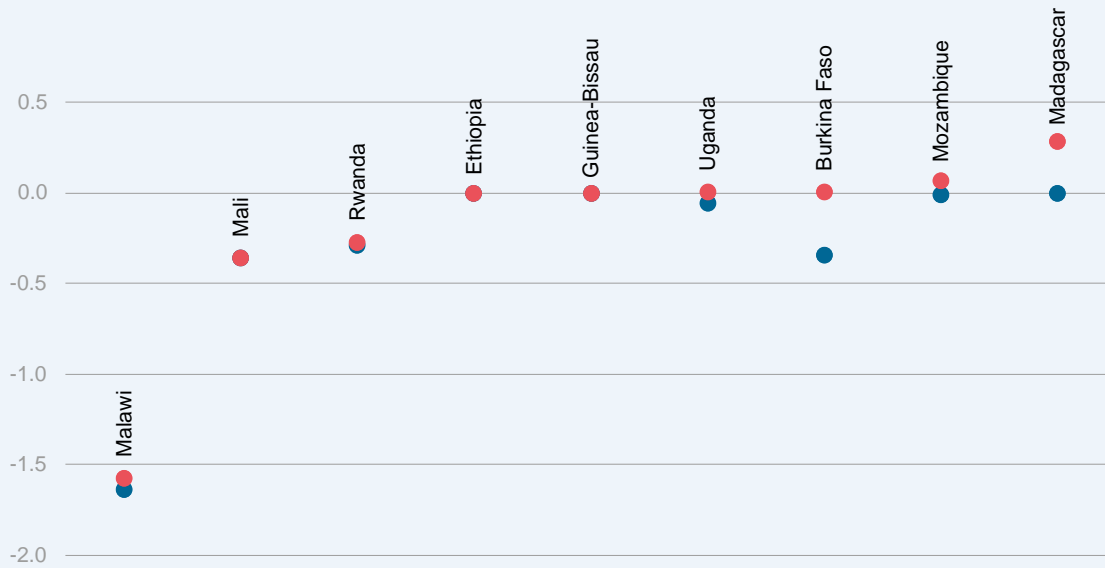
Imposing customs duties on electronic transmissions would reduce relevant digital trade and thereby lower its benefits. Unlike VAT/GST which applies to final consumption, tariffs raise the cost of inputs for production, with implications for business competitiveness. Customs duties on electronic transmissions would likely negatively affect those who can benefit the most from digital delivery or from the use of digital tools to trade, namely MSMEs and women owned traders.<sup>25</sup> It is also worth bearing in mind that the trade and competitiveness impact of potential customs duties on electronic transmissions would depend on the structure of trade and tariffs and on commitments including in RTAs that affect the ability of economies to levy such customs duties.

### (e) Digitally ordered goods trade can benefit from the full implementation of the WTO Trade Facilitation Agreement (TFA)

The speed and cost at which digitally ordered goods are traded and delivered are influenced by the efficiency of customs and logistical procedures. Delays in the clearance of goods, including those ordered digitally, can slow down their cross-border movement and cause logistics difficulties that can lead to significant increases in trade costs. Time delays in connection with customs have been found to increase by 5 to 6 per cent the average trade costs (WTO, 2018). The surge in digital trade and the associated increase in small parcel shipments present new challenges for customs and logistics, necessitating further efficiencies in border clearance procedures.

Trade facilitation tools, enabled by digital technologies, can lower trade costs and boost digitally ordered goods transactions. Trade facilitation tools, such as Electronic Data Interchange (EDI) and Single Window Systems (SWS), improve cross-border clearance procedures. EDI enables the electronic transfer of documents, while SWS create a

Figure C.7: OECD estimates of revenue generated from VAT/GST on growing computer, audio-visual and information services imports offset in most cases hypothetical foregone customs revenue from electronic transmissions









data can flow across borders as freely as necessary and possible, while ensuring transferred data are granted the desired oversight and protection (OECD, 2022a; UNCTAD, 2021b). Data governance and cross-border data flows are addressed in various trade and non-trade-related international fora (WTO, 2018). Some international instruments set out specific rules or recommendations for the transfer of specific types of data, such as the Asia-Pacific Economic Cooperation (APEC) Cross-Border Privacy Rules (CBPR), the Council of Europe's Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (Convention 108), the OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data and the OECD Declaration on Government Access to Personal Data Held by Private Sector. RTAs are also gradually addressing data localization and cross-border data flows, with some explicitly prohibiting data localization and unnecessary barriers to cross-border data flows while exempting measures affecting data flows to achieve a legitimate public policy objective. The development of international standards on specific technologies, such as those developed by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), further contributes to facilitating interoperability and data exchange between systems and regions.

More international cooperation is needed for developing economies to access shared best practices, technical assistance and funding to overcome data-related challenges. As economies allocate more domestic resources to develop their capacities for creating and capturing data value, developing economies, in particular LDCs, face financial and technical challenges. Limited infrastructure in LDCs can hinder data collection and processing (see Section C.A.1). The lack of skilled personnel trained in data analytics and science makes it also hard to interpret and use data effectively. Additionally, financial constraints, which have been exacerbated by the COVID-19 pandemic, restrict the adoption of modern technologies and platforms. The absence of comprehensive data protection regulations can further stifle trust and willingness to share data, further impeding the creation of data-driven value in these economies.

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developed economies have introduced or adapted their competition laws and promote a competitive, open and accessible digital economy (Fredriksson and Moreira, 2023; UNCTAD, 2021a). Moreover, a number of jurisdictions have implemented, or proposed, new regulations for digital markets to foster competition and regulate large platforms' market power (OECD, 2021). Some of these reforms foresee a mechanism that uses predefined criteria to designate the market players subject to the regulation and to enable swift and targeted enforcement of the relevant provisions. Such provisions generally take the form of a code of conduct, or, alternatively, are set out as principles that will be tailored to specific designated companies.

While a few emerging economies have revised their competition law to intensify the scrutiny of digital platforms, others are still in the process of adopting digital competition law. In response to changing acquisition trends in the tech sector, several governments have also adapted their merger rules by introducing or clarifying thresholds and guidelines or implementing automatic merger notifications. Besides legal reforms, some competition authorities have opted for a softer approach by providing business with clear directives and legal certainty by establishing guidelines that define acceptable conduct for digital platforms.

Developing competition, digital markets and platforms in emerging economies (al promote a competitive, open and accessible digital economy (Fredriksson and Moreira, 2023; UNCTAD, 2021a). Moreover, a number of jurisdictions have implemented, or proposed, new regulations for digital markets to foster competition and regulate large platforms' market power (OECD, 2021). Some of these reforms foresee a mechanism that uses predefined criteria to designate the market players subject to the regulation and to enable swift and targeted enforcement of the relevant provisions. Such provisions generally take the form of a code of conduct, or, alternatively, are set out as principles that will be tailored to specific designated companies.

## Box C.3

### Electronic payments facilitate seamless digital trade transactions across borders

Electronic payments form the backbone of modern trade. They transfer sums between payment accounts using digital devices or channels, including online bank transfers, payment cards, mobile money, QR codes, digital currencies and electronic funds transfers. While domestic digital trade might accommodate electronic payment methods like cash-on-delivery and face-to-face transaction, such approaches are unsuitable for cross-border digital transactions. In some developing economies, in particular LDCs, limited ICT infrastructure, low financial inclusion, regulatory challenges and trust issues can hinder the uptake of electronic payments. Mobile money solutions have, however, gained popularity in some developing regions, filling the void created by a lack of conventional banking services (Suri, 2017).

Navigating through different complex regulatory systems can deter digital trade opportunities. While intermediaries help with currency conversion, regulatory compliance and electronic transfers, conflicting regulations or non-interoperable financial data can reduce transaction efficiency. These challenges increase financial process costs and hinder the digital trade growth potential.

International cooperation can help improve the efficiency of cross-border regulatory frameworks for electronic payments enhancing digital trade. Payment system interoperability is

crucial for enabling faster cross-border transfers and increasing consumer confidence. Aligning domestic security standards in payment transactions with international standards can further contribute to making cross-border electronic payments more efficient. The GATS provides the underlying framework for commitments on trade in services, including electronic payment services (WEF, 2018). A limited but increasing number of RTAs also address electronic

Enforcement of online consumer protection policies is essential to uphold consumers' rights. It requires a robust infrastructure, underpinned by relevant legal and institutional frameworks, to develop, implement and monitor consumer protection policies. With rapid technological changes and innovative deceptive practices, the constant reevaluation of consumer protection policies ensures they remain relevant and effective (OECD, 2022d; UNCTAD, 2021a). Engaging regularly with businesses, consumer groups and experts provides insights and feedback on the evolving digital trade landscape. Adequate human and financial resources for consumer protection enforcement agencies are also important to ensure effective compliance and facilitate redress for aggrieved consumers.

Developing economies, particularly LDCs, face challenges in adopting and enforcing consumer protection policy. Limited financial and human resources

can constrain some developing economies from adopting and implementing online consumer protection policies. The lack of technical expertise and infrastructure in some of these economies can further hinder the formulation and implementation of effective consumer protection policies. In addition, a constrained institutional framework, marked by fragmented regulatory bodies and inadequate legal frameworks, can complicate the establishment of robust consumer protection mechanisms.

The absence and ineffectiveness of online consumer protection limit digital trade opportunities, highlighting the importance of greater international cooperation. As consumers increasingly make online purchases from international vendors, international collaboration is important to ensure digital trade is safe and that malicious online practices, which can operate beyond national borders, are effectively tackled. Online consumer protection is addressed

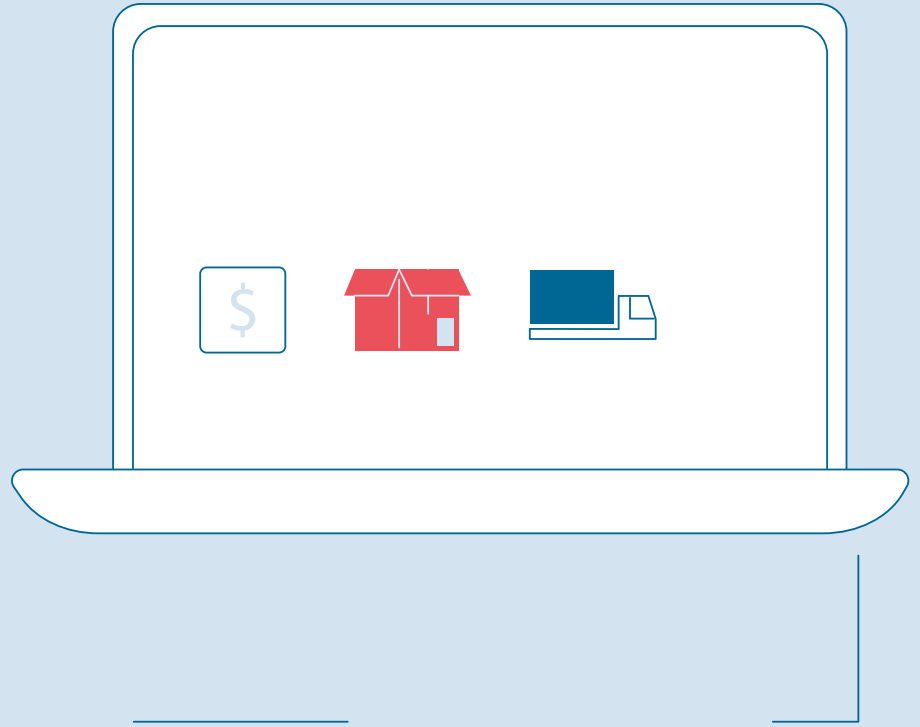
in various trade and non-trade-related international fora. Some international instruments set out guidelines and best practices for safeguarding consumer rights and promoting fair business practices in both traditional and online markets. These instruments include the United Nations Guidelines for Consumer Protection and the OECD Guidelines for Consumer Protection in the Context of Electronic Commerce. RTAs are also increasingly addressing online consumer protection, with some explicitly requiring the adoption of online consumer protection measures (see Chapter C.2.b) and this is an area where multilateral discussions are taking place under the WTO Work Programme on E-commerce and plurilateral negotiations under the JSI. The most common provision on online consumer protection in RTAs promotes cooperation, including the exchange of information and experiences. The exchange of knowledge and best practices on online consumer protection is also taking place in other fora, including APEC and the International Consumer Protection and Enforcement Network (ICPEN).

Enhanced cross-border collaboration among domestic consumer protection authorities is crucial for enforcing online consumer protection and addressing violations across multiple jurisdictions. Yet, such international collaboration remains limited, with only 35 per cent of consumer protection agencies reporting experience in cross-border enforcement cooperation (Muniz Cipriano and Izaguerri Vila, 2020). Most current collaboration is among developed economies and on an informal basis. Inter-agency informal collaboration may be insufficient to adequately address the growing number of cross-border unfair commercial practices and to allow for satisfactory dispute resolution and redress for online consumers. In the rapidly changing digital landscape, the international exchange of experiences can improve the capabilities of national consumer protection authorities, especially in developing economies. International cooperation at regional and multilateral levels could benefit from more regular exchanges of information between international institutions and networks to identify avenues for cooperation and common projects, while avoiding duplication.

## Endnotes

1. Anti-competitive practices can include using information from competitors for an anti-competitive advantage, withholding from other suppliers necessary technical information about essential facilities and commercially relevant information, and applying anti-competitive cross-subsidization practices, where a company uses profits from one segment of its business to unfairly subsidize activities in another segment. Another anti-competitive practice is the resistance of incumbents to offering interconnection to their network for the termination of calls or other services. Universal service obligations provide a safety net of services for portions of the population for which there are insufficient commercial incentives, such as those in low-income, rural and remote areas.
2. The Information Technology Agreement (ITA) expansion, often referred to as ITA-2 or the expanded ITA, refers to an extension of the original ITA adopted in 1996 under the WTO. The expansion was agreed upon in 2015 and includes a range of additional tech products that were not covered in the original agreement, including new-generation semiconductors, optical lenses, medical equipment such as magnetic resonance imaging machines and ultrasonic scanning apparatus, telecommunication satellites, touch screens, software and video game consoles, and advanced microscopes and telescopes.
3. The Annex on Telecommunication establishes disciplines on the access to and use of public telecommunications transport networks and services.
4. These countries represent examples of economies in the 75th percentile of their income group.
5. Digital trade provisions refer to the presence of a provision that can be considered as important for digital trade as identified in Burri and Polanco (2020). Digital trade chapters refer to there being a separate chapter in the trade agreement.
6. See WTO documents WT/MIN(98)/DEC/2 and WT/L/274 (1998). Four terms are especially relevant to the deliberations on digital trade under the WTO agreements: goods, services, electronic commerce, and electronic transmissions. Of these, only “electronic commerce” is defined in the WTO. Neither “goods” nor “services” are defined in the GATT and the GATS, respectively. As for “electronic transmissions”, the term first appeared in the 1998 Declaration on Global Electronic Commerce, but its meaning was not further defined.
7. An increasing number of RTAs include a provision referring to the applicability of WTO rules to digital trade.
8. See WTO document S/L/74. WTO jurisprudence has also consistently found in this sense.
9. According to the GATS most-favoured-nation (MFN) obligation, a member must accord “immediately and unconditionally to services and services suppliers of any other member treatment no less favourable than that it accords to like services and services suppliers of any other country” (GATS Article II).

10. GATS market access disciplines prohibit mainly quota-



# D

## Conclusions

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The first attempt to estimate the foregone customs revenue of the WTO moratorium on customs duties on electronic transmissions was undertaken by Schuknecht and Pérez-Esteve (1999). They used a list of goods that included cinematographic film, newspapers and videogames to provide upper bound estimates of possible tariff revenue losses, based on the assumption that all trade that could be digitized would be digitized. The analysis suggests that the potential foregone revenue effects would amount to less than 1 per cent of total tariff revenue across most economies. The paper also highlighted the strong potential for electronic transmissions to enhance services trade, underscoring that tariff revenue losses would need to be weighed against gains arising from growing trade in services (see also Mattoo and Schuknecht (2000) and Mattoo, Pérez-Esteve and Schuknecht (2001)).

More recently, and at the request of WTO members, the WTO Secretariat (2016) re-examined and updated the analysis of potential tariff revenue losses arising from the WTO moratorium. Using a list of 30 goods at the six-digit harmonised system (HS) and their applied tariff rates, the analysis suggests that the estimated revenue collected from “digitizable goods” (defined as physical goods which have the potential to be digitized and subsequently sent across borders digitally) had fallen from US\$ 1.2 billion in 2000 to US\$ 823 million in 2014 – a global loss nearing US\$ 400 million. Overall, the duties collected on digitizable goods imports amounted to 0.26 per cent of total estimated customs revenue in 2014, with only four developing economies collecting more than 1.5 per cent of total customs revenues from such tariffs.

Banga (2019) used an updated list of 49 goods, also using the HS classification, to estimate the revenue impact of the WTO moratorium, focusing not only on the potential revenue loss arising from these trade flows being fully digitized, but also on the revenue not collected on trade flows that might have already been digitized, such as e-books. The author created a counterfactual projection of the value of trade that might have already been digitized by taking the average growth rate of trade in digitizable goods between 1998-2010 and

extrapolating this for the period 2011-2017. The analysis based on average bound tariffs suggests that potential aggregate tariff revenue losses would amount to US\$ 8 billion for developing economies and US\$ 212 million for developed economies in 2017. The analysis based on effectively applied duties suggests that the foregone revenue would amount to US\$ 2.7 billion for developing economies and US\$ 123 million for developed economies.

Applying the same methodology, Banga (2022) updated these estimates, highlighting that potential foregone revenue for developing and least developed economies in 2020 would amount to US\$ 14.3 billion when calculated using bound tariffs and US\$ 5.5 billion when using applied duties.

Andrenelli and López González (2019) and Evenett (2021) review existing estimates of the fiscal implications of the WTO moratorium, and find that even the highest estimates (reported by Banga (2019)) represent, on average, 0.01-0.33 per cent of overall government revenue.

Köhler-Suzuki (2020) estimates the potential fiscal revenue losses from digitized goods for Egypt and Viet Nam separately using the same definition for digitizable goods used by Banga (2019). The analysis based on effectively applied duties suggests that estimated potential tariff customs revenue from digitizable goods in Egypt grew from US\$ 5 million in 1998 to US\$ 9 million in 2008, and then decreased to US\$ 3 million in 2016. Similarly, the estimated potential tariff revenue for Viet Nam grew from US\$ 15 million in 2002 to US\$ 27 million in 2009, but then decreased to US\$ 17 million in 2018.

Hanappi, Jakubik and Ruta (2023) use a list of 49 digitizable goods based on WTO (2020) and the methodology of UNCTAD (2017a) and Banga (2019, 2022) to assess the maximum fiscal revenue potential of imposing tariffs (effectively applied rates) on flows of digitized imports. The authors find that in terms of total revenue, the potential revenue loss is 0.6 (the) percentage of total revenue, and the potential revenue gain is 0.6 (the) percentage of total revenue.

for high-income economies to 0.33 per cent for low-income economies on average. They argue that collecting VAT from these flows is not only less distortionary, it can also generate higher revenue given appropriate investment in administrative capacity to better capture digitized flows and increase coverage and compliance.

Andrenelli and López-González (2023) calculate the potential revenue implications of the WTO moratorium taking into account existing commitments that economies made that limit the ability to raise tariffs independently from the WTO moratorium, such as includes commitments not to impose customs duties on electronic transmissions as well as preferences granted in RTAs or commitments from the WTO Information Technology Agreement. The analysis does not assume that all trade that can be digitized would be digitized, reflecting the fact that, for many economies, imports of digitizable goods have continued to grow in the past decade. The study also quantifies potential offsetarium,<sup>20</sup>



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