# Digital Trade in Latin America and the Caribbean: Connecting Markets, Powering Growth



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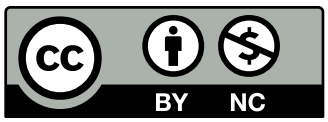
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978-1-59782-604-4 (Paperback)
978-1-59782-603-7 (PDF)




The cut-off date for data included in this report is end-December 2025.

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# Acronyms and Abbreviations

| | |
|---|---|
| AI | artificial intelligence |
| BPO | business process outsourcing |
| CARICOM | Caribbean Community |
| CPAs | consumer protection authorities |
| DEA | digital economy agreement |
| DPAs | data protection authorities |
| DTRR | Digital Trade Regulatory Readiness |
| DTT | double taxation treaty |
| DUCA | Central American Single Declaration (*Declaración Única Centroamericana*) |
| ECLAC | Economic Commission for Latin America and the Caribbean |
| EFTA | European Free Trade Association |
| FDI | foreign direct investment |
| FPS | fast payment systems |
| GATS | General Agreement on Trade in Services |
| GATT | General Agreement on Tariffs and Trade |
| GDP | gross domestic product |
| GNI | gross national income |
| GRIDMAP | Global Regulations, Institutional Development, and Market Authorities Perspective |
| ICTs | information and communication technologies |
| IDB | Inter-American Development Bank |
| IFC | International Finance Corporation |
| IMF | International Monetary Fund |
| ITA | Information Technology Agreement |
| JSI | Joint Statement Initiative |
| LAC | Latin America and the Caribbean |
| LLM | large language model |
| LPI | Logistics Performance Index |
| MSME | micro, small, and medium-sized enterprises |
| OECD | Organisation for Economic Co-operation and Development |
| OECS | Organization of Eastern Caribbean States |

| | |
|---|---|
| PDCC | Central American Digital Trade Platform (*Plataforma Digital de Comercio Centroamericana*) |
| R&D | research and development |
| RTA | regional trade agreement |
| SIECA | Secretariat for Central American Economic Integration (*Secretaría de Integración Económica Centroamericana*) |
| SINPE | National Electronic Payment System (*Sistema Nacional de Pagos Electrónicos*) |
| SIPA | Payment Interconnection System (*Sistema de Interconexión de Pagos*) |
| SPI | Interbank Payment System (*Sistema de Pagos Interbancarios*) |
| STEM | science, technology, engineering, and mathematics |
| STRI | Services Trade Restrictions Index |
| TFA | Trade Facilitation Agreement |
| TiVA | Trade in Value-Added |
| UMIC | upper-middle-income countries |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| VAT | value-added tax |
| WBG | World Bank Group |
| WTO | World Trade Organization |

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# Acknowledgments

*Digital Trade in Latin America and the Caribbean: Connecting Markets, Powering Growth* is a joint report by the Inter-American Development Bank (IDB), the World Bank, and the Secretariat of the World Trade Organization (WTO). The report was coordinated and authored by Nadia Rocha and Christian Volpe Martincus from the IDB, Melissa Metz from the World Bank, and Antonia Carzaniga from the WTO, with substantial inputs from Kati Suominen and Bernardo Díaz de Astarloa, Martín Molinuevo (World Bank), and Niccoló Comini (World Bank), and Shradha Bhatia (WTO). The report was produced under the guidance and support of Anabel González (Vice-President of Countries and Regional Integration), Fabrizio Opertti (Manager Productivity, Trade and Investment) at the IDB; Óscar Calvo-González (Regional Director), Denis Medvedev (Global Director for Trade, Competition and Business), Sebastien Dessus, Yira Mascaró, Stefka Slavova, and Yolanda Martínez Mancilla (Practice Managers) at the World Bank; and Johanna Hill (Deputy Director-General) at the WTO.

The authors are grateful to colleagues from all three institutions for their comments and guidance at various stages of the drafting and publication process. At the IDB, the authors wish to thank Agustina Calatayud, Ubaldo González de Frutos, Gabriela Martínez, Miguel Porrúa, Pau Puig Gabarró, Yuri Soares, Rodolfo Stucchi, and Levi Zegarra for their valuable inputs and contributions, and Eduardo Cavallo, Rodrigo Contreras Huerta, Sandra Corcuera Santamaría, Jesica De Angelis, Rodrigo Deiana, Pablo Marcelo García, Luciana García, Vanesa García Sánchez, Sebastián González Saldarriaga, Jaime Granados, July Jiménez Orjuela, Philip Keefer, and Mónica Maday for their helpful comments and suggestions. At the World Bank, the authors would like to express their gratitude to Ma. Charmaine Robles Crisostomo, Elena Gasol Ramos, Arlan Zandro Ilagan Brucal, Douglas Randall, Guillermo Rodriguez Ruiz, Marc Tobias Schiffbauer, and Tingting Juni Zhu for their valuable inputs; Roberto Echandi, Woori Lee, William Maloney, and Christian Zambaglione for their helpful suggestions and comments; and Sara Hormigo Carnero for support with partnerships engagement. At the WTO, the authors are grateful to María Álvarez de Cozar, Eddy Bekkers, Ishrat Hans, Hryhorii Kalachyhin, Eric Ng Shing, Stela Rubínová, Zsofia Tvarusko, and Gauri Tyagi for their valuable inputs, and Barbara d'Andrea, Stefania Gallo, Emmanuelle Ganne, Mark Henderson, Tomasz Koziel, Joscelyn Magdeleine, Juan Marchetti, Jesse Nicol, Martin Roy, Chibole Wakoli, and Xiaodong Wang for their helpful comments and suggestions; and Anthony Martin for support with partnerships engagement.

The authors also thank Ignacio Camdessus, Dolores Arrieta, and Victoria Patience for outstanding and timely graphic design and proofreading, and María Lidia Viquez (IDB) for her excellent management of the publication process.

# Overview

# Digital Trade: Accelerating Transformation in Latin America and the Caribbean

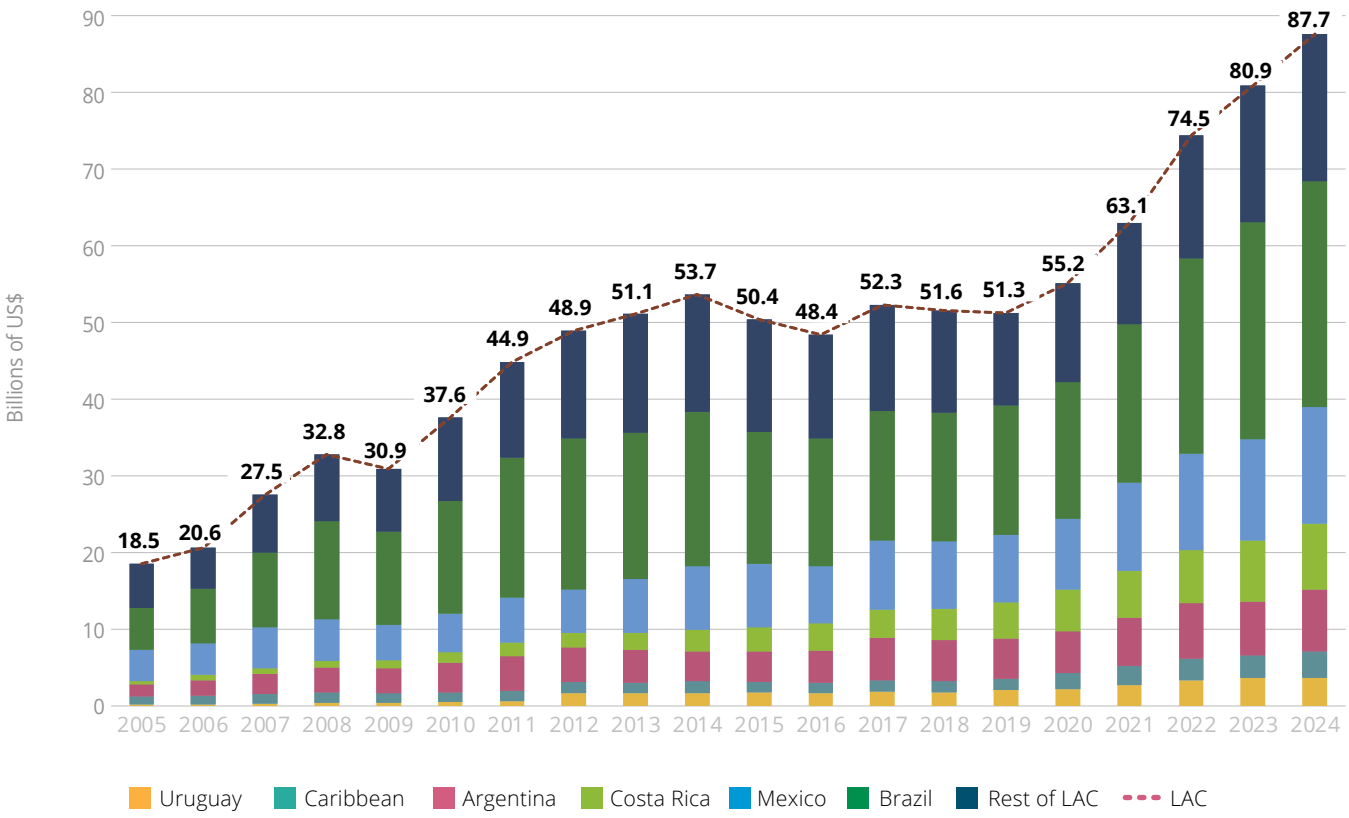
Digitalization is rapidly reshaping which goods and services are exchanged across borders and how this takes place, making digital trade a key driver of international trade. "Digital trade" refers to all international trade transactions that are ordered and/or delivered online.[1] "Digitally ordered trade" specifically refers to cross-border purchases of goods and services made through computer networks designed for placing orders, such as buying a T-shirt from an overseas manufacturer's website or booking a restaurant abroad via a digital platform. By contrast, "digitally delivered trade" refers exclusively to services trade transactions delivered remotely over computer networks, such as IT support, banking, and education.[2]

Any assessment of digital trade patterns must contend with the limited availability of internationally comparable data. Given these constraints, most of the analysis in this report focuses on trade in digitally delivered services, the best-documented segment of digital trade. Since 2005, the global export value of this segment has nearly quadrupled, reaching US$4.78 trillion in 2024 and accounting for 14.8% of global exports, far outpacing the growth of goods (4.5%) and other services (4.9%) exports. This rapid expansion underscores the opportunities digital trade offers for countries seeking new drivers of growth.

1 This statistical definition comes from the *Handbook on Measuring Digital Trade: Second Edition* (IMF, OECD, UNCTAD, and WTO, 2023).

2 WTO Members hold different views about whether all digitally delivered trade is trade in services.

**FIGURE O.1. Digitally delivered services exports in LAC countries, 2005–2024 (billions of US$)**




Source: WTO (2024a).

Over the past two decades, there has been a remarkable surge in exports of digitally delivered services from Latin America and the Caribbean (LAC). Between 2005 and 2024, the region's exports of these expanded nearly fivefold, rising from US$18.5 billion to US$87.7 billion. This growth has outpaced both other service exports and goods exports growth from the region, demonstrating the dynamism and resilience of digital trade, even in the face of global shocks such as the Covid-19 pandemic. In fact, after some stagnation in the late 2010s, digitally delivered services have experienced particularly strong growth since the Covid-19 pandemic. In 2024, digitally delivered services accounted for around one-third of all commercial services exports from the region, up from one-fifth in 2005. Countries like Brazil, Mexico, Costa Rica, and Argentina have emerged as leaders, with Brazil alone exporting US$29.4 billion in digitally delivered services in 2024 (figure O.1).

Foreign direct investment (FDI) has played an important role in expanding digital services trade in LAC, enabling access to new technologies and expertise. FDI inflows to sectors with strong digital delivery

models[3] have grown sharply, averaging US$3.41 billion in 2010–2014, rising to US$3.79 billion in 2015–2020, and reaching US$10.853 billion in 2021–24. Data processing and related services accounted for 67.2% of these inflows, with countries such as Jamaica, Costa Rica, and Barbados benefiting significantly. This investment has helped LAC countries expand their participation in digitally delivered services trade.

Despite this impressive progress, the region's share of global digital trade remains modest and below its share in other trade modalities. In 2024, LAC's digitally delivered services exports represented just 2% of the world total, lagging behind its 2.9% share of global trade in services and its 6.4% share of total trade in goods. LAC's share of global trade in digitally delivered services also trails that of other regions, with Europe, Asia, and North America accounting for 53%, 23%, and 18%, respectively, in 2024.

Moreover, while digitally delivered services exports represent a significant share of gross domestic product (GDP) in some LAC countries—such as Costa Rica (9%), Dominica (8%), Belize (6%), Grenada (6%), and Antigua and Barbuda (6%)—they still account for 1% or less of GDP in most LAC economies.

These trends and patterns point to considerable room for improvement and further expansion of this dynamic trade modality in the region.

## Digital trade: Harnessing opportunities for all

The expansion of digital trade has brought tangible benefits to the region. By enabling businesses to reach customers beyond their borders, digital tools have opened up new markets and increased trade in both goods and services. Consumers now enjoy access to a broader array of goods and services, often at more competitive prices. For many firms—especially micro-enterprises and those led by women (IFC, 2021; Nextrade Group, 2022)—digital trade has provided a pathway to international markets that was previously out of reach (Lendle et al., 2015; Alaveras and Martens, 2016; Fernandes et al., 2019; Carballo et al., 2022).

The economic impact of this transformation is significant. Like traditional forms of trade, digital trade fosters growth by improving resource allocation, enabling economies of scale, and promoting innovation

3 These sectors were selected by a group of World Bank experts and include, from highest to lowest in the region: data processing, hosting, and related services; custom computer programming services; software publishers (except video games); business support services; professional, scientific, and technical services; motion picture and sound recording industries; other telecommunications; other (software and IT services); Internet publishing, broadcasting, and web search; video games, applications, and digital content; computer system design services; other support services; architectural, engineering, and related services; accounting, tax preparation, bookkeeping, and payroll services; all other information services; other computer-related services; and specialized design services.

and the diffusion of technology (IMF, OECD, UNCTAD, World Bank, and WTO, 2023; Zhao et al., 2025). It creates new patterns of comparative advantage, diminishing the importance of transport infrastructure for trade in digitally delivered services and raising the significance of digital infrastructure, and promotes diversification, thereby building resilience to economic shocks (World Bank and WTO, 2023). Furthermore, importing many digitally delivered services—such as business, telecommunications, and financial services—has helped local firms enhance their competitiveness and improve the quality of their own exports.

New advances, such as artificial intelligence (AI), can play a key role in further expanding digital trade and its benefits in LAC. AI can reduce trade costs in general, particularly those associated with transport and logistics, administrative border processing, and information frictions, thereby favoring an increase in digitally ordered goods trade. Thus, for instance, large language models (LLMs) and machine learning can help optimize processes within customs and other border agencies by enabling accurate automated product classification for small shipments and more effective risk management systems (Marra de Artiñano et al., 2025). AI can drive growth in digitally delivered services trade by making information-intensive services more tradable across borders. It can also increase demand for supporting services, such as cloud computing and data processing, which are often delivered remotely (WTO, 2024c). Taking full advantage of the benefits of these technologies depends on countries' capacity to process data and develop technical skills (OECD, 2024; WTO, 2025).

As digital trade continues to expand, policymakers will need to implement targeted, complementary interventions that not only enable their economies to seize the opportunities of digital trade but also address any adjustment costs, promote inclusive outcomes, and ensure that the benefits of digital trade are maximized and widely shared.

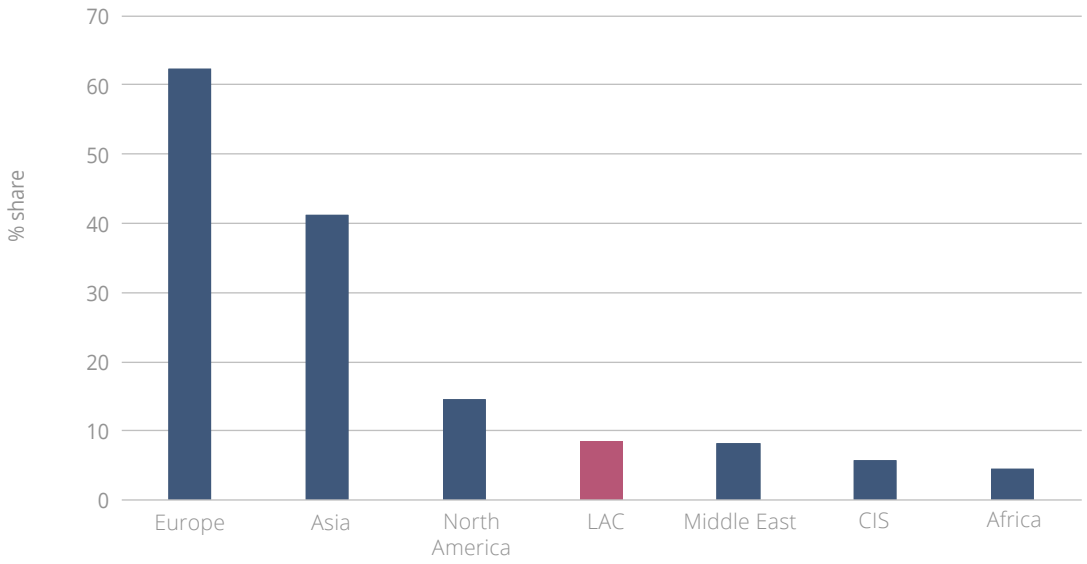
## Extra- vs. intraregional digital trade: Untapped opportunities for regional integration

The United States is LAC's primary trading partner in digitally deliverable services:[4] it is both the top destination for exports, accounting for 34.4% of the region's total, and the main origin of imports, representing 42.2%.

4 Digitally deliverable services differ from digitally delivered services: the former are services that may be delivered remotely over computer networks, while the latter are actually delivered this way. Estimates of the total value of digitally deliverable services will be greater than (or equal to) the total value of services that are digitally delivered.

Digital trade within LAC itself remains relatively limited. In 2023, the value of intraregional trade in digitally deliverable services amounted to just US$7.8 billion. This represented only 8.4% of the region's total exports of digitally deliverable services and 5% of the respective total imports. Likewise, LAC's share of intraregional exports of digitally deliverable services is notably lower than the corresponding share for goods, which stands at 15%. Relative to other regions, LAC's share of intraregional exports of digitally deliverable services is significantly lower than those of Europe (62.4%), Asia (41.3%), and North America (14.7%); comparable to those of the Middle East (8.2%); and higher only than those of the Commonwealth of Independent States (CIS) (5.7%) and Africa (4.5%) (figure O.2).

**FIGURE O.2. Share of intraregional digitally deliverable services exports in total digitally deliverable services exports, 2023**

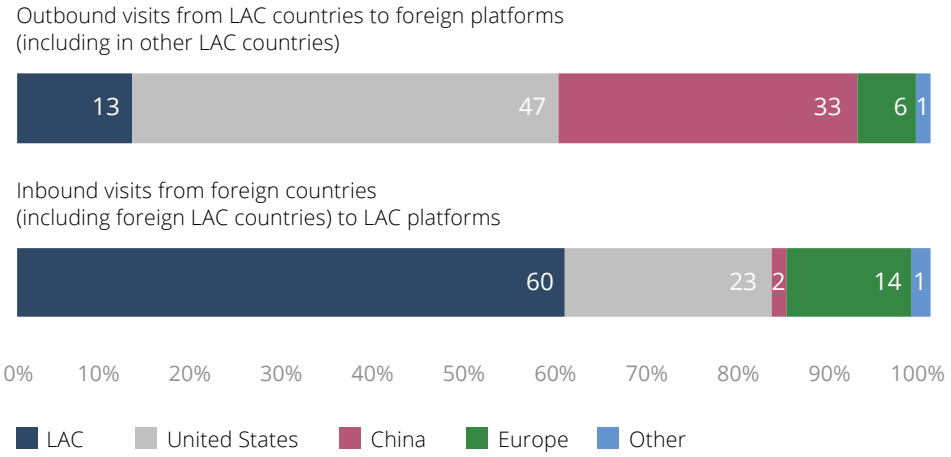



Source: WTO and OECD (2024).

The breakdown of intraregional digital trade varies across LAC's subregional blocs. Mercosur economies, for example, accounted for nearly half of all intra-LAC trade in digitally deliverable services in 2023, with more than half of this occurring within the bloc itself. The Pacific Alliance and the Central American Common Market also play important roles, contributing 21% and 16% of intraregional trade in digitally deliverable services, respectively. Within these blocs, trade among member countries accounted for 31% of intraregional trade in the Pacific Alliance and 24% in the Central American Common Market. This share was even higher in the Caribbean Community, at 38%.

When examining digitally ordered goods, a distinct pattern emerges.[5] In 2023, on average, 60% of inbound web traffic to e-commerce platforms in LAC originated from other countries in the region, underscoring the importance of regional markets for online retailers.[6] The United States was the second-largest source (23% of the total), followed at some distance by Europe (14%) and China (2%). Looking at outbound traffic helps complete the picture from the import side. While intraregional flows exist, visits by LAC consumers to platforms in other LAC countries account for only about 13% of total outbound traffic, a relatively small share when compared to visits to extraregional platforms. The majority of these visits were to the United States (47%) and China (33%), reflecting the importance of these markets and platforms to LAC online shoppers. These results indicate substantial untapped potential for digital trade within the region (figure O.3).

**FIGURE O.3. Key sources and destinations of inbound and outbound web traffic to LAC e-commerce platforms, 2023, (%)**




Source: ECLAC (2022) and International Trade Centre (https://www.cepal.org/en/notes/latin-america-and-caribbean-marketplace-explorerlacme).

Unlocking the potential of digital trade both within and beyond the region and making it work as an engine for inclusive growth will require supportive trade policies, better and greater alignment of regulations, continued investment in digital infrastructure, as well as targeted support for businesses seeking to expand their digital trade activities to overcome obstacles associated with market failures that limit them.

5 Comprehensive data on trade in digitally ordered goods are limited. A proxy used in this report is international web traffic to e-commerce platform.

6 This average is largely driven by economies outside the Caribbean, where this pattern is less pronounced.

# Unlocking the potential of digital trade in LAC

A range of factors play a critical role in shaping countries' ability to participate in digital trade. These include the design and uptake of relevant regulations and trade disciplines, the quality of digital infrastructure and connectivity, and the availability of cross-border digital payments. Other key factors include the effectiveness of trade facilitation policies that streamline and digitalize trade procedures and of export promotion policies that address information frictions. Firms' capabilities, digital skills, and access to finance are also important. Empirical evidence focusing on some selected areas suggests that targeted improvements—such as adopting more open and supportive digital trade regulations, expanding digital infrastructure (for example, data servers and broadband access), and increasing the share of the workforce with postsecondary education—can lead to substantial gains in digitally delivered services exports across key sectors (Rocha et al., forthcoming).

To fully capitalize on the opportunities for inclusive growth in the digital economy, LAC countries must then address persistent gaps in these critical enablers. Doing so requires coordinated efforts both within and across countries.

This report explores the opportunities and challenges posed by digital trade, describes the digital trade landscape in LAC, and takes stock of the key drivers and constraints affecting the region's ability to harness the benefits of this trade modality. Drawing on analysis, it then outlines a set of recommendations and actions that could help LAC countries participate more fully in digital trade.[7] How countries combine and sequence these actions will depend on their current state of digital trade development and the specific challenges they face.

## Foster open and competitive markets for backbone goods and services

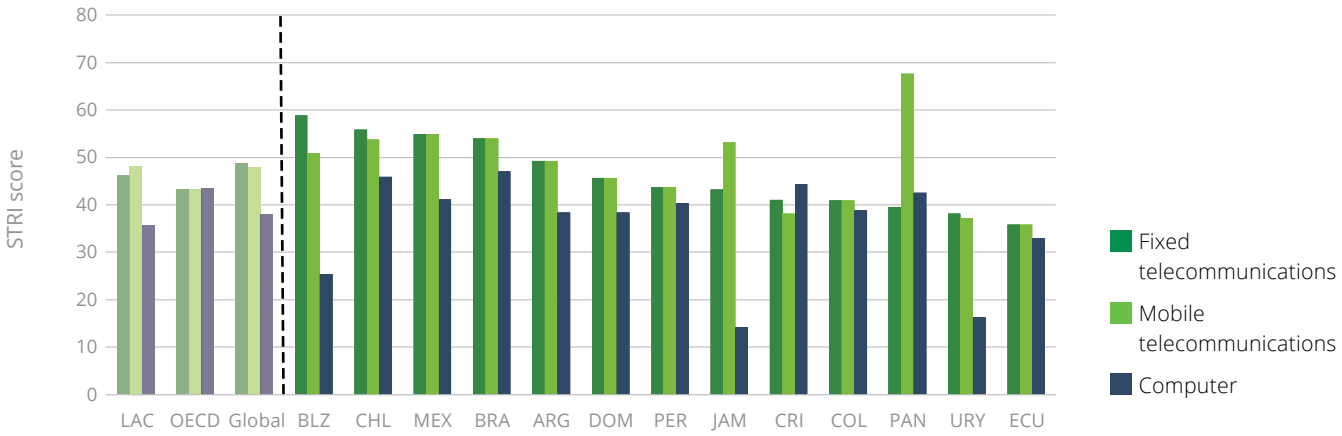
The backbone infrastructure for digital trade comprises a wide range of services, notably telecom and computer services, as well as ICT goods such as computers and mobile phones.

The trade regimes of the 13 LAC countries for which analytical information is available are generally slightly more open than the global average in telecommunications services and, in particular, computer services. In other digital trade-enabling service sectors, their trade regimes are on par with global openness levels, except for distribution services, which are comparatively less open. There is heterogeneity across countries, though. In the ICT service sectors, for instance, Uruguay and Ecuador are among the most open. Others, in contrast, still maintain barriers, such as nationality requirements, or exhibit

7 These are recommendations from the IDB and the World Bank. The WTO Secretariat does not offer trade policy advice or recommendations.

regulatory gaps (including a lack of rules on resale rates, mobile number portability, or competition laws), which hinder effective competition in those sectors (figure O.4).

**FIGURE O.4. Fixed-line, mobile, and computer services trade restrictions indexes for LAC countries**




Note: The global STRI is the average score across 134 economies in the World Bank–WTO database as of February 2025.

Source: Authors' calculations using the World Bank–WTO Services Trade Restrictions Index. See https://itip-services-worldbank.wto.org/default.aspx.

However, for the most part, trading conditions for the backbone services of digital trade are not guaranteed in LAC. At the WTO, the region has bound its trade regime in relatively few relevant sectors, with the exception of telecommunications services, and has done so at a relatively shallow level of liberalization. Moreover, only about half of LAC countries have subscribed to the procompetitive disciplines in the Basic Telecommunications Reference Paper. Likewise, very few have adhered to the disciplines on Services Domestic Regulation, aimed at improving procedures for authorizing the operations of service suppliers, including those involved in digital trade.

On the other hand, most LAC economies have pledged to take on board the disciplines of the plurilateral Investment Facilitation for Development Agreement negotiated at the WTO, which seek to improve investment procedures and facilitate the operations of investors across all economic sectors, including those that are key to digital trade.

Eliminating tariffs on ICT goods can lower their cost and promote greater accessibility to and adoption of these technologies worldwide. Only nine LAC countries have eliminated tariffs under the WTO's Information Technology Agreement (ITA) and guaranteed them at a rate of 0 (Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and Peru). In the rest of

the region, applied tariffs range from 1% in Mexico to more than 10% in countries such as Brazil, with most countries in the range of 4% to 8%. Although most of these countries have bound their duties on ITC goods in the WTO, many have set them at above 30%.

### Proposed actions

- Foster competition and investment in digital trade-enabling service sectors, including by leveraging the predictability provided by the General Agreement on Trade in Services (GATS) and its disciplines on Services Domestic Regulation (see also the proposed actions on digital infrastructure and connectivity below).

- Consider adopting the disciplines of the plurilateral Investment Facilitation for Development Agreement negotiated at the WTO, as many LAC countries have already pledged to do.

- Reduce or eliminate tariffs on ICT goods, including by joining the ITA, as some LAC Members have done.

## Strengthen the legal and regulatory foundations for digital trade

Digital trade requires modern, balanced regulations aligned with best practices and international standards that are not unduly restrictive, such that they enable cross-border transactions while ensuring security and consumer trust. Effective regulatory frameworks support digital markets and digital trade by facilitating international online sales, providing clear rules for digital operations—such as e-signatures and cross-border data transfers—and protecting data and privacy. In contrast, overly restrictive policies, like unwarranted data localization mandates, can raise costs and hinder competitiveness.

LAC countries are generally on par with high- and upper-middle-income economies in some aspects of digital trade regulatory readiness, in that rules on e-documents, e-signatures, and data protection have been widely adopted. However, only a minority have comprehensive cybersecurity frameworks, and regulations clarifying the legal liability of platforms for content or products offered by their users (intermediary liability) remain scarce in the region. Most LAC countries have adopted adequacy-based frameworks for cross-border data flows, particularly the Andean and Southern Cone countries.[8] Moreover, the entire region appears to embrace openness in digital trade, with only a few limited data localization requirements in place (figure O.5).

8 Adequacy-based frameworks allow data to be transferred to countries that feature protections for personal data that are substantially equivalent to the those of the "home" country.

## FIGURE O.5. Regulatory readiness for digital trade in LAC




Source: World Bank (2025a).

Note: The color and size of bubbles represent regulatory readiness in each country or grouping by category, based on the share (in quintiles) of positive answers in that category, ranging from 0 to 100%. Data as of March 2024.

The OECD average includes Australia, Czechia, Estonia, France, Israel, Japan, Korea, Latvia, Lithuania, New Zealand, Norway, Slovenia, Switzerland, Türkiye, the United Kingdom, and the United States.

Paperless trade is covered in the section on trade facilitation.

International cooperation on these issues has intensified. Many have been the focus of WTO Members' deliberations under the Work Programme on Electronic Commerce, and they are also addressed in the Agreement on Electronic Commerce, which a group of WTO Members has negotiated and is seeking to incorporate into the WTO's rulebook. However, the readiness of LAC countries to adopt the disciplines of the Agreement on Electronic Commerce remains limited at present.

### Proposed actions

- Adopt a balanced framework for cross-border data transfers that minimizes costs for firms when moving data internationally while ensuring adequate safeguards, such as the protection of personal and other sensitive data.
- Develop and enforce robust cybersecurity and data protection laws that align with international standards.
- Promote the alignment or interoperability of digital regulations, including data privacy and AI governance, through international cooperation and trade agreements.
- Consider adopting the disciplines contained in the stabilized text of the plurilateral Agreement on Electronic Commerce negotiated at the WTO.
- Adopt clear guidelines for platform liability that follow best practices.

## Strengthen digital infrastructure and connectivity to improve internet access, affordability, and participation in digital trade

World-class internet and broadband connections are critical enablers of digital trade. LAC economies have made significant progress on adopting and enhancing internet connectivity in the past two decades. However, they continue to face challenges that impact the development and operations of such infrastructure and its ability to support the region's growing digital economy and trade. These include the availability of fiber optic broadband, regulatory complexities, and energy concerns. LAC economies have frequently made statements regarding these factors during deliberations on the WTO's Work Programme on Electronic Commerce.

Internet usage in LAC remains uneven: only in Chile and The Bahamas does the share of the population using the internet exceed 90%, while in most Central American, Andean, and Caribbean countries, usage rates are below 80% (figure O.6). In terms of mobile access, 4G coverage is widespread across

the region. However, 5G remains in its early stages of development: only the Dominican Republic currently exceeds 70% coverage. To keep pace with developments in more digitally advanced economies, the region needs to accelerate the deployment of 5G networks.

Affordability remains another key challenge in some LAC economies. Fixed broadband is extremely expensive in countries like Haiti, costing 38% of gross national income per capita (GNI), and also remains notably high in Argentina (14%) and Honduras (11%). By contrast, it is much more affordable in countries such as Mexico and Guyana (below 2%).

Data centers are the core infrastructure for storing, processing, and transmitting the data generated by digital activities. They house the servers and infrastructure that enable businesses to perform the core functions of digital trade—such as managing inventory, maintaining customer data, and processing payments—in a cloud-based environment rather than on local servers. Data centers have only a limited presence outside Brazil, Mexico, and Chile, which might impact reliable and secure access to data, increase latency, and slow the adoption of cloud- and AI-based tools. At the same time, if the regulatory environment facilitates cross-border data flows, firms can access data storage and computing facilities remotely. Accordingly, whether data centers need to be located locally will depend on each country's specific circumstances.

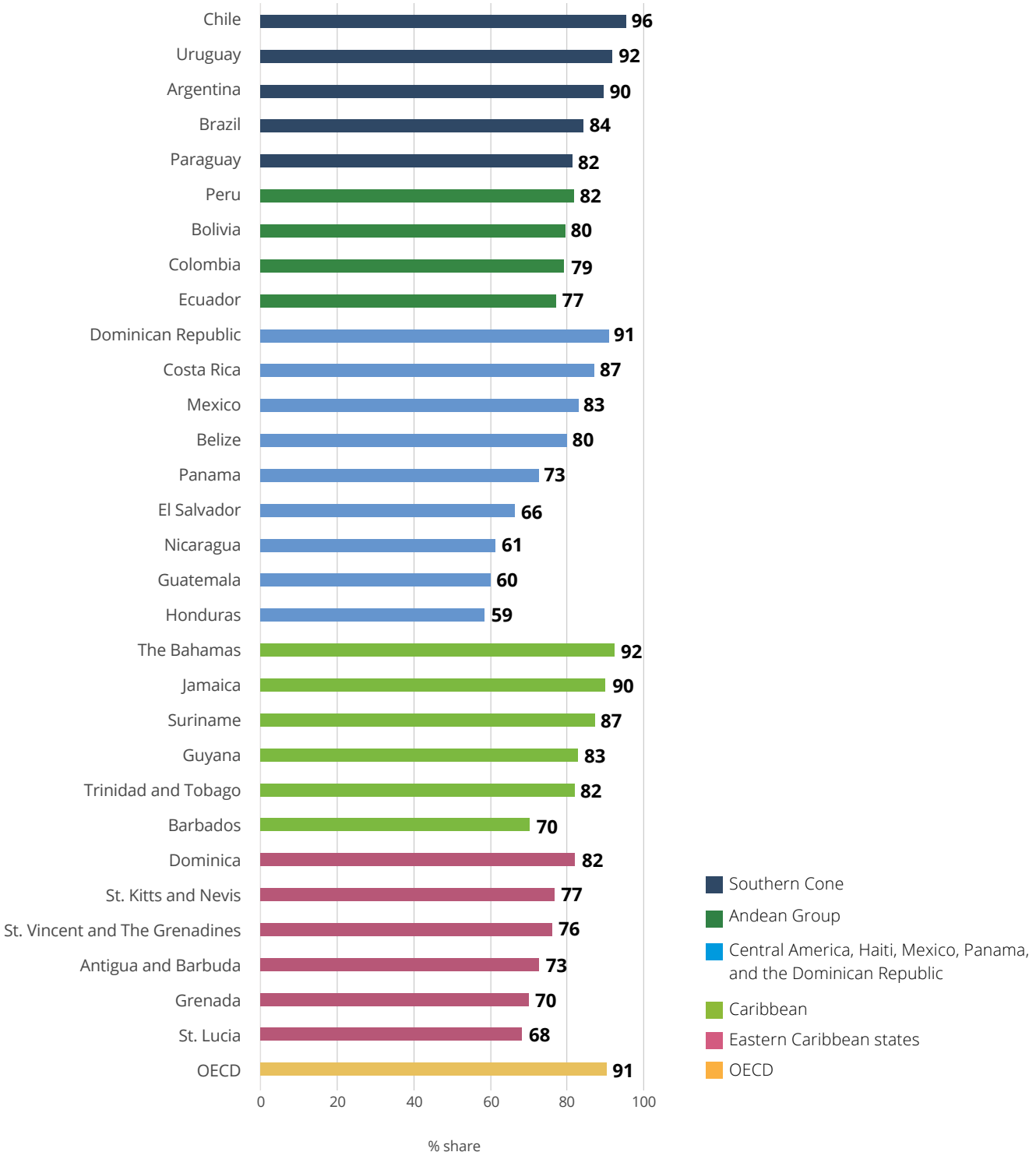
**Proposed actions**

- Foster competition, investment, and regulatory reforms in telecom markets, including by using tools such as the GATS and its Telecommunications Reference Paper to lock in reforms and guard against costly policy reversals.

- Expand high-speed broadband and mobile networks, prioritizing underserved regions and leveraging public–private partnerships.

- Improve data center infrastructure and power grids to support technologically advanced, digitally delivered services.

## FIGURE O.6. Share of population using the internet in LAC, 2024




Source: ITU (2025).

## Modernize cross-border payment systems

Digital payments are a key enabler of digital trade, providing the rails for affordable, fast, transparent, and accessible transactions. Widespread access to digital payments is needed to facilitate the remote person-to-business (P2B) and business-to-business (B2B) transactions that support digital trade. Financial inclusion has improved in LAC: 74% of adults have a transaction account. However, only 20% make online P2B payments. Fast payment systems exist in over a dozen countries in the region, but cross-border payments remain slow and costly.

Trade regimes for payment services are generally more open in LAC than the global average. However, only around half of the region's economies have guaranteed them to some extent in the WTO.

**Proposed actions**

- Foster open, competitive payment markets, including by guaranteeing trade regimes under the GATS.
- Align regulatory requirements for cross-border payments to ensure a level playing field for all providers.
- Accelerate migration to the ISO 20022 standard for payment systems and promote interoperability among payment systems.

## Improve logistics, streamline border processes, and adopt modern technologies to support digital trade in goods

Efficient logistics and custom procedures are fundamental to the success of e-commerce because they enable goods to be moved across borders rapidly, reliably, and cost-effectively. This, in turn, is essential for meeting the expectations of both online buyers and sellers. However, the quality of logistics infrastructure and services in LAC still lags behind that of Organisation for Economic and Co-operative Development (OECD) countries in critical areas such as transport infrastructure, shipment arrangements, logistics service competitiveness, and tracking capabilities (World Bank, 2023).

Trading conditions in service sectors that enable digital goods trade, such as transport or postal and courier services, are slightly more open in LAC than the global average, albeit with significant variations at the individual country level. All the same, they are rarely guaranteed at the WTO.

Most LAC governments have worked to facilitate goods trade through the simplification, harmonization, and digitalization of trade procedures and have made commitments under the WTO Trade Facilitation Agreement (TFA). The vast majority have ratified the TFA and are aiming to fully implement it by 2038.[9]

These policies have had significant positive effects on international trade for firms and countries (Volpe Martincus, 2016). However, despite this progress, there are still significant bottlenecks in the administrative processing of trade flows by customs and other border agencies. This results in longer-than-necessary processing times and higher trade costs, leading to difficulties for firms trying to meet demands for speed and reliability in e-commerce. Postal services are vital for business-to-consumer (B2C) e-commerce but also perform unevenly on delivery and traceability, increasing costs for online sellers and customers.

These gaps not only undermine the competitiveness of LAC exporters but also increase unpredictability and complicate returns, making logistics and customs modernization a critical priority for e-commerce growth in the region. This is especially the case because growth in cross-border e-commerce is associated with an exponential increase in the number of low-value international parcels that must clear customs, thereby putting further pressure on customs agencies' limited resources and their ability to appropriately manage risk associated with these flows (Estevadeordal et al., 2020).

### Proposed actions

- Invest in modern logistics infrastructure and last-mile delivery solutions to promote competition in service sectors that enable digital goods trade, including by using tools such as the GATS.

- Fully implement the WTO TFA, streamlining customs and border agencies' procedures and implementing single windows.

- Adopt new digital technologies, such as AI, to optimize risk management and administrative processing, thereby reducing unnecessary, delay-generating border controls.

- Advance regional cooperation on trade facilitation, developing shared digital trade platforms and harmonized customs procedures.

9 All LAC WTO Members except Haiti and Suriname have ratified the TFA, but implementation rates vary widely.

## Scale up export promotion to support digital trade

Most firms in LAC have yet to start exporting, and those that do have a low rate of participation in international markets. A key barrier is the lack of reliable information on foreign markets, such as demand, applicable regulations, and pricing. These gaps result in underinvestment in exports and missed opportunities in foreign markets.

Export promotion agencies are virtually ubiquitous across LAC and play a vital role in addressing these challenges by reducing information barriers and providing training, matchmaking, and market access support services. Evidence shows that these programs can significantly boost export performance, particularly among new and small firms, helping them expand into new markets and products (Volpe Martincus, 2010).

Information frictions are another important obstacle to digital trade. LAC firms typically still have only limited knowledge of digital channels and the conditions and skills needed to market and sell to international customers. Many export promotion agencies now also promote digital exports, helping firms to sell through online platforms and supporting digital service providers in serving global buyers. Initiatives such as the IDB's ConnectAmericas platform and partnerships with online marketplaces offer additional opportunities to scale access to international markets and overcome information asymmetries.

Export promotion therefore remains a key tool to help firms identify and seize opportunities in international trade in the digital era. Governments should be ready to scale up these efforts and adjust them as new markets and digital channels emerge.

### Proposed actions

- Use digital tools and data-driven approaches within export promotion agencies to better match firms with international partners.

- Include digital services exports in export promotion programs, offering tailored support such as trade fairs and information on VAT reimbursement and trade finance.

- Design and implement evidence-based programs that specifically target information frictions affecting digital trade.

- Leverage existing online business platforms such as IDB's ConnectAmericas and partner with online platforms, logistics firms, and fintech providers to support firms in digital exporting.

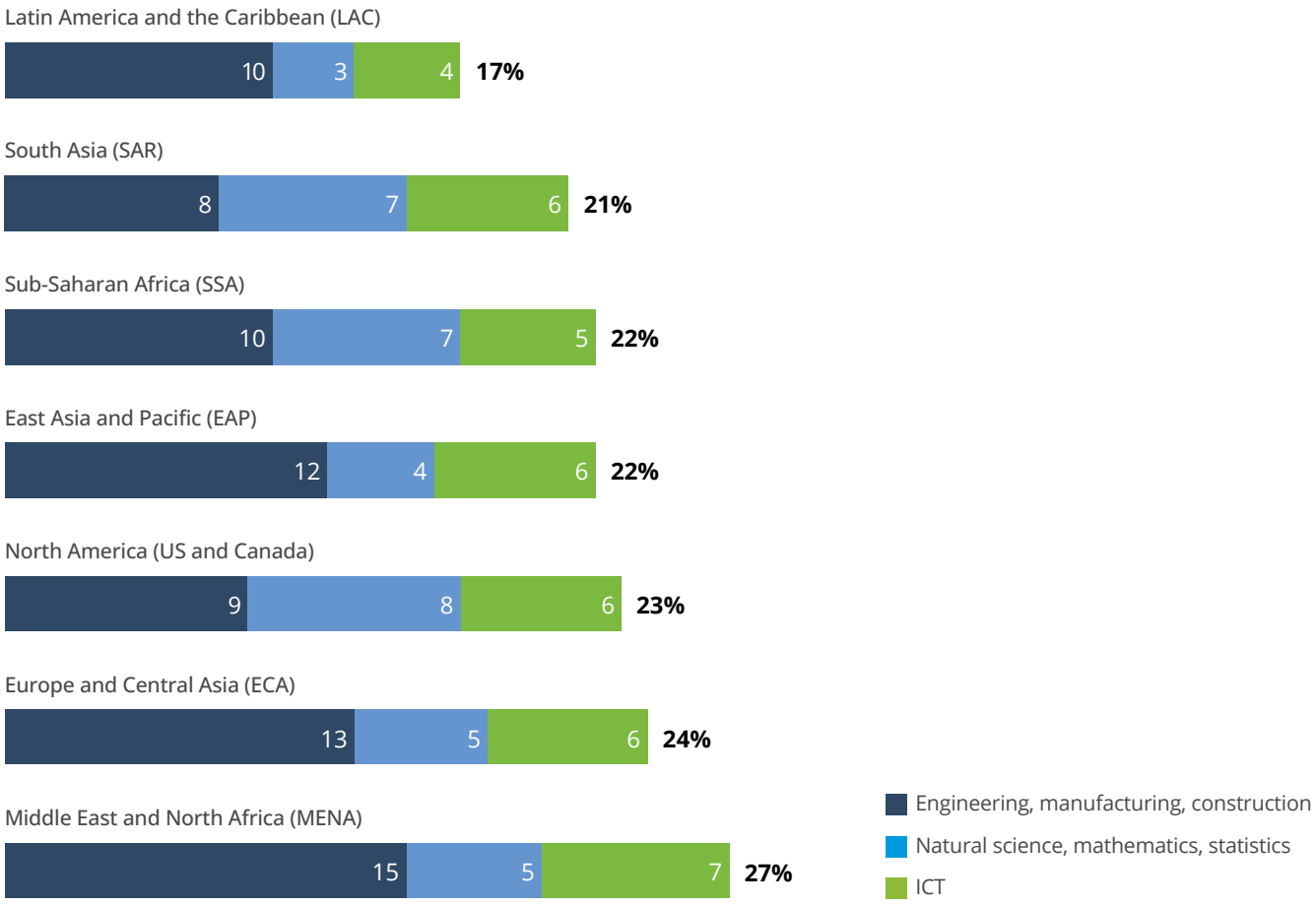
## Support firms as they adopt digital technologies, build relevant skills, and access financing to leverage the opportunities of digital trade

Firms' capabilities and skills are central to their participation in digital trade. Although LAC has made some progress in this area, it continues to face notable challenges. In particular, it is lagging in capabilities, particularly basic, technical, managerial, and entrepreneurial human capital. It is also behind on supporting nonmarket, knowledge-related institutions such as universities and public research entities. Together, these determine a country's capacity for technological absorption—that is, understanding new technologies, evaluating their profitability relative to existing alternatives, financing and implementing them over a long gestation period, and managing risk and potential failure. Many LAC countries trail behind global leaders, albeit with significant variation across sectors and firms (Maloney et al., 2025). Within countries, larger and more mature firms tend to have stronger digital capabilities, particularly if foreign-owned or in the service sector. These firms were also more likely to have pivoted to online sales during the Covid-19 pandemic, increasing their resilience to global shocks.[10]

There is also a shortage of technical and digital skills. The supply of science, technology, engineering, and math (STEM) graduates is generally low compared to other regions (figure O.7) (Azuara et al., 2021). Moreover, many households in the region are not connected to the internet due to a lack of digital skills (World Bank and UNDP, 2022), pointing to a need for greater inclusivity.

10 Based on Enterprise Survey data.

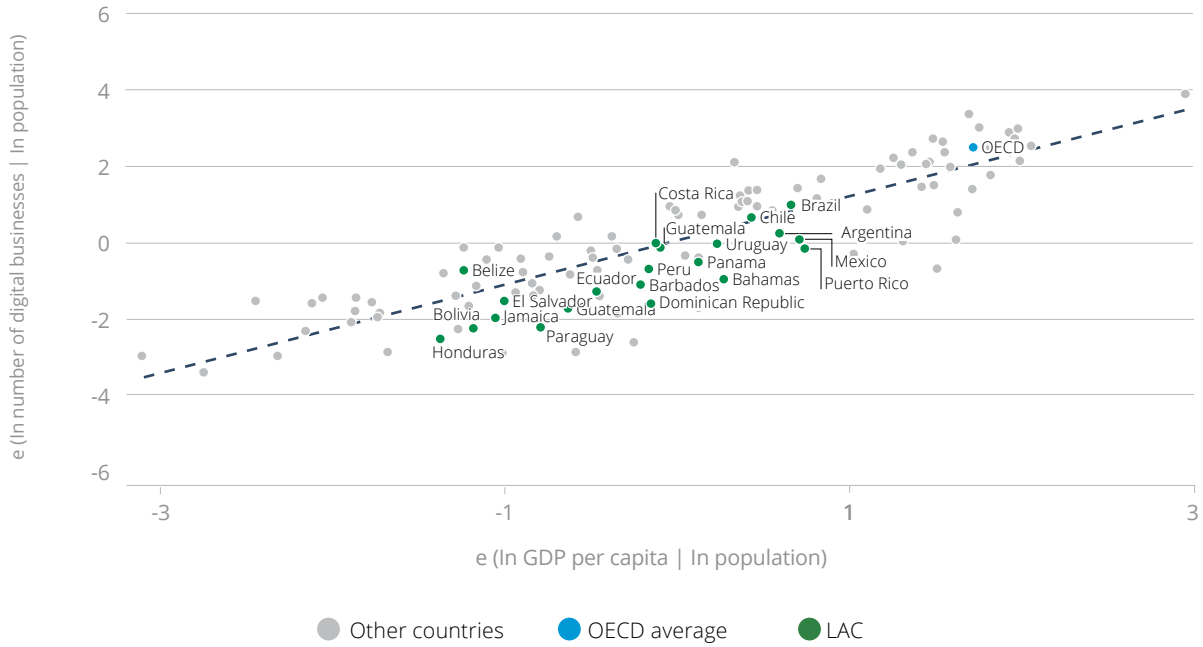
**FIGURE O.7. Share of STEM graduates over all tertiary graduates by region and STEM category, 2021**




Source: IDB (2021).

As a result of these gaps, the number of digital businesses in LAC countries is lower than would be expected based on GDP (figure O.8). There are also relatively few businesses operating in technologically advanced digital sectors like AI and big data.

**FIGURE O.8. Number of digital businesses relative to population and GDP per capita in LAC, 2022–2024**




Note: N = 832,433.

Source: World Bank FCI Digital Business Database.

Access to financing is another major barrier, particularly for digital-only firms with innovative business models and intangible assets. Equity investment is particularly uneven across the region, with fintech and online distribution attracting the most funding.

To fully realize the potential of digital trade, LAC countries need to address these capability gaps by investing in digital skills, improving access to information and finance, and fostering an inclusive digital ecosystem that supports both established and emerging firms.

### Proposed actions

- Invest in entrepreneurship support and incubator and accelerator programs focusing on digital business models, including through the use of AI-driven tools.

- Develop and scale up digital skills and vocational training, incorporating business management, entrepreneurship, and STEM skills.

- Strengthen the role of publicly supported research institutions and technology transfer organizations as providers of public goods in the identification and dissemination of new technologies;

foster university–industry collaboration; and enhance technology adoption, including by facilitating the use of off-the-shelf or easily licensed technologies and private sector engagement with the global knowledge frontier (such as via linkages with multinational firms and co-invention with international partners).

- Improve access to finance for digital transformation, including credit lines, equity instruments, and risk-sharing mechanisms, and promote seed or risk capital and facilitate innovative financing models for digitally focused firms as well as the use of intangible assets (such as intellectual property rights and contracts) as indicators of innovative firms' value and repayment capacity.

### Improve how digital trade is measured

Accurately measuring digital trade is essential for understanding its current state, gauging its full potential, and designing effective policies. However, there is still no consistent and internationally comparable data across countries for digitally ordered trade, making it difficult for policymakers to determine where policy action is needed or to assess its impact.

**Proposed actions**

- Adopt the international standards for digital trade measurement in the *Handbook on Measuring Digital Trade*.

- Build statistical capacity in national agencies to collect, analyze, and report digital trade data.

- Foster regional and global cooperation on digital trade statistics, including by building partnerships with the private sector (e.g., the IDB-facilitated Americas Business Dialogue) and other relevant actors (e.g., academic establishments and associations), sharing best practices, and developing common reporting frameworks.

## The way forward

LAC countries have made significant strides toward greater participation in digital trade, from expanding broadband access to strengthening digital skills and modernizing customs. However, the pace and scale of change must accelerate to keep up with global trends and ensure that all countries and people benefit. Greater cooperation, coordination, and knowledge sharing—both within the region and with global partners—are essential to address cross-border challenges and leverage collective strengths.

International organizations can continue to play an important role in supporting these efforts by providing technical assistance, policy advice, and financing. This report offers a set of possible actions to help LAC countries play a greater role in digital trade. While the recommendations provide a common foundation, governments can use them to develop tailored roadmaps that reflect their specific situations, priorities, and needs. These roadmaps can help prioritize actions, mobilize resources, and engage key stakeholders, turning digital trade into a powerful engine for inclusive and sustainable growth.

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# **Chapter 1.**
# The Current State of Digital Trade in Latin America and the Caribbean

## Introduction

Digitalization has fundamentally reshaped trade, making transactions easier and less costly, increasing the tradability of goods and services, and expanding opportunities for more firms and individuals to engage in global commerce. Worldwide, the rapid growth of digitally delivered services—such as call center activities, computer services, and online education—has been striking. Since 2005, the global export value of these services has nearly quadrupled, reaching US$4.78 trillion in 2024 and accounting for 14.8% of global exports of goods and services. This expansion has outpaced the growth of goods trade (4.5%) and of other services exports (4.9%), underscoring the rising importance of digital trade in the global economy.

Latin America and the Caribbean (LAC) has kept pace with these global trends. The accelerating shift toward digitalization has enabled consumers and firms in the region to participate more in digital trade. Digitally delivered services have become the fastest-growing segment of LAC trade, offering new avenues for productivity growth and development in LAC economies. This chapter focuses on the growth and relevance of digital trade in LAC economies, particularly trade in digitally delivered services and digitally ordered goods. It starts by defining digital trade, discusses its contribution to growth and development, analyzes trends over the past two decades, and highlights the importance of intraregional trade for small and emerging exporters.

## Defining digital trade

This report adopts the definition of digital trade from the *Handbook on Measuring Digital Trade* (IMF, OECD, UNCTAD, and WTO, 2023), which encompasses all international trade that is digitally ordered and/or delivered.

According to the publication:

- *Digitally ordered trade* covers international transactions for goods and services performed using computer networks in ways that are "specifically designed for the purpose of receiving or placing orders." Examples include ordering a T-shirt from abroad on a manufacturer's website or booking a restaurant in another country on a digital platform.

- *Digitally delivered trade* is "all international trade transactions that are delivered remotely over computer networks" and covers only services trade.[1] These transactions may be performed using email,

1 WTO Members hold different views as to whether all digitally delivered trade constitutes trade in services.

voice and video calls, apps, and intermediation platforms. Examples range from computer services to banking services to remote learning courses.

The World Trade Organization (WTO) uses the term "electronic commerce," which it defines as "the production, distribution, marketing, sale, or purchase of goods and services by electronic means." As this definition aligns with that of digital trade in the *Handbook on Measuring Digital Trade* (IMF, OECD, UNCTAD, and WTO, 2023), this report uses the two terms interchangeably.

The measurement of digital trade has improved in recent years (see box 1.1). However, statistics on digitally ordered trade remain sparse, tend not to distinguish between domestic and international trade, and are not comparable across economies.

### BOX 1.1. Data sources for digital trade

#### Digitally delivered trade

Information about trade that is or may be delivered digitally can be found in the following sources:

- **The WTO Digitally Delivered Services Trade Dataset**,[2] which is used in this report, covers more than 200 economies and regions. The dataset contains WTO estimates of services traded through computer networks—such as the internet, apps, email, voice and video calls, and digital intermediation platforms—across eight subsectors between 2005 and 2024. The coverage of digitally delivered services aligns with the definition in the *Handbook on Measuring Digital Trade* (IMF, OECD, UNCTAD, and WTO, 2023).

- **The WTO–OECD Balanced Trade in Services (BaTiS) database** (WTO and OECD, 2024), which estimates the destination of digitally deliverable services trade. It contains a balanced matrix of international trade in services for over 200 reporting economies and their partners by sector for 2005–2023.[3]

2 See WTO (2024).

3 See WTO and OECD (2024). BaTiS reconciles exports and imports "by calculating a symmetry-index weighted average between the two, following a similar approach to that developed for international merchandise trade statistics." This approach resolves asymmetries between reported and mirror flows. See OECD Data Explorer (https://data-explorer.oecd.org/vis?df[ds]=DisseminateFinalDMZ&df[id]=DSD_BATIS%40DF_BATIS&df[ag]=OECD.SDD.TPS&dq=.....A.USD_EXC.&pd=%2C&to[TIME_PERIOD]=false&vw=ov).

It should be noted that digitally *deliverable* services differ from digitally *delivered* services: the former are services that may be delivered remotely over computer networks, while the latter are actually delivered this way. The total value of digitally deliverable services will be greater than (or equal to) the total value of services that are digitally delivered.

### Digitally ordered trade

- **Digitally ordered trade is harder to capture**, and no internationally comparable information is currently available.

Proxies for LAC include:

- **Transactional data**, which allow patterns in the total and average value of purchases, number of transactions, and number of buyers to be measured, both in general and by country of origin and product (Carballo et al., 2020a, 2021b; Volpe Martincus et al., 2024).[4]
- **Data on postal shipments** from the Universal Postal Union and national postal services.[5]
- **The Marketplace Explorer**, which quantifies traffic (visits) to hundreds of LAC marketplaces and platforms by country of origin, as well as from LAC to foreign platforms in 2019–2023.[6]
- **Numerous consumer and business surveys**, including several mentioned in boxes in this report, that also identify the types of firms that engage in digital trade.

4 One example is Uruguay's franchise regime, which offers data on all credit card and debit card purchases that Uruguayans make abroad. The regime allows all adult Uruguayans to buy noncommercial merchandise abroad up to three times a year for up to US$200 (and 20 kg) each without paying customs duties or taxes. See Carballo et al. (2016).

5 See Universal Postal Union (2024). A recent IDB study covering the universe of Peru's export transactions from 1999 to 2014, including regular and postal shipments, shows that the postal shipments mode has been associated with increased and more diversified regional exports, higher entry and exit rates, greater export experimentation, and learning within and across firms. See also Carballo et al. (2016).

6 This database developed by the International Trade Centre, the United Nations Economic Commission for Latin America and the Caribbean, and the Centre for Market Insights of the Amsterdam University of Applied Sciences—enables an LAC-wide analysis of B2C goods-oriented marketplaces. The dashboard explores trends in marketplace usage from 2019 to 2022, relative adoption across 33 countries, and country-by-country benchmarking. The tool covers visitor traffic and characteristics of almost 900 marketplaces and 2,900 marketplace websites targeting the 33 markets with country-specific URLs, webpages, or subdomains. See Lottito and Astarloa (2023).

## How digital trade benefits economies

The expansion of digital trade can translate into economic growth and inclusion through various channels:

1. **Digital trade expands firms' available markets and helps match demand to supply**. Multiple firm-level surveys, including in LAC, show that online sellers, especially those using digital platforms and marketplaces, are much more likely to export than offline sellers (Suominen 2019 and 2023). Specifically, online presence increases the visibility of companies, reduces search costs, and facilitates communication between buyers and sellers, thus reducing the role of physical distance as a deterrent to trade in online markets as compared to traditional "offline" markets (Hortaçsu et al., 2009; Lendle et al., 2016; Alaveras and Martens, 2015; Fernandes et al., 2019; Carballo et al., 2022).

   Online selling, both domestically and abroad, can also help businesses increase their productivity and export competitiveness. For example, retailers with an online presence can offer a broader range of products by avoiding physical limitations and infrastructure investments, thereby reaching more consumers at a lower cost. Online sellers grow faster and are more productive than firms that do not sell online.

2. **Digital trade can enhance consumer welfare through various channels**. Trade increases consumer welfare by expanding access to a wider variety of goods and services. Digital trade arguably amplifies these gains, further widening consumer choice. For instance, online shopping has been found to enable rural households to access goods similar to those available to their urban peers, boosting their welfare (Couture et al., 2021). The Japanese platform Rakuten has promoted price convergence across cities and increased the availability of varieties. As a result, consumers benefit from lower, less varied prices for goods that are sold more intensively online (Jo, Matsumura, and Weinstein, 2022).[7]

3. **There is emerging evidence that digitally delivered services trade promotes income growth**. A 1% increase in digital services exports has been found to increase per capita GDP by 0.78% in emerging countries and 0.34% in developing countries (Mulenga and Mayondi, 2022). This suggests that digital trade may yield growth dividends and serve as a "growth escalator," much as manufacturing did in past decades.

7 See also Goldmanis et al. (2010); Lieber and Syverson (2012); and Goldfarb and Tucker (2019). Brynjolfsson, Hu, and Smith (2003) and Quan and Williams (2018) find significant consumer welfare gains from online access to a greater variety of books and footwear, respectively. More broadly, considering aggregate benefits, Dolfen et al. (2023) estimate that welfare gains from digitally ordered trade for consumers in the United States amounted to approximately 1% of annual consumption in 2017.

4. **Digitally traded goods and services can create jobs.** In services, jobs can be created both in small businesses that leverage digital trade to grow sales and hire employees, and in established tech multinationals that serve customers around the world (Zhao et al., 2025; US Chamber of Commerce, 2024). For example, Mexico's Softtek, which offers cloud, application, and data solutions for leading global firms and local governments, employs 15,000 people in LAC, while the Buenos Aires–based Globant, a software development company, has 23,000 employees, mostly in LAC. Additionally, online distribution platforms can promote backward linkages with domestic producers, while export-driven e-commerce sellers and small creators and influencers can, upon exporting, contract more vendors in their local economies.

5. **Digital trade can promote inclusive development.** Online channels such as social media platforms, video sharing services, and e-commerce marketplaces have given firms that have traditionally struggled to export, such as microenterprises, opportunities to increase visibility among foreign customers and receive international orders online (Carballo et al., 2022; UNCTAD, 2015; World Bank, 2016; OECD, 2019). Digitalization is also helping women-led firms connect with local and global customers with greater ease than they might offline (IFC, 2021; Nextrade Group, 2022). By allowing people to access markets beyond traditional office settings and hours, digital platforms can expand trade participation and income opportunities, helping reduce gender gaps, especially for women with caregiving responsibilities (Barafani and Barral Verna, 2020).

6. **Imports of digitally delivered services, such as business, telecommunications, or financial services, can increase the competitiveness of firms across sectors in international markets**. Several studies demonstrate how services imports can boost countries' goods exports.[8] At the firm level, recent studies show that digital imports of services also increase export volumes and improve export quality, including in manufacturing (Zhang et al., 2023).

**Despite its benefits and potential opportunities, digital trade also poses challenges**. Sellers anywhere in the world can set up online stores and gain visibility among global buyers, or deliver services digitally across borders, creating new competitive pressures for domestic sellers. For example, e-commerce can reduce the market share of smaller, less productive retailers (Goldmanis et al., 2010). Likewise, a major e-commerce company setting up fulfillment centers has been shown to lower the income of traditional retail workers in nearby counties and reduce sales and employment levels of nearby stores (Chava et al., 2022).

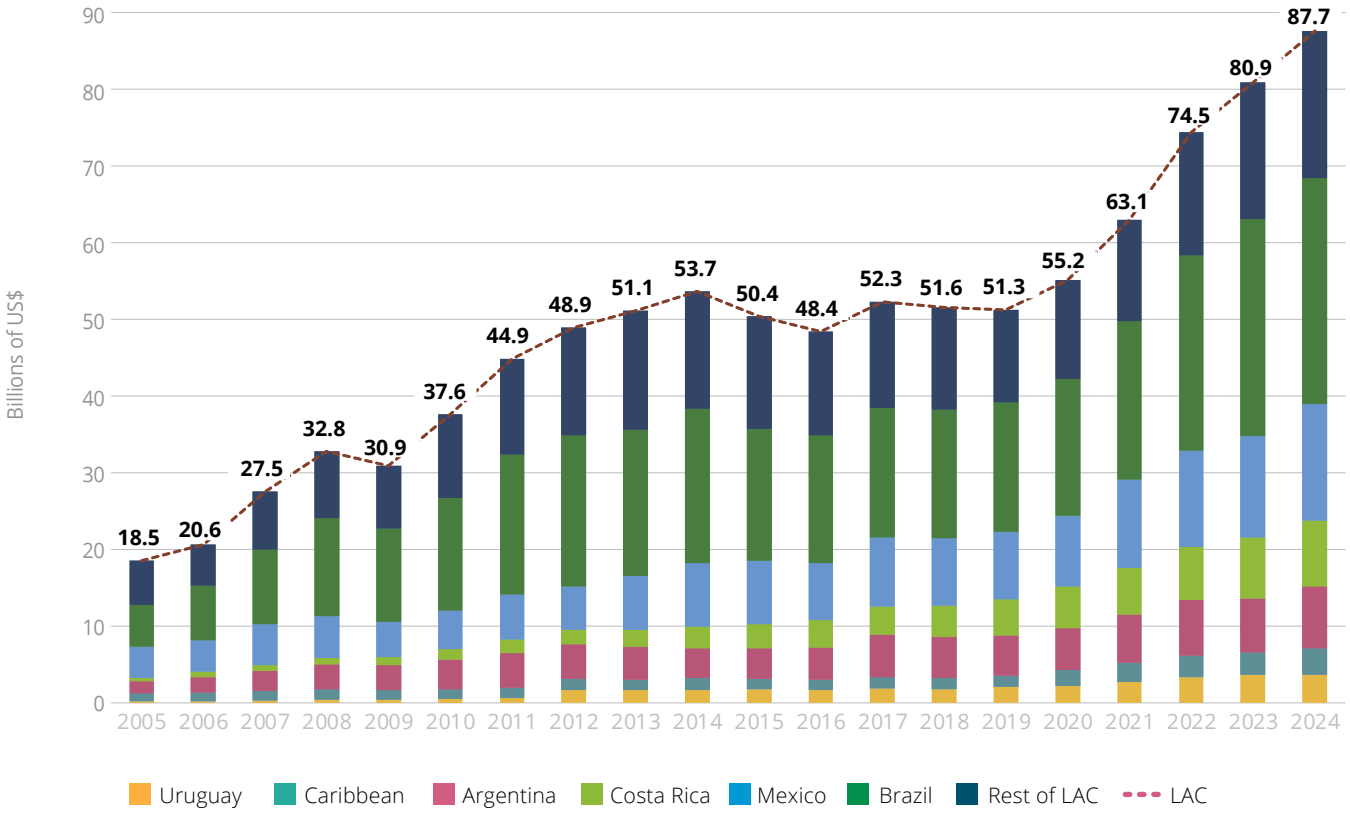
8 For example, recent data on Belgian exporters that sell both goods and services show that the provision of services is associated with higher goods sales (Ariu et al., 2020).

As digital trade continues to gain prominence, policymakers will need to design complementary, well-targeted interventions that not only support its development but also mitigate adjustment costs, create inclusive opportunities, and ensure its benefits are widely distributed.

## Digital trade in LAC: Trends over the past 20 years

Digitally delivered services exports from LAC grew nearly fivefold between 2005 and 2024, rising from US$18.5 billion to US$87.7 billion (figure 1.1). In 2024, the leading exporters were Brazil (US$29.4 billion), Mexico (US$15.2 billion), Costa Rica (US$8.6 billion), and Argentina (US$8 billion). Other smaller LAC economies have also seen rapid growth in digitally delivered services exports since 2005, such as the Dominican Republic (US$2 billion), Nicaragua (US$316 million), and Belize (US$227 million).

**FIGURE 1.1. Digitally delivered services exports in LAC countries, 2005–2024 (billions of US$)**

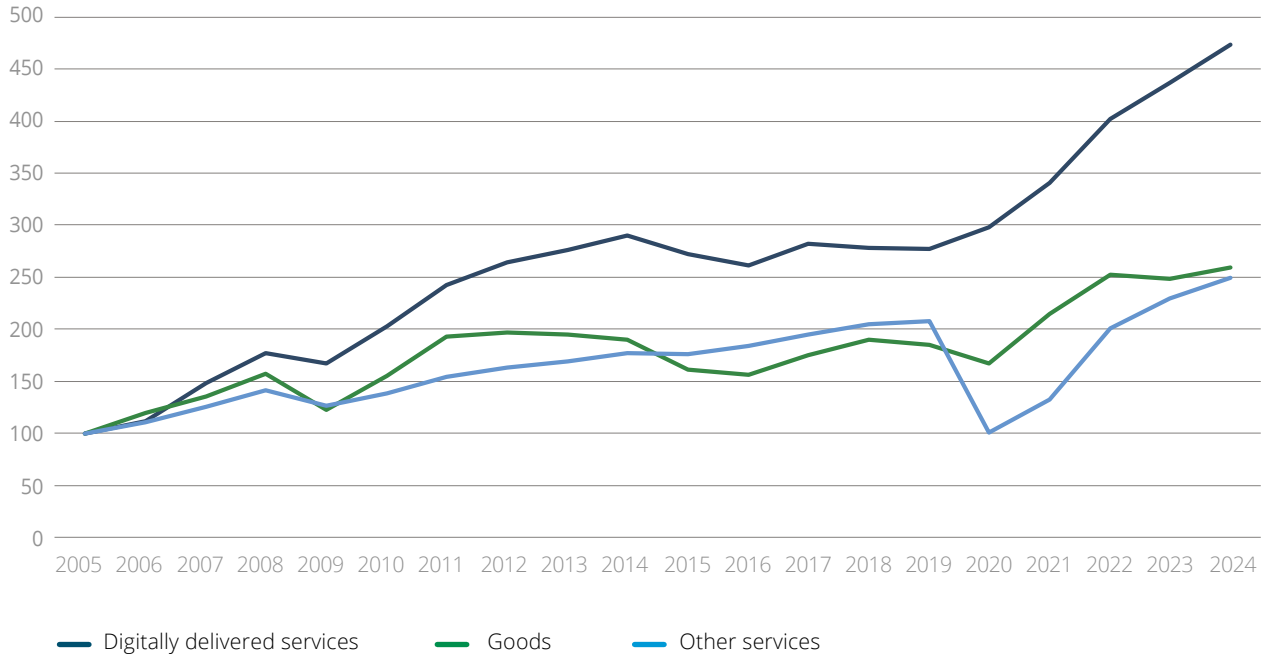



Source: WTO (2024a).

## Digitally delivered services are the fastest-growing area in LAC trade

Trade in digitally delivered services has been growing faster than trade in goods and other services. In LAC, exports of digitally delivered services have grown at an average annual rate of 9% since 2005 (slightly higher than the global average of 8.4%), compared with 5% for the region's goods exports over the same period. A notable slowdown occurred between 2014 and 2019, largely driven by Brazil's sharp decline in exports. During this period, Brazil's digitally delivered services exports contracted by an average of 3% per year, reflecting the impact of an economic crisis and currency depreciation against the US dollar, with a sluggish recovery in the years that followed. Unlike other services or goods trades, digitally delivered services trade not only withstood the Covid-19 shock but its growth accelerated further postpandemic (figure 1.2)

**FIGURE 1.2. Growth of LAC's digitally delivered services, other services, and goods exports, 2005–2024 (%, index 2005 = 100)**



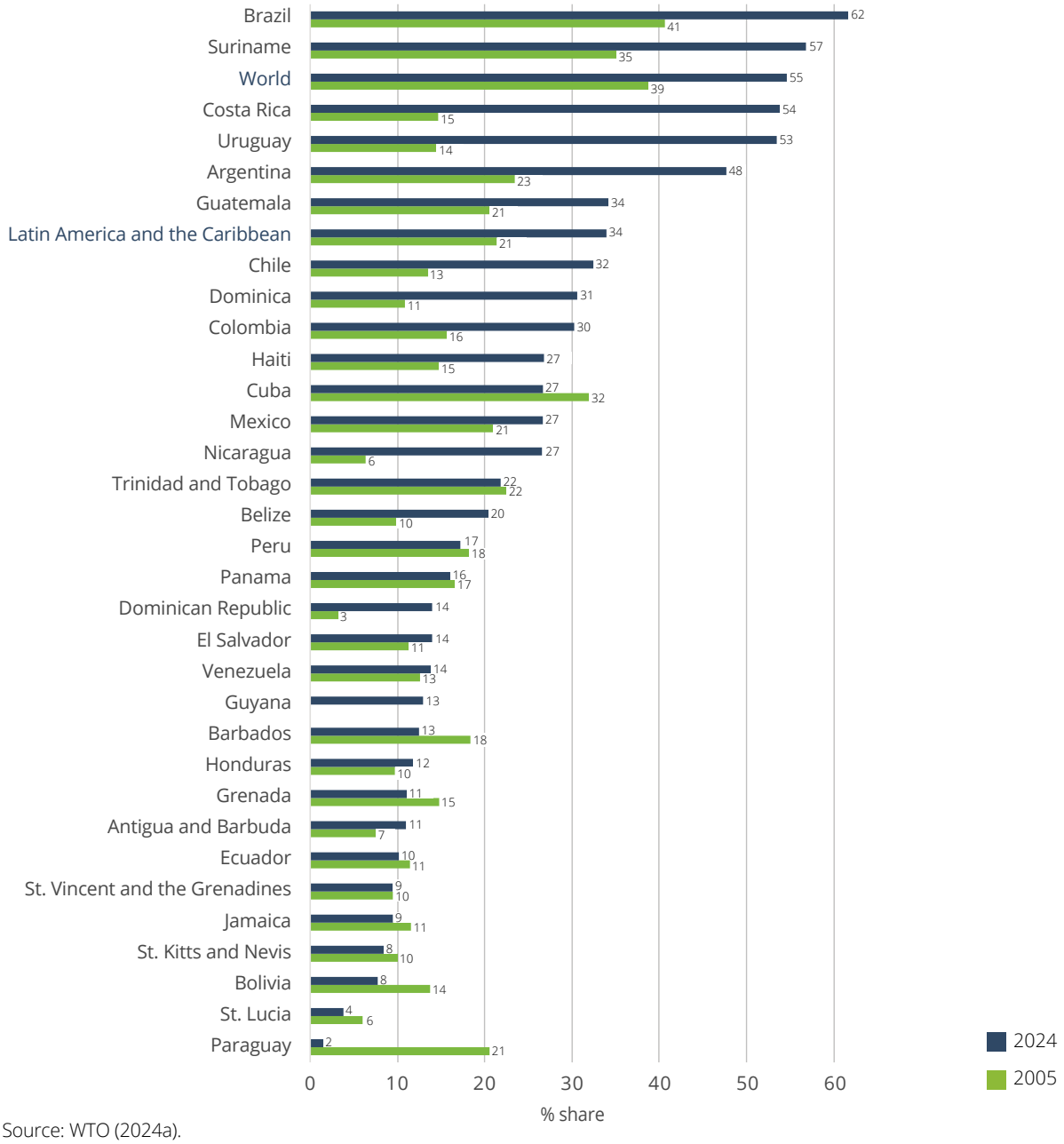

Source: WTO (2024a).
Note: The category of other services refers to services that are not delivered digitally.

Over the past two decades, digitally delivered services exports have grown to represent a much larger share of total services exports[9] across almost all economies in LAC. Their share of the region's total services

9 Digitally delivered services exports are a subset of commercial services exports (here referred to as "services exports"). They are all services supplied to nonresidents of the producing economy except government goods and services n.i.e., as defined under EBOPS 2010.

exports rose from 21.3% in 2005 to 34.0% in 2024, peaking at 44.4% in 2020, during the Covid-19 pandemic. In leading exporters such as Brazil, Costa Rica and Mexico, they accounted for 62%, 54%, and 27% of total services exports in 2024, respectively, driven largely by business services. Most notably, exporters such as Uruguay, Argentina, and Suriname recorded significantly higher shares of these services than in 2005 (53%, 48%, and 57%, respectively), reflecting a rise in exports of computer and business services (figure 1.3).

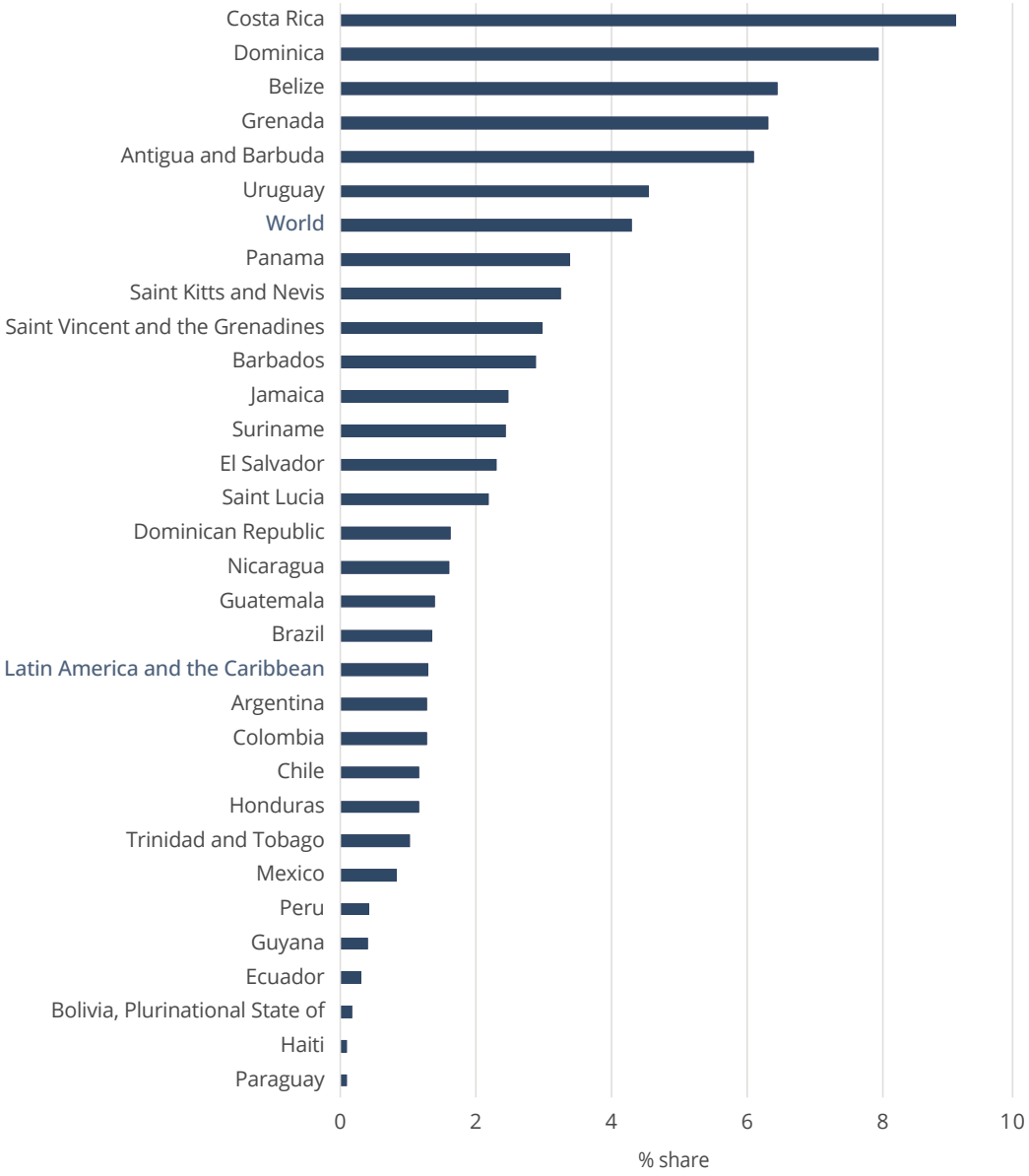
**FIGURE 1.3. Share of digitally delivered services in services exports by country, 2005 vs. 2024 (% share)**




Source: WTO (2024a).

Digitally delivered services exports still account for a small share of GDP in most LAC countries—1% or less in many cases, although there are some notable exceptions. In 2024, these exports accounted for around 9% of GDP in Costa Rica, 8% in Dominica, and 6% in Belize, Grenada, and Antigua and Barbuda (figure 1.4).

**FIGURE 1.4. Digitally delivered services exports by country, 2024 (% of GDP)**




Source: WTO (2024a). For GDPs, see World Bank World Development Indicators (https://databank.worldbank.org/source/world-development-indicators).

New technologies and infrastructure investments present a significant opportunity to expand trade in digitally deliverable services[10] in LAC. Digitalization enhances productivity and reduces trade costs, particularly by minimizing the need for physical interaction. Simulations through 2040 suggest that LAC's digitally deliverable services exports could grow by up to 7.9% annually, with digitalization alone contributing 4.5%. By then, they could account for up to 8% of the region's total trade in goods and services. While the results vary across countries, some—such as Costa Rica, Uruguay, and the Caribbean countries—could see digitally deliverable services exports accounting for more than 17% of total exports. Box 1.2 explores this potential in greater depth, presenting scenarios for how digitally deliverable services trade in LAC could evolve by 2040.

### BOX 1.2. Simulations of new technologies and digitalization in LAC

New technologies and infrastructure investments may help countries in LAC strengthen their participation in digitally deliverable services trade. Digitalization helps raise productivity and lower trade costs, for example by reducing the need for face-to-face interaction. To assess the potential impact of these trends, this report explores three simulations that introduce (i) additional productivity growth from artificial intelligence (AI), (ii) reductions in trade costs due to increased use of digital technologies or improvements in these, and (iii) less need for face-to-face interaction. The analysis is conducted using two modelling paths—a core path and a convergence path—both of which capture digitalization trends relative to a business-as-usual baseline.[11] The core path assumes that all countries experience the same impact from digitalization, while the convergence path incorporates an improved policy environment in catch-up countries, leading to larger projected productivity gains and greater reductions in trade costs.

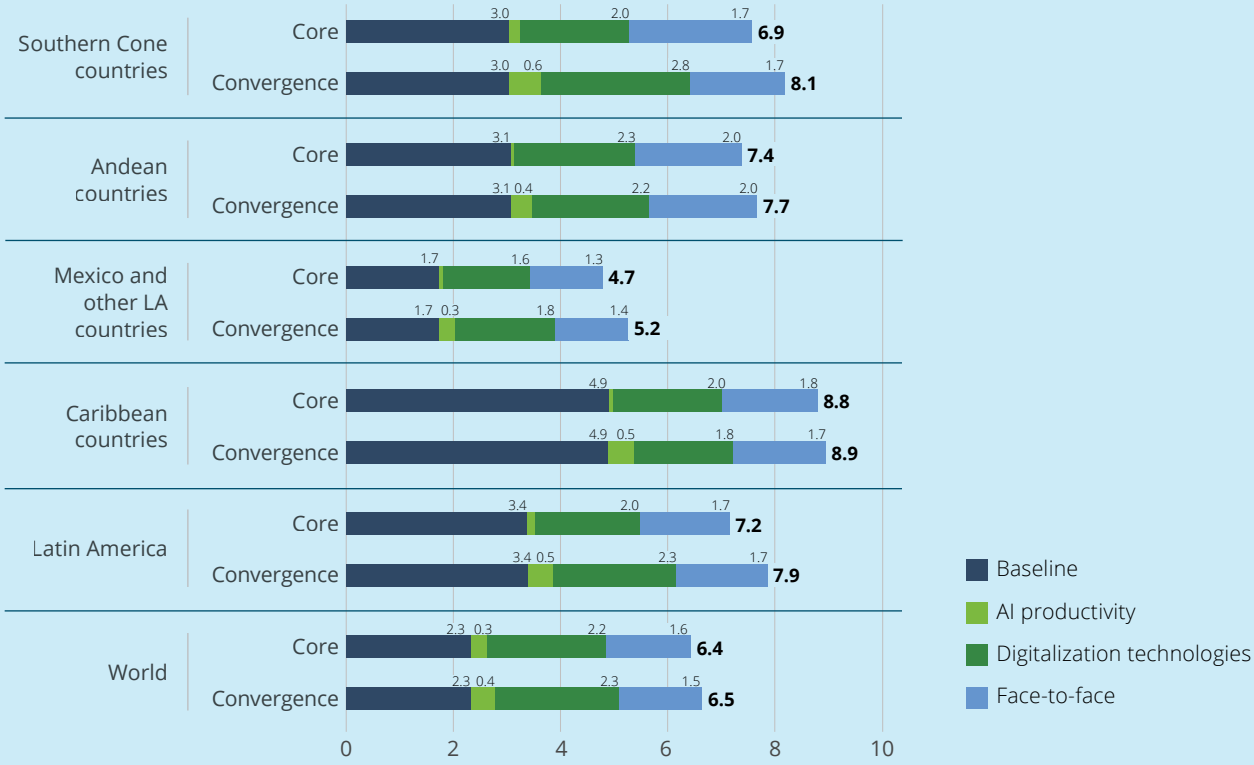
Overall, our projections indicate that LAC's digitally deliverable services exports could grow up to 7.9% on average per year (figure A), with digitalization contributing 4.5% (1.7% face-to-face; 2.3% digitalization technologies; and 0.5% AI productivity). The growth of digitally deliverable services exports in the baseline is largest in the Caribbean countries ( 4.9% per year). LAC benefits more from digitalization under the convergence path than the core path, with the most significant additional gains emerging in the Southern Cone countries (+8.1% per year instead of +6.9%) and Mexico and other LA (+5.2% per year instead of +4.7%). Furthermore, figure A shows that the largest projected increase in both the core and convergence paths comes from improvements in

10 As opposed to trade in digitally delivered services (see box 1.1).

11 The baseline describes the trajectory of the world economy to 2040 in the absence of digitalization trends and new technologies. For more details, see Bekkers et al. (2025) and WTO (2024).

digitalization technologies. On average, LAC is projected to experience higher growth in digitally deliverable services than the global average: under the convergence path, the region's projected growth rate is 7.9%, compared to a global average of 6.5%.

**FIGURE A. Projected annual growth rate in digitally deliverable services exports, 2023–2040 (%)**



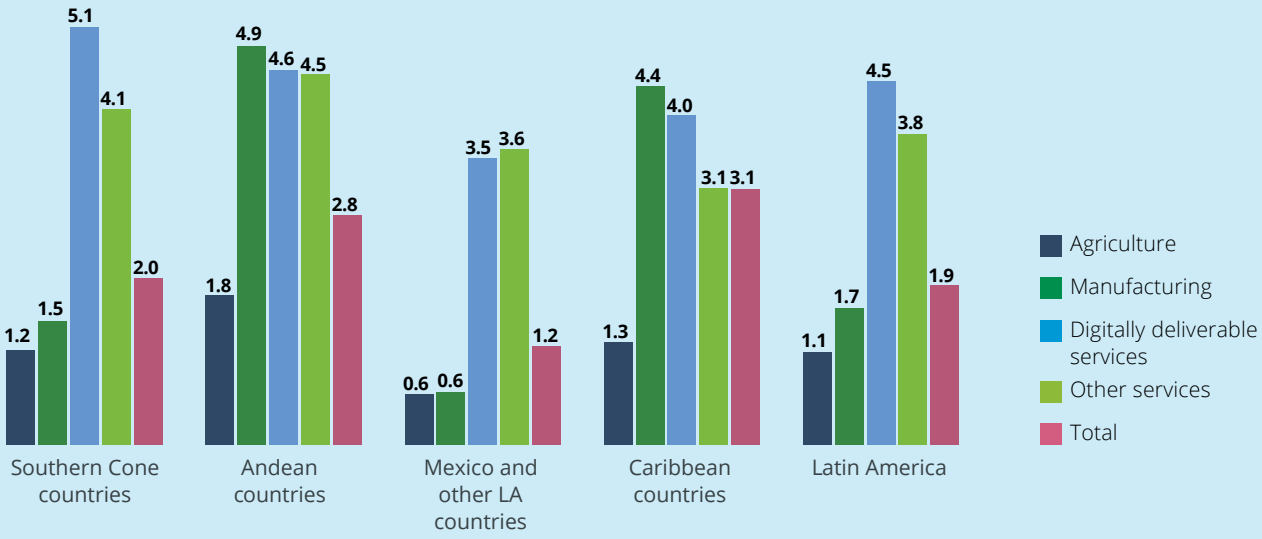

Notes: The figure displays the projected annual growth of real exports of digitally deliverable services (insurance, finance, communication, other business services, and education and health services) from LAC regions between 2023 and 2040, differentiated by the impact of technological trends used.

Source: Simulations using the WTO Global Trade Model.

Figure B shows projected additional annual growth (deviation from the baseline) across the different LAC regions for all aggregate sectors. The figure makes clear that for some regions, such as the Southern Cone countries, digitally deliverable services are projected to benefit most from digitalization in terms of additional export growth. In other regions, such as the Andean countries, the

greatest additional growth is expected to occur in manufacturing, due to its small initial share of exports, implying scope for expansion. However, for the whole of LAC, digitally deliverable services are projected to grow the most, followed by other services.

**FIGURE B. Projected annual growth rate of exports from Latin American regions between 2023 and 2040 (%)**




Notes: The figure displays the projected annual growth in real exports for LAC regions (deviation from the baseline) for the convergence scenario in various sectors from 2023 to 2040.

Source: Simulations using the WTO Global Trade Model.

Given the rapid expansion of digitally deliverable services exports, our projections indicate that these could account for up to 8% of the total goods and services trade in LAC. In particular, the share of digitally deliverable services exports among the Andean countries in 2040 is projected to be more than twice as large under the convergence path compared to the baseline (5.1% and 2.5%, respectively). The individual countries projected to have the largest share of digitally deliverable services in total exports in 2040 under the convergence path are Costa Rica (21.8%), Uruguay (17.6%), and the Caribbean countries (17.8%). These results show that technological development reverses the negative baseline trend of a declining share of digitally deliverable services in exports for most LAC countries. This again shows the importance of policy reforms and investment in digital infrastructure.

Source: Bekkers et al. (2025).

Technological advances, particularly AI, can also play a key role in expanding digital trade in LAC. AI can optimize logistics, improve inventory management, and streamline customs processes, thereby reducing trade costs for digitally ordered goods. It can also drive growth in digitally delivered services trade, including by increasing demand for supporting services such as cloud computing and data processing, which are often delivered cross-border, and by making information-intensive services more tradable across borders. Nonetheless, realizing the full benefits of AI depends on countries' capacity to process data and develop technical skills (see box 1.3).

### BOX 1.3. Artificial intelligence and digital trade

Artificial intelligence (AI) is a general-purpose technology defined by the OECD as a "machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments" (OECD, 2024). AI is having far-reaching economic and societal effects, and its all-pervasive nature is also impacting digitally ordered and digitally delivered trade (see the definition of digital trade in box 1.1) and is expected to be especially significant for the latter.

With regard to digitally ordered goods trade, AI can be leveraged to reduce costs associated with transport and logistics, supply chain management, and regulatory compliance (WTO, 2024a). For instance, it can help optimize transport routes and warehouse utilization, enhance inventory management and demand forecasting, facilitate the automation of customs processes, and increase the ease and speed of border formalities. AI technologies can also improve the accuracy and efficiency of product classification, a critical function for effective trade policy and duty collection. Large language models (LLMs) can automate product categorization using text descriptions. Compared with traditional machine-learning approaches, LLMs maintain strong performance across datasets, with reported accuracies of 60%–90% depending on the level of aggregation. This capability can streamline customs processes, reduce misclassification costs, and speed up tariff-line attribution for cross-border e-commerce (Marra de Artiñano et al., 2023). AI adoption also helps lower the language barriers and search-and-match costs that international traders must handle, to the specific benefit of digitally ordered services trade.

AI's implications for trade in digitally delivered services are likely to be even more widespread. First, AI models are essentially software, albeit specialized software. If software is considered a service (WTO Members hold diverging views as to whether software is a service or a good when it is not traded via a physical carrier medium), the cross-border provision of an LLM or an AI chatbot built on top of an LLM boosts trade in digitally delivered services in and of itself. This kind of trade in AI

services is also expected to intensify: as a general-purpose technology, AI will be embedded in an increasing number of products, ranging from autonomous vehicles to healthcare and crop management, further enhancing demand for it and trade in it.

Second, AI deployment is likely to increase digitally delivered trade in a range of "AI-enabling" services. The enormous amounts of data and data handling required to run AI models are already driving demand for telecommunications and computer services, including cloud computing, data storage, and data processing, many of which are traded cross-border and delivered digitally. Another growth area is services that support the deployment, scaling, and optimization of AI itself, such as data entry, labeling and annotation services, or AI detection services, which are also often delivered remotely via electronic means (WTO, 2024b). Access to such services will be a key determinant of productivity and competitiveness, and most countries will require substantial imports of digitally delivered services.

Finally, AI is an input in the production of a growing range of services, spanning sectors as diverse as translation, legal services, and credit rating. Sectors characterized by cognitive, information-intensive, and routine tasks seem especially suited for AI automation. As these services may be supplied as digitized information flows, AI can be expected to further enhance their remote tradability, thereby boosting digital trade. It is also possible, however, that the supply of certain AI-enabled services will increasingly take place domestically. Some AI models may be more effective when trained on local proprietary data that better reflects specific, home-grown characteristics. As a result, AI deployment may incentivize the domestic production of context-specific, customized AI-enabled services. However, bringing this to fruition requires absorptive capacity in data processing capabilities and technical skills, which are not currently widely available, especially in developing countries (WTO, 2025).

LAC economies have promoted digital trade by cultivating local providers and promoting their exports. For example, El Salvador has focused on promoting local export-driven software companies through infrastructure and talent development and a network of incubators, accelerators, and international events. Argentina's Córdoba Cluster started out providing digital solutions to manufacturing industries but has matured into an export-driven software development hub with over 1,100 firms and 29,000 workers.[12] Many Caribbean economies have developed notable export-driven clusters of creative industries such as music, video, animation, and design (box 1.4).

12 See: https://cordobacluster.com/en/que-es-el-cluster.

## BOX 1.4. The rise of creative industries in LAC

Creative industries have expanded in LAC on the back of digitalization. These include music, movies, images and paintings, video games, animation, design, graphic design services, and more. The creative industry makes up over 2% of LAC's GDP and employs around 1.9 million people (Luzardo et al., 2023). Creative industries are a particular driver of many Caribbean economies, making up 6% of Jamaica's GDP, for example (Watson et al., 2021).

LAC's creative industry is export-driven. For example, Argentina, Brazil, Colombia, and Costa Rica have become important developers for the global gaming industry and companies such as Nintendo, Sony, Microsoft, and Apple. Firms in these four countries provide character and environment design, modeling, programming, special effects, sound design, language quality control, augmented and virtual reality, and content customization for Spanish- and Portuguese-speaking audiences (Chulis, 2012).

Most LAC creative industry firms are very small. A 2020 survey of 450 Chilean creative firms indicates that 50% have earnings of fewer than 10 million pesos (about US$9,940); another 20% earn between 11 and 30 million pesos per year (ProChile, 2022). Though survey results need to be interpreted with caution, as samples may be subject to selection bias, the data indicate that as many as 66% of the surveyed firms exported. For half of these exporters, exports represented more than 10% of their revenue (ProChile, 2022). The main export markets were the United States (32% of total exports), Mexico (14%), Spain (10%), Germany (6%), and Argentina (6%). Asian markets, such as China, were reportedly important future targets.

Among the challenges faced by Chilean creative industry firms in exporting, about half of those surveyed saw access to financing for the international promotion of their products as the greatest obstacle, followed by financing for product development and production, and access to international partners. Firms particularly need financing and support, market intelligence, and promotion. Some 41% of the surveyed firms reported receiving such support from ProChile to participate in international fairs and trade missions and assess export potential, while 35% used ProChile's competitive funds program, which has a dedicated line for cultural and creative industries.

Similarly, in a 2022 study in Jamaica, 81% of the film, animation, and music industries reported exporting, with most earning up to 30% of their revenue from exports (Watson et al., 2021). The most common method of exporting is online, as highlighted by 78% of animation respondents,

53% of film respondents, and 27% of music industry respondents. The second most common mode across these firms is delivery to tourists or visitors, used by 47% of filmmakers, 10% of animators, and 32% of musicians.

As in Chile, the survey in Jamaica noted the importance of the North American market, which was an export target for 69% of respondents. Meanwhile, 48% said they exported their services to the UK and Europe, and 18% reported exporting to the Caribbean. Unlike their Chilean counterparts, however, Jamaican respondents were less aware of government support for creative industry exporters: 68% said they do not access the incentives or initiatives in place. However, 14% had accessed customs duty exemptions, 3% accessed income tax relief, and 2% accessed the productive tax credit.

LAC economies have also promoted digital trade by attracting foreign direct investment (FDI) in sectors well suited to digital trade. Through FDI, firms with digital delivery models—for example, service centers that provide call-center support, back-office functions, and data analytics to firms and customers abroad––establish a commercial presence in the host country,[13] bringing with them business practices, technology, and knowledge from abroad. In LAC, FDI has been more prominent in digitally delivered services sectors, although there is also scope to attract FDI related to digitally ordered trade.

Inflows of FDI in service subsectors with strong digital delivery models have grown substantially in LAC since the Covid-19 pandemic, increasing from an average of US$3,408 million in 2010–2014 to US$3,787 million in 2015–2020 and US$10,853 million in 2021–2024.[14] Likewise, the share of FDI in these same service subsectors in total FDI grew from 3.5% in 2010–2014 to 9.0% in 2021–2024. Data processing, hosting, and related services are among the main drivers of this FDI, representing 67.2% of inflows in 2010–2024.[15] This type of FDI is particularly relevant for the Caribbean and smaller countries: it represented 13.2% of FDI inflows in Jamaica and between 9% and 12% in Barbados, Paraguay, Colombia, Costa Rica, and Belize over this period.

13 When FDI occurs in services sectors, it constitutes trade in services via Mode 3 of the General Agreement on Trade in Services (GATS), establishment of a commercial presence.

14 Subsectors were selected by a group of World Bank experts and include, from highest to lowest in the region: data processing, hosting, and related services; custom computer programming services; software publishers (except video games); business support services; professional, scientific, and technical services; motion picture and sound recording industries; other telecommunications; other (software and IT services); Internet publishing, broadcasting, and web search; video games, applications, and digital content; computer system design services; other support services; architectural, engineering, and related services; accounting, tax preparation, bookkeeping, and payroll services; all other information services; other computer-related services; and specialized design services.

15 World Bank staff calculation based on the fDi Markets dataset. Calculations are based on the number (or capital expenditure) of greenfield project announcements. The data do not constitute official FDI and are not comprehensive.

Costa Rica's 20-fold growth in exports of digitally delivered services over the past 20 years has been especially noteworthy, fueled by its success in attracting sophisticated international tech firms to operate in the country (box 1.5) (Alvarado, 2019). Similarly, Jamaica has established itself as a major hub for business process outsourcing (BPO) in the Caribbean. Proximity to North American markets, a scalable English-speaking workforce, and cost competitiveness have favored this development, driven mainly by FDI.[16]

### BOX 1.5. Costa Rica's digitally delivered services export boom

Costa Rica has been remarkably successful in growing its digitally delivered services exports. These increased almost 20-fold between 2005 and 2024, from US$464 million to over US$8.6 billion. They have become central to Costa Rica's trade profile, growing from 15% to 54% of total services exports during this period and expanding from just 2% to 9% of GDP, the highest share in LAC. As a result of this growth, Costa Rica ranked 10th on the 2024 Global Innovation Index on ICT Services Exports (Marcasur, 2024).

The boom is in part due to Costa Rica's success at attracting sophisticated services providers to operate in the country (Carballo et al., 2021). Amazon opened its first customer service center in Costa Rica in October 2008. Amazon Web Services has since invested several times in Costa Rica; as of 2021, it employed more than 15,000 workers who provided human resources support for Amazon's operations in the US, Europe, and Latin America; customer experience operations in Mexico and Brazil; and cloud computing operations globally (Cantu, 2023). Subsequent digital-related investments were made by Sykes (a US-based BPO), IBM, and Citibank (Alvarado, 2019). In 2022, Microsoft began moving its operations to a technology hub in San José, its largest and most modern headquarters in Latin America, unifying its sales, customer service, and operations functions (CINDE, 2022).

Costa Rica has a vibrant ecosystem of local technology startups and businesses that export services digitally around the world. For instance, it already hosts 90 MedTech multinationals and is well placed to benefit from the potential rise of nearshoring as a hub for m edical technology and pharmaceutical innovation (Colantuoni, 2023; Central Law, 2024). It is also home to Fair Play Labs, a prominent game development studio that specializes in creating engaging and innovative gaming experiences. Founded in 2004, the company has collaborated with industry giants, contributing to

16 Early investors included Xerox, Teleperformance, Hinduja Global Solutions, Alorica, and Sutherland Global Services. The sector is particularly important for women's employment: according to the Global Services Association of Jamaica, women account for about 60% of outsourcing employees (IFC and World Bank Group, 2022).

projects for platforms like Nintendo and PlayStation.[17] Another company, DNAMIC, provides digital transformation services, specializing in software development, quality assurance, software testing, and digital production for large enterprises such as Warner Music Group, the Discovery Channel, and Droga5.[18]

## LAC still accounts for only a fraction of global digitally delivered services exports, with room to grow

Despite robust growth in recent decades, LAC's digitally delivered services exports still accounted for only 2% of global trade in 2024. This is well below LAC's share of world goods exports (more than 6.4%) and world services exports (2.9%).

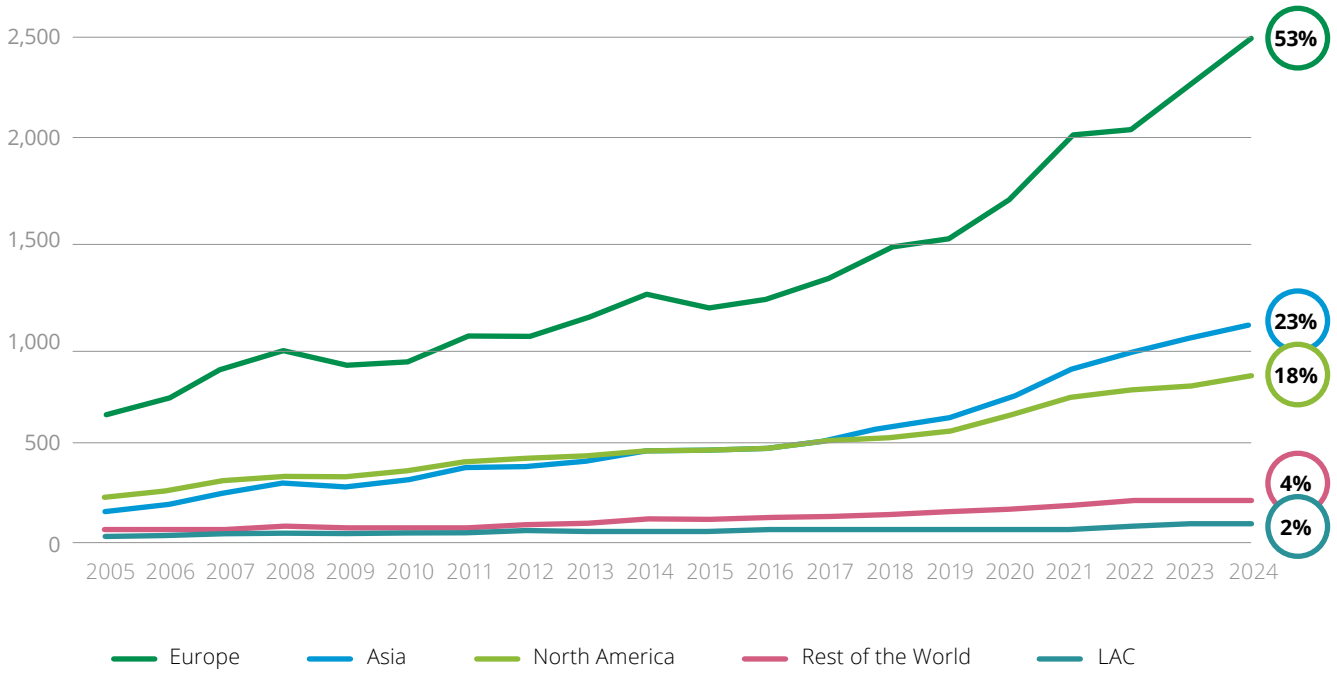
LAC's share of global trade in digitally delivered services trails those of other regions such as Europe, Asia, and North America (see figure 1.5), which had shares of 53%, 23%, and 18% in 2024, respectively. These trends and patterns suggest considerable room for improvement and further expansion of this dynamic trade modality in the region.

The drivers of LAC's digitally delivered services export growth include business services (R&D, professional and management consulting, and technical, trade-related, and audiovisual services) and computer services (including computer hardware installation consulting, software implementation, data processing, and database services). The share of business services in LAC's total digital services exports grew from 47% in 2005 to 55% in 2024, while the share of computer services rose from 4% in 2005 to 18% in 2024 (figure 1.6). This increase reflects both supply and demand: the region's growing capabilities in knowledge-intensive services and the "servicification" of manufacturing, agriculture, and mining in export markets. Meanwhile, the share of telecommunication services and personal cultural and recreational services in the region's digitally delivered services export basket has significantly decreased.

17 See: https://fairplaylabs.com/about-us.

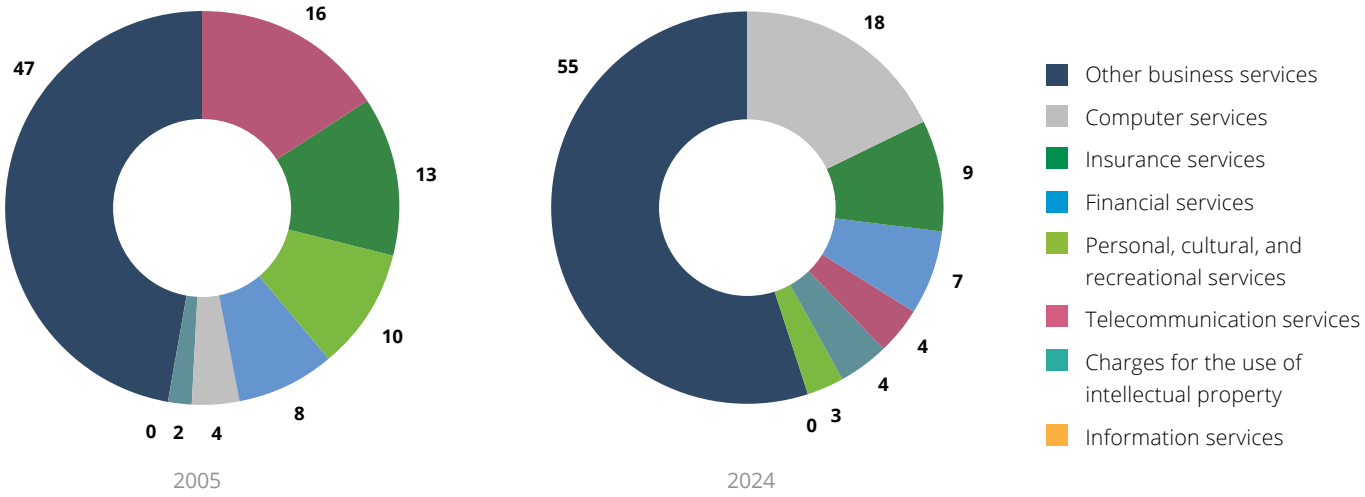
18 See: https://www.goodfirms.co/company/dnamic.

**FIGURE 1.5.** **Digitally delivered services exports by region, 2005–2024 (billions of US$ and % shares)**




Source: WTO (2024a).

**FIGURE 1.6.** **Structure of LAC's exports of digitally delivered services, 2005 and 2024 (% shares)**




Source: WTO (2024a).

However, there is considerable variation in the composition of digitally delivered services export baskets across individual LAC economies. For example, exports of digitally delivered services from Brazil, Chile, Colombia, El Salvador, Guatemala, and Uruguay are diversified, while The Bahamas' and Suriname's exports are heavily concentrated in other business services, and Nicaragua's in telecommunications services.

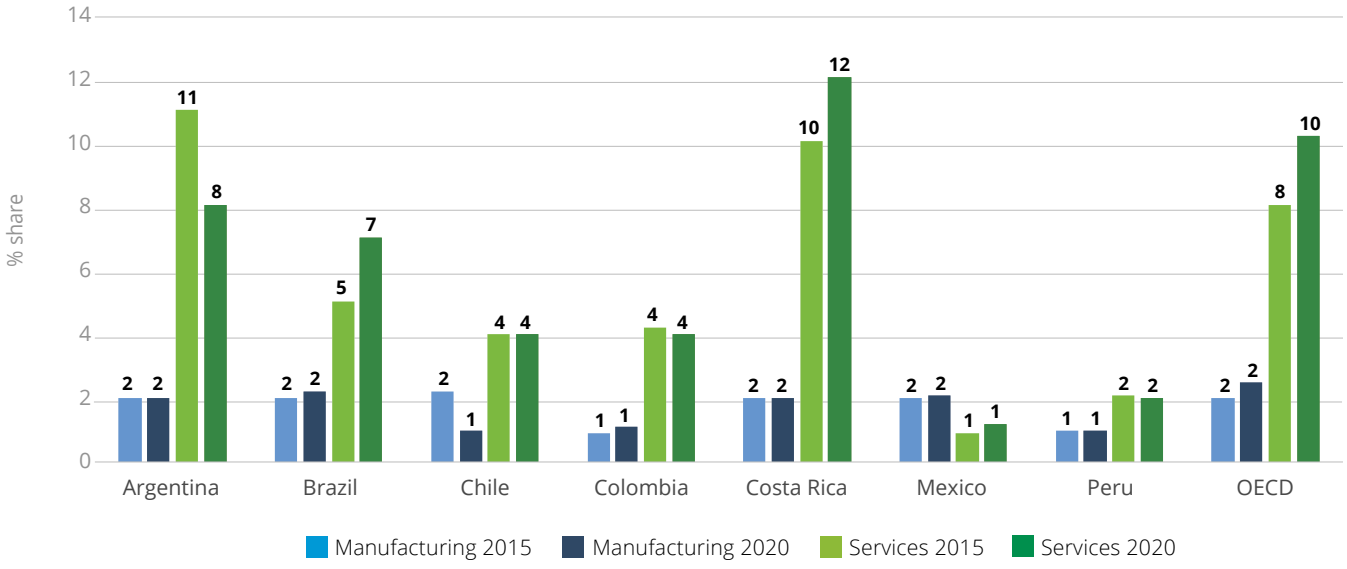
## Digital exports of services often start with indirect exports

LAC economies not only export services digitally directly; they also use these services as inputs in the export of goods and other services, thereby exporting them indirectly. The share of information and communication industry value-added (the closest proxy for digitally delivered services in the OECD Trade in Value-Added database) in total gross exports of LAC manufacturing is only 2%, but is as high as 12% in Costa Rica's exports and 8% in Argentina's. These levels are comparable to those of OECD nations (figure 1.7). One example of the growing use of information and communication technologies (ICT) services in production is the Mexican vehicle industry, where services such as virtual reality for training, digital twins for new designs and processes, and AI for preventive maintenance have improved production quality, reduced defects, and generated significant cost savings. In Argentina, Brazil, and Chile, services supplied by innovative agricultural technology companies ("agtechs") have promoted farm productivity and logistics supply chains (Puntel et al., 2022; Vitón et al., 2019; Achard, 2024; Seraphim, 2024).

In most LAC countries, the value added by ICT services is largely domestic. LAC ICT service providers can thus be indirect exporters that, by entering into LAC exporters' value chains, can share in the gains from trade. By meeting exacting exporters' requirements and scaling up, indirect exporters can position themselves to become direct exporters.[19] As figure 1.7 shows, ICT services' share of value-added in LAC's gross manufacturing exports is still low, although in Argentina and Costa Rica, they account for about one-tenth of the value-added in gross services exports.

19 For evidence on Japan, see Saito and Ito (2019).

**FIGURE 1.7. Share of information and communication industry value-added in LAC manufacturing and services gross exports (%)**

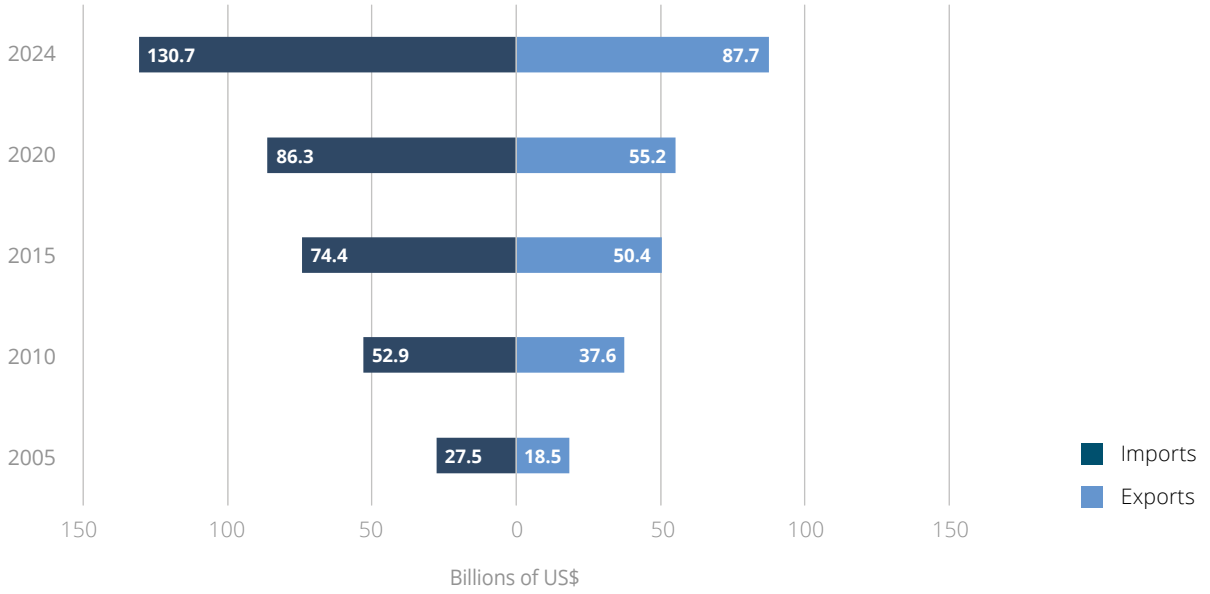



Source: OECD Trade in Value-Added (TiVA) database.

## LAC digitally delivered services imports are growing

Imports of digitally delivered services in LAC economies have also grown more than fourfold, rising from US$27.5 billion in 2005 to US$130.7 billion in 2024 (figure 1.8). Leading importers include Brazil (US$44.8 billion in digital services imports in 2024), Mexico (US$29.2 billion), Argentina (US$8.9 billion), and Chile (US$8.9 billion). These four countries are net importers of digitally delivered services and run the highest trade deficits in the region. Brazil's imports exceed exports by US$15.3 billion, while Mexico recorded a trade deficit of US$14 billion in 2024. Costa Rica and Panama are two of only six LAC economies to have recorded surpluses in digitally delivered services trade in 2024, equivalent to US$5.1 billion and US$1.2 billion, respectively.

**FIGURE 1.8. LAC trade balance in digitally delivered services, 2005–2024 (billions of US$)**




Source: WTO (2024a).

Digitally delivered services imports have diversified over the years, although there is again considerable variation across countries. Many Caribbean economies—such as The Bahamas, Haiti, Suriname, and Trinidad and Tobago—import mainly technical and trade-related services, while Central American economies and Paraguay tend to import insurance, pension, and financial services.

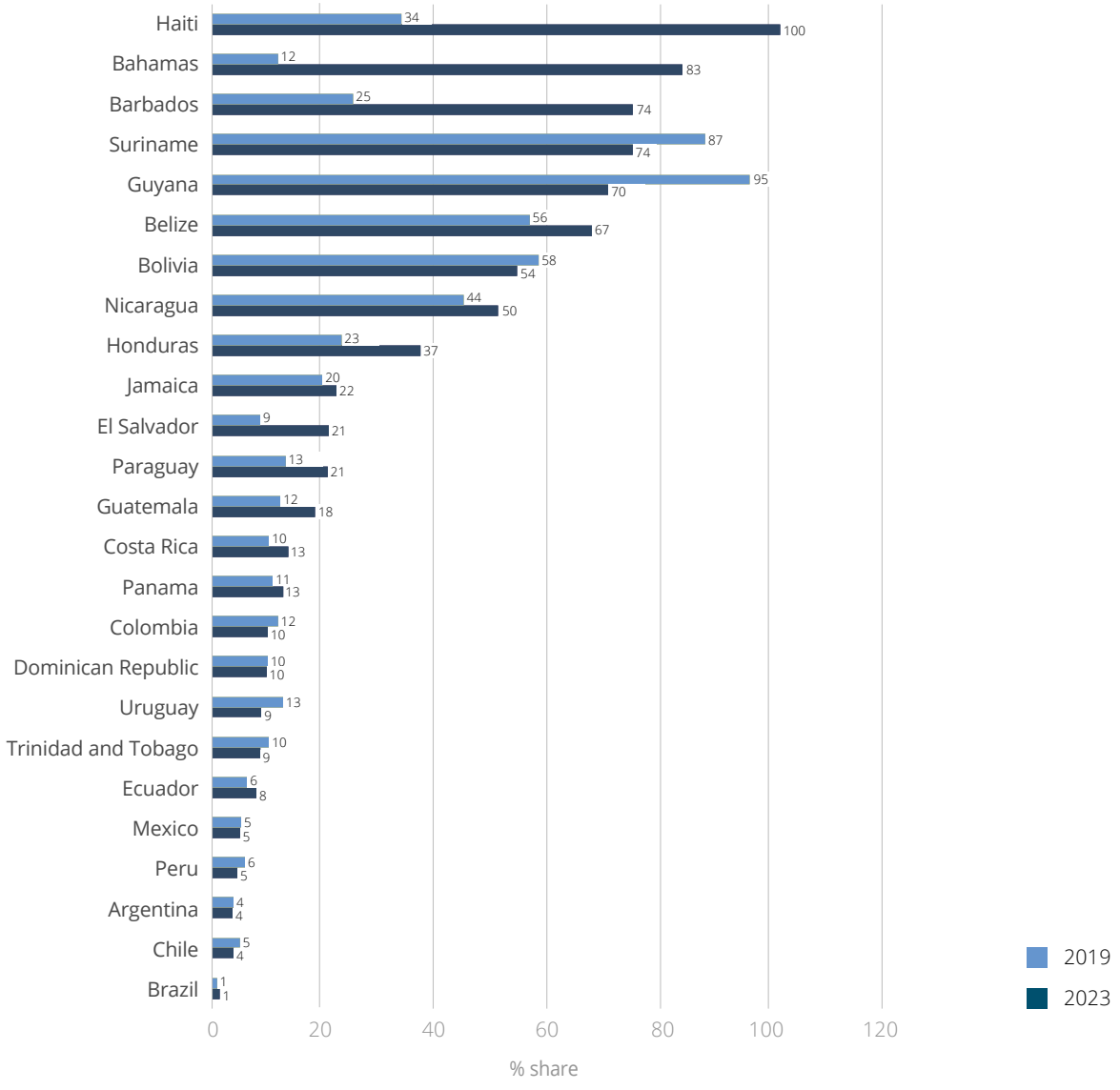
The growth of digitally delivered services imports in LAC reflects, in part, the demand by LAC industries for specialized services that would differentiate them from competitors and boost productivity. Some prominent examples of LAC companies that use digitally imported services include the Brazilian aerospace company Embraer, which uses US cloud computing (Amazon Web Services), AI, and autonomous vehicle technologies, and the Chilean mining company Codelco, which uses advanced process control systems and automation technology services from Switzerland.[20]

20 See Aviator (2019) and ABB (2024).

## Digitally ordered goods have strong domestic sales but appear to have limited export volumes

Data on digitally ordered goods trade are limited. One way to gauge cross-border flows is through Marketplace Explorer, developed by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) and the International Trade Centre (ECLAC, 2022). This tool tracks traffic on LAC marketplaces and platforms, as well as traffic from LAC to foreign platforms, most of which sell goods.

**FIGURE 1.9. Share of traffic originating abroad on e-commerce platforms in LAC, 2019 and 2023 (% shares)**




Source: ECLAC (2022) and International Trade Centre.

These data suggest that traffic to LAC countries' platforms originating from a foreign country still accounts for a relatively small share of the more than 23 billion total visits. Furthermore, with the exception of some Caribbean countries, this traffic did not increase significantly between 2019 and 2023. Foreign traffic is low in larger LAC economies, typically below 15% of the total (figure 1.9), suggesting that LAC firms' online sales are still mostly to local customers. In terms of total inbound foreign traffic, Mexico leads with over 163 million visits in 2023, followed by Brazil with 112 million and Colombia with over 72 million.

At the same time, survey data and, where available, data on actual cross-border transactions show that e-commerce has enabled more LAC firms to participate in trade (box 1.6). For example, in Peru, the Exporta Fácil program, which facilitates postal exports of parcels and thus reduces the fixed cost of exporting, enabling smaller firms to enter foreign markets, has helped catalyze exports at the extensive margin (Carballo et al., 2016). Firms are more likely to use Exporta Fácil when they introduce new products and enter new markets.

More LAC consumers have entered into trade by engaging in cross-border e-commerce. Data from Uruguay show that growth in cross-border online purchases has come from new shoppers, whose ranks swelled by 25% between January 2018 and January 2020 as Uruguayans began making more purchases overseas, especially from the US (Carballo et al., 2020).[21] However, the average transaction value dropped by 7.5%, as newer online shoppers tended to buy smaller-ticket items. Annual import values under the regular import regime fell by 2% between January 2018 and January 2020, while the number of transactions rose by almost 8% (Carballo et al., 2020). The Covid-19 pandemic accelerated this trend: between June 2020 and September 2021, Uruguayans' annual cross-border purchases reached US$82 million, an increase of 42%—and more than 200% since 2014 (Volpe Martincus, 2022). This was driven in part by an increase in buyers (over 370,000 people, or 16% of the adult population) and in transactions (over 640,000). In terms of products purchased, machinery, household appliances, and electrical equipment gained relative importance over clothing. Survey data on Southern Cone firms further show that businesses are using online channels to grow into multimarket exporters and expand their sales.

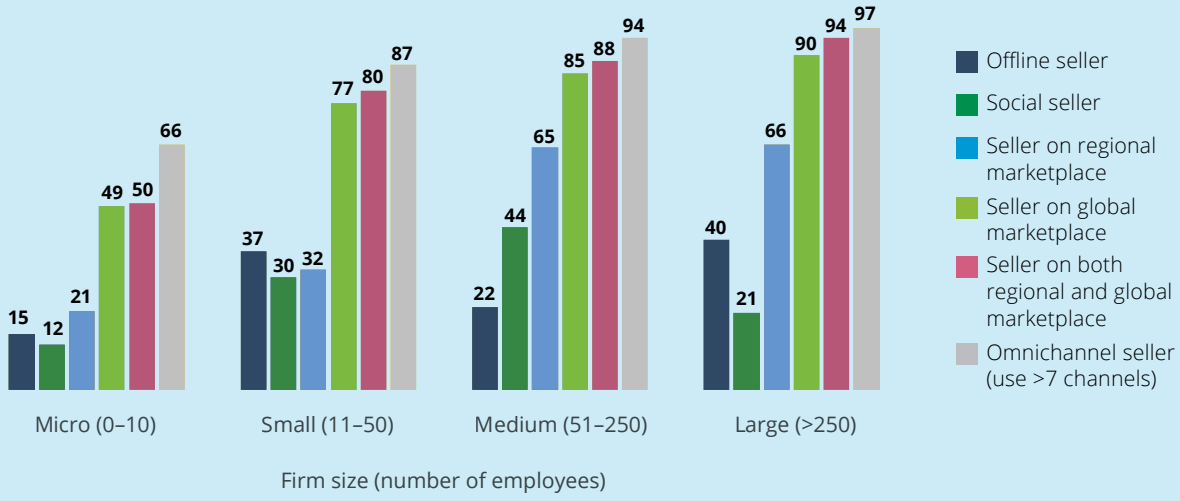
21 These figures were computed using a dataset that consists of all credit and debit cards purchases made abroad by residents of Uruguay between January 2018 and June 2020, under the country's franchise regime. This regime, first established in 2012, allows all adult Uruguayans (aged 18 and over) to buy noncommercial merchandise abroad up to three times per year, for amounts of up to US$ 200 (and 20 kilograms) per purchase, without paying customs duties or taxes.

## BOX 1.6. Growth of cross-border digital sales in the Southern Cone

In 2023, the Nextrade Group conducted a random-sample survey of 1,978 goods and services firms across sectors and firm size categories in the Southern Cone via online survey platforms and with support from the IDB. The study revealed a remarkable wave of adoption of digital sales channels among businesses in the subregion (Suominen, 2023). By 2023, almost all firms across size categories used social channels such as Facebook and Instagram, and most businesses had an online store. Most small, medium, and large enterprises also reported selling on one or several regional marketplaces, such as MercadoLibre. Indeed, the use of regional and global marketplaces such as Amazon, Alibaba, Freelancer, and eBay doubled among regional firms between 2020 and 2023.

The survey showed that e-commerce adoption is enabling Southern Cone firms to grow their sales and exports. Marketplace sellers and those with their own online stores reported particularly strong gains from e-commerce, including new clients, revenue, and export opportunities. Online sales and marketplace use, in particular, correlated with export activity across firm size categories. For example, whereas only 15% of microenterprises do not use online export channels, as many as 49% of microenterprises that used regional marketplaces and 50% of microenterprises that used global marketplaces reported exporting (figure C).

**FIGURE C. Export activity by online presence and firm size (% of firms that export)**




Source: Suominen (2023).

Intensive use of online distribution channels and the use of multiple channels also correlate with export diversification and sales to more distant markets. Some 45% of firms that derived over 10% of their revenue from online channels diversified their exports, as did 53% of firms that earned more than 50% of their revenue online, compared to offline sellers, of which only 26% diversified their exports. Omnichannel and marketplace sellers are more likely to export to Asian and European markets than social sellers, which are more focused on the South American and North American markets. In addition, firms that use e-commerce intensively have been particularly likely to diversify their import sources and vendors, thereby becoming better placed to manage supply chain shocks.

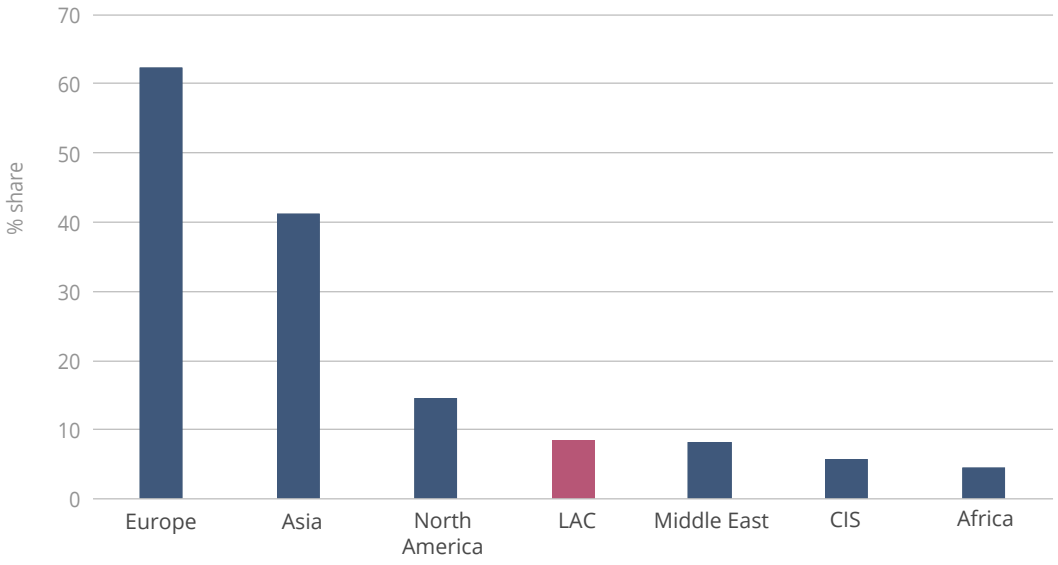
Online sellers that use multiple channels and diversify their exports and key markets are significantly more likely to experience consistent, fast revenue growth than offline sellers, even with only a few online sales channels. To be sure, marketplace use is only one factor underlying online sellers' success. Another important driver is the use of technology bundles and data that enable these sellers to streamline and scale their operations and compete in the global online marketplace.

However, several challenges remain. According to online seller-exporters, the top impediments to e-commerce growth include gaps in high-quality internet connectivity, challenges with digital marketing and maintaining online stores, and high trade costs. When asked why they might have lost an export sale, more than 40% of firms that sell products point to high logistics costs. Online sellers, in particular, highlight challenges in complying with domestic and foreign digital policies, such as data privacy and transfer rules and consumer protection rules.

## LAC's intraregional digital trade is small but remains an important springboard for small and medium-sized services enterprises

The share of intraregional trade in digitally deliverable services within LAC has grown more than fourfold since 2005 but remains small. Intraregional exports totaled US$7.8 billion in 2023, the latest year for which data are available, accounting for 8.4% of the region's exports, according to the WTO–OECD Balanced Trade in Services dataset (BaTiS) (WTO and OECD, 2024). This is lower than intraregional exports of goods, which made up 15% of all LAC trade in 2023 (Giordano and Michalczewsky, 2025). Relative to other regions, LAC's intraregional exports of digitally deliverable services are significantly lower than those of Europe (62.4%), Asia (41.3%), and North America (14.7%); comparable to those of the Middle East (8.2%); and higher only than those of the Commonwealth of Independent States (CIS) (5.7%) and Africa (4.5%) (figure 1.10).

**FIGURE 1.10. Share of intraregional digitally deliverable services exports in total digitally deliverable services exports, 2023**

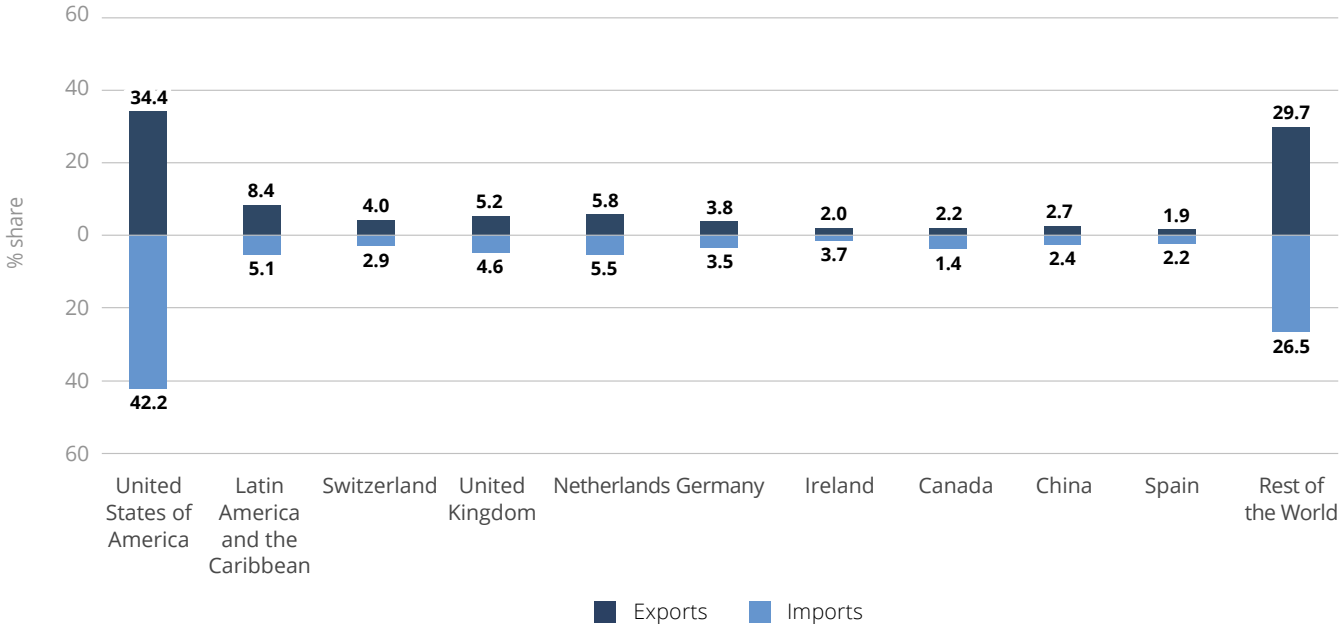



SOURCE: WTO AND OECD (2024).

In 2023, intra-LAC imports of digitally deliverable services accounted for 5.1% of the region's total. This share trails those of Europe (61.5%), Asia (39.3%), and North America (20.6%); is comparable to that of the Middle East (5.6%); and exceeds those of the CIS (3%) and Africa (2.9%).

The United States was LAC's largest export destination, accounting for 34.4% of total exports, followed at a considerable margin by the Netherlands, the United Kingdom, and Switzerland. Export growth to the United States was especially strong in professional and management consulting services and computer services, with average annual growth rates of 12% and 10%, respectively, between 2005 and 2023. Similarly, LAC economies primarily imported digitally deliverable services from the United States (42.2%), followed at some distance by the Netherlands and the United Kingdom (figure 1.11).

**FIGURE 1.11. Share of digitally deliverable services trade across LAC's top 10 trade partners, 2023 (% shares)**



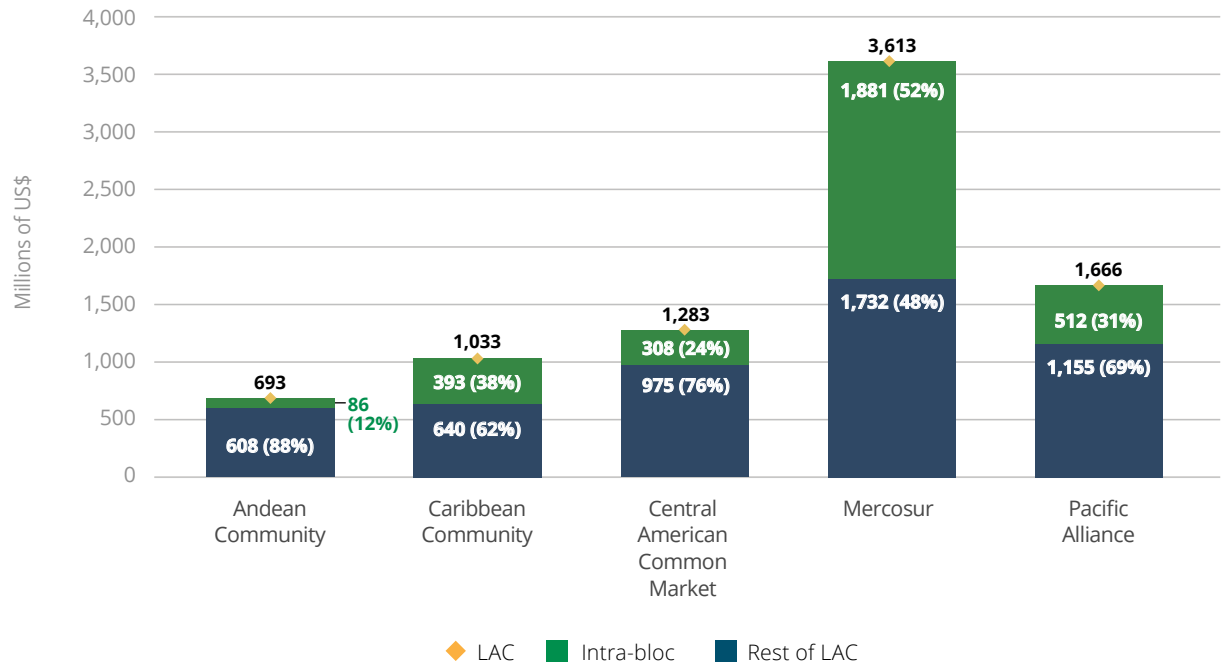

Source: WTO and OECD (2025).

Although intraregional exports of digitally deliverable services account for only a small share of the region's total, a substantial portion of these exports occurred within specific subregional blocs. In 2023, exports from Mercosur economies (Argentina, Bolivia, Brazil, Paraguay, Uruguay, and Venezuela)[22] to LAC amounted to US$3.6 billion (11% of total exports), the majority of which (52%) were to other Mercosur member countries. Similarly, although digitally deliverable services exports to LAC accounted for only 6% of exports from the Pacific Alliance (Chile, Colombia, Mexico, and Peru), or US$1.7 billion, 31% of these went to other members of the bloc (figure 1.12).

Despite this strong intrabloc digital trade, overall regional integration in LAC remains low, highlighting significant potential for expanding digital trade between subregions, strengthening cross-bloc connectivity, and enhancing regional economic resilience.

22 Mercosur membership is defined according to the classification provided on Mercosur's official website (https://www.mercosur.int/en/about-mercosur/mercosur-countries).

**FIGURE 1.12. Exports of digitally deliverable services of subregional blocs to LAC, 2023 (millions of US$, % share in LAC total)**

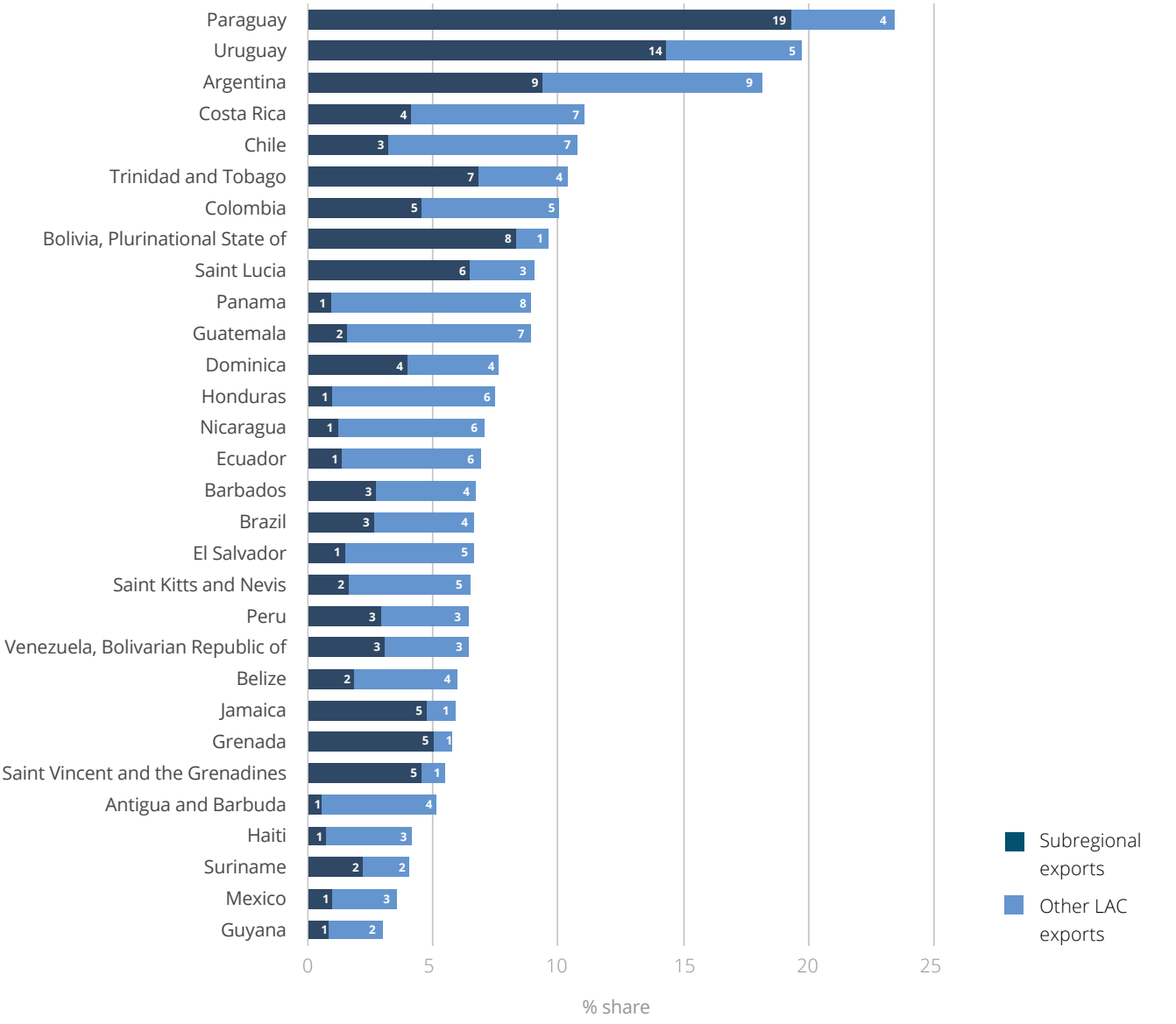



Source: WTO and OECD (2024).

Note: Colombia and Peru are members of both the Andean Community and the Pacific Alliance, and Bolivia is a member of both the Andean Community and Mercosur.

The weight of subregional exports in intra-LAC trade varies considerably across countries. In Paraguay, for instance, subregional markets are particularly significant: of the 23% of total exports directed to LAC, Mercosur partners alone accounted for 19%. Similarly, Uruguay exported 14% of its total exports to fellow bloc members and only 5% to other LAC economies, bringing its total exports to the region to 19%. By contrast, Panama sent only 9% of its exports to LAC, with 8% going to nonmembers of its own bloc, the Central American Common Market—highlighting its greater reliance on other LAC economies outside its bloc (figure 1.13).

## FIGURE 1.13. Share of subregional and other intra-LAC exports in total digitally deliverable services exports, 2023 (% shares)




Source: WTO-OECD Balanced Trade in Services dataset (BaTIS).

Note: Cuba and the Dominican Republic do not fall in any subregional group and are not included in the figure. In 2023, 7.9% and 6.4% of their exports of digitally deliverable services went to LAC.

Despite their relatively small share in total trade, LAC's intraregional and subregional markets are highly relevant for small and emerging exporters, surveys suggest. For example, in the Pacific Alliance, service providers start their export journeys within the bloc and use the regional market as a springboard to expand into further markets (box 1.7) (Nextrade and KIPU, 2022). Women-led firms in Central America tend to begin selling online and exporting to intraregional markets, expand next to LAC-adjacent markets like the United States, and only later scale to European and Asian markets (Cenpromype, 2024).

### BOX 1.7. The importance of intraregional market for Pacific Alliance digital services exporters

A 2022 study by Nextrade Group for the World Bank on digitally delivered services in the Pacific Alliance economies included a survey gauging the direction of 133 Pacific Alliance firms' sales (Nextrade and KIPU, 2022). The respondents were recruited by the various countries' trade and economy ministries. There were six policy-relevant findings:

1. Micro, small, and medium-sized enterprises (MSMEs) in the ICT sector are export-driven. Nearly half of midsized firms and almost one-third of micro and small firms exported in 2021, with 41% and 22%, respectively, exporting to the intraregional market. However, the importance of exports remains limited for these firms, with exports typically accounting for less than a quarter of their sales.

2. The surveyed exporters still typically sell to one or two markets, but they have diversified destinations slightly in recent years, from an average of 2.4 markets in 2019 to 2.7 in 2021. Most export to the Pacific Alliance economies, followed by the United States, the European Union, and Brazil. While the majority of digital services *exports* go to extraregional markets, most digital services *exporters* (that is, small businesses) sell mainly to the intraregional market. Only their collective trade values are still small. This may suggest that smaller providers of digitally delivered services begin their export journeys in the Pacific Alliance region, and that some firms then use the region as a springboard to expand into further markets.

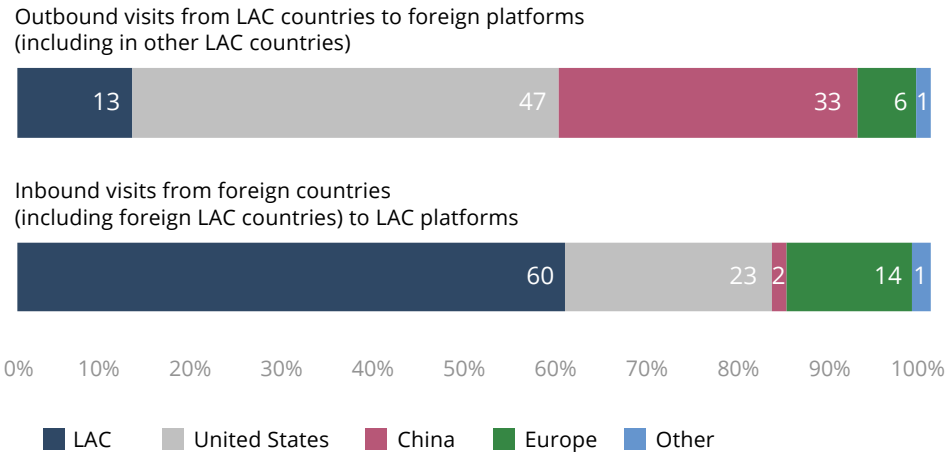
3. Pacific Alliance ICT firms that export are more technology-intensive than their nonexporting peers. For example, over 60% report using cloud computing and customer relationship management (CRM) systems, over 50% use accounting software, over 25% use enterprise resources planning (ERP) systems, and 20% use supplier management systems. The use of ICT services tends to be correlated with competitiveness and export participation. Three-quarters of the most digitized Pacific Alliance ICT services firms export, compared to only one-quarter of firms with low technology adoption rates.

4. Technology use and export participation rates vary. In 2021, 64% of total exports and 57% of exports to the Pacific Alliance involved high use of ICT services and technologies; 29% of total exports and 29% of exports to the Pacific Alliance involved medium use; and 23% of total exports and 14% of exports to the Pacific Alliance in 2021 involved low use.

5. Firms that use multiple online sales channels tend to export. Pacific Alliance ICT services firms also increasingly use omnichannel business models, leveraging several sales and marketing channels (such as social media, their own websites, email, online ads, and face-to-face meetings). Exporters in particular are more likely to use formal online sales channels.

6. Generally speaking, Pacific Alliance firms would benefit from diversifying their sales channels. Firms that use several sales channels are significantly more likely to report gains from online selling, including exporting, than those that rely on only a few channels. This highlights the power of omnichannel models to reach customers and build trust. However, both exporters and nonexporters underutilize content platforms such as YouTube or TikTok and global services marketplaces such as Freelancer.com, Upwork, Workana, and Fiverr, which could help them reach a much larger international customer base.

**FIGURE 1.14. Key sources and destinations of inbound and outbound LAC e-commerce traffic, 2023 (% shares)**




Source: ECLAC (2022) and International Trade Centre (https://www.cepal.org/en/notes/latin-america-and-caribbean-marketplace-explorer-lacme).

In 2023, proxy measures of flows of digitally ordered goods show that inbound traffic to LAC websites was dominated by three main sources: intraregional markets accounted for 60% of all inbound traffic, followed by the United States with 23% and Europe with 14% (figure 1.14).

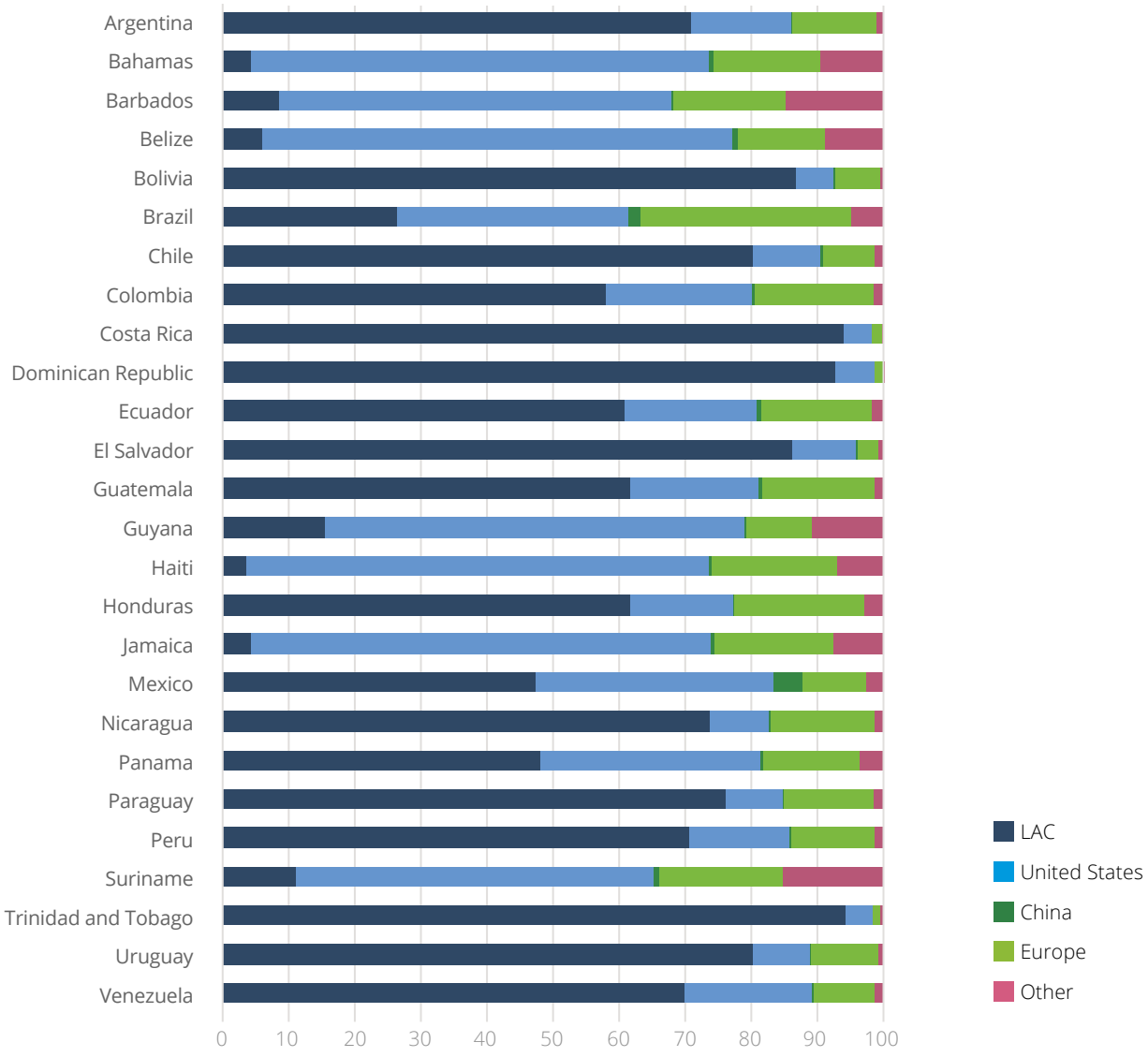
These aggregate results are primarily driven by Latin American economies, where intra-LAC traffic is the primary source for most countries. For example, Argentina, Chile, Costa Rica, the Dominican Republic, and Uruguay each receive 70% or more of their inbound traffic from within the region. Brazil is somewhat more diversified, with LAC and Europe each accounting for about one-third of inbound traffic.

In contrast, Caribbean countries, with the exception of Trinidad and Tobago, whose inbound traffic comes mainly from other LAC countries, generally rely much more heavily on the United States, which accounts for 50% or more of inbound traffic in Barbados, The Bahamas, Haiti, Jamaica and Suriname, while LAC's share is much smaller. Thus, while intraregional flows drive the total for LAC, the US remains the leading partner for most Caribbean countries (figure 1.15).

The majority of outbound traffic from LAC is to the US (1.8 billion visits or 47% of the total) and China (1.2 billion visits or 33%), reflecting the importance of these economies' marketplaces and platforms for online shoppers in LAC (figure 1.14).[23]

23 Similar trends are highlighted in consumer surveys: see, for example Delgado (2023).

**FIGURE 1.15. Direction of LAC economies' cross-border website traffic by region, 2023 (% shares)**




Source: ECLAC (2022).

## Conclusion

Digital trade in LAC is increasingly important. Digitally delivered services are the fastest-growing area of the region's trade, expanding almost fivefold between 2005 and 2024, from US$18.5 billion to US$87.7 billion, and now representing 34% of all services exports.

Despite this notable progress, the region accounts for only a small share of global digital trade. In 2024, LAC's digitally delivered services exports represented just 2% of the global total—below its 2.9% share of global services trade and 6.4% share of total goods trade. Although since 2005 these exports have grown at an average annual rate of 9%, marginally above the global rate of 8.4%, other regions have expanded far more rapidly, with Asia's exports growing at an annual rate of 11%, for instance.

For digitally ordered goods, comprehensive international data is limited. However, inbound website traffic to LAC marketplaces and e-commerce platforms may be used as a proxy for such trade. Although substantial (exceeding 23 billion visits), website traffic is predominantly domestic, with foreign traffic typically accounting for less than 15%. Mexico, Brazil, and Colombia lead on this metric.

While intraregional digital trade is growing, it remains modest, accounting for only 8% of the region's total digitally deliverable services exports—well below the 15% share for intraregional goods exports. For digitally ordered goods, intraregional sources accounted for 60% of all inbound traffic to LAC websites in 2023, making the intraregional market the most significant source of foreign inbound web traffic for most LAC countries. This highlights the importance of regional integration for the growth of digital goods trade in the region.

Together, these trends point to significant untapped potential for digital trade in LAC. Building on this analysis, chapter 2 will explore the underlying determinants and constraints shaping digital trade in the region, providing a deeper understanding of the factors that could unlock further growth and integration.

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# **Chapter 2.** Enabling Digital Trade: Key Drivers and Constraints

## Introduction

Digital trade holds considerable promise for driving economic growth and job creation in LAC. However, as shown in chapter 1, its relative importance in the region remains lower than in many other parts of the world. The question then naturally arises as to how LAC countries can participate more in digital trade and fully unlock its benefits. Addressing this question and designing a consistent, effective policy agenda requires identifying the factors that shape countries' abilities to engage in this growing, increasingly important trade modality. These factors include elements of the digital business environment, such as the degree of openness of relevant sectors; the availability and quality of digital infrastructure and resulting levels of connectivity; policy interventions that affect specific sources of trade costs (e.g., administrative border processing costs, information frictions); and firms' capabilities and means of operating, including digital skills and access to finance. Specifically, these factors are:

- trade regimes in backbone goods and services sectors,
- policies and regulations governing digital trade,
- digital infrastructure and connectivity,
- cross-border digital payment systems determining international financial transaction costs,
- logistic services and border agencies' procedures determining transport and administrative processing costs, including delivery and border times,
- export promotion policies determining the severity of information frictions,
- firms' capabilities and digital skills, and
- firms' access to finance.

The order in which the specific factors appear in the above list does not necessarily reflect their relative importance; rather, it corresponds to the conceptual framework used to organize and categorize them. Indeed, their relative importance is likely to vary according to each country's development stage, structural characteristics, and policy challenges.

Box 2.1 presents new empirical evidence on the role of a subset of these factors in shaping digital trade, specifically those for which consistent data are available across a large set of countries over time. This evidence indicates that digital regulations, regional trade agreements (RTAs) with services provisions, digital infrastructure, tax treaties, and skill endowments matter for trade in digitally delivered services. More

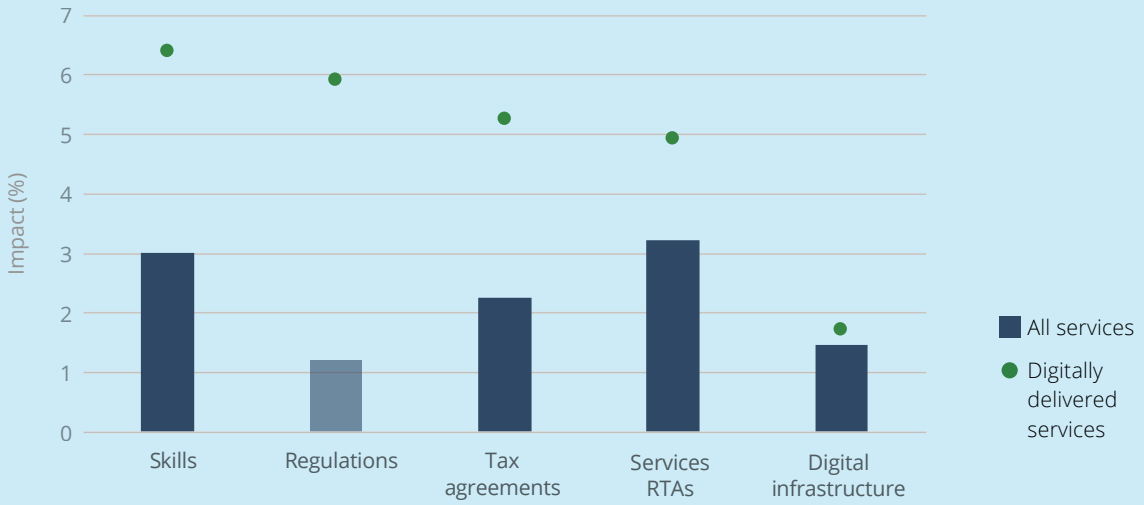
precisely, other things being equal, economies tend to export more digitally delivered services when they have more effective digital regulations, larger networks of preferential trade agreements covering services and tax treaties, better digital infrastructure, and larger shares of skilled workers.

### BOX 2.1. Enabling factors for digitally delivered services trade

Factors such as regulations, trade agreements, infrastructure, taxation, and skills have been found to be critical determinants of digitally delivered services trade. A new empirical analysis covering 73 countries from 2014 to 2023 (Rocha et al., 2026) finds that digital trade regulations, including measures related to telecommunications or digital infrastructure and electronic transactions, shape services trade, including when conducted electronically. A 1% improvement in countries' regulatory scores in these areas is associated with a 5.9% increase in digital services exports. The same holds for RTAs that include services disciplines. In this case, the digital export gains associated with a 1% increase in the number of RTAs would amount to 4.9%. Enhancements in digital infrastructure can also boost services trade. Thus, a 1% increase in the number of internet servers per inhabitant is associated with a 1.5% expansion in total services trade and a 1.7% expansion in digital services trade. In the same vein, bilateral or plurilateral double taxation treaties (DTTs) are also correlated with digital trade flows, with potential export gains of up to 5.3%. These findings suggest that DTTs help support this trade by preventing income from being taxed twice, reducing compliance costs, providing legal certainty, and encouraging investment.[24] Finally, increasing the share of the population with postsecondary degrees by 1% is associated with a 3% expansion in overall services trade and a 6.5% increase in digital services trade.

24 This report does not include a discussion of DTTs. Based on the evidence provided by the analysis in box 2.1 and direct insights from the private sector, the IDB Group and the World Bank recommend strengthening DTTs and promoting international cooperation and information exchange in tax matters as important components of a digital trade strategy.

**FIGURE D. Estimated average impact of select determinants on services and digitally delivered services exports (% shares)**




Note: Average effects correspond to a 10-standard-deviation increase in the determinant variable. All coefficients are significant at the 1% level, except for digital infrastructure (significant at the 5% level) and regulations for all services sectors (not significant). Regulations are measured using the OECD Digital Services Trade Restrictiveness Index (a higher value denotes greater trade restrictions). Services RTAs and DTTs refer to the total number of RTAs covering services and tax agreements, respectively. Digital infrastructure is proxied by the number of secure internet servers per capita. Skills are proxied by the share of the labor force with at least a postsecondary degree. Admittedly, some determinants of digital trade identified in this chapter could not be considered in this analysis (e.g., cross-border digital payments, customs and logistics, and firm capabilities). This should not be interpreted as implying that these factors are less relevant.

The impact is pronounced particularly in the following sectors:

- financial services,
- charges for the use of intellectual property rights (e.g., patents, trademarks, licensing agreements, copyright),
- ICT services,
- audiovisual and related services, and
- other business services (e.g., R&D and professional services).

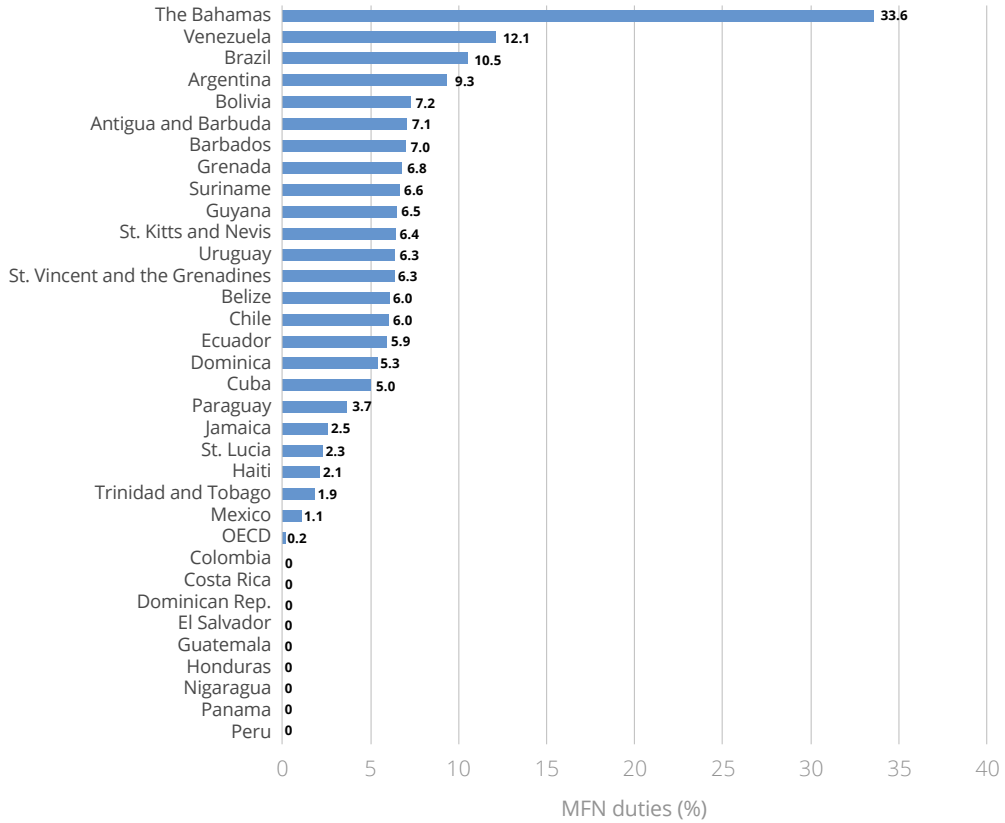
Source: Rocha et al. (2026).

## Trade regimes in backbone goods and services sectors

The backbone infrastructure for digital trade comprises a wide range of ICT goods, such as computers, mobile phones, telecommunications equipment, and semiconductors, as well as telecom and computer services, and a number of other enabling services. An open trade regime can lower the costs of these goods and services, promote greater use and adoption of technology worldwide, and thus foster digital trade. The impact is even greater when this liberalization is bound in trade agreements, as these provide stronger safeguards against trade-restrictive policy reversals.

Nine LAC countries (Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and Peru) have joined the WTO's Information Technology Agreement (ITA) and eliminated (and bound) tariffs on ICT-covered goods. For the rest of the region, applied tariffs range from 1% in Mexico to more than 10% in countries such as Brazil, with most in the 4%–8% range (figure 2.1).

**FIGURE 2.1. Average most-favored-nation applied duties on ICT goods in LAC, 2024 (%)**

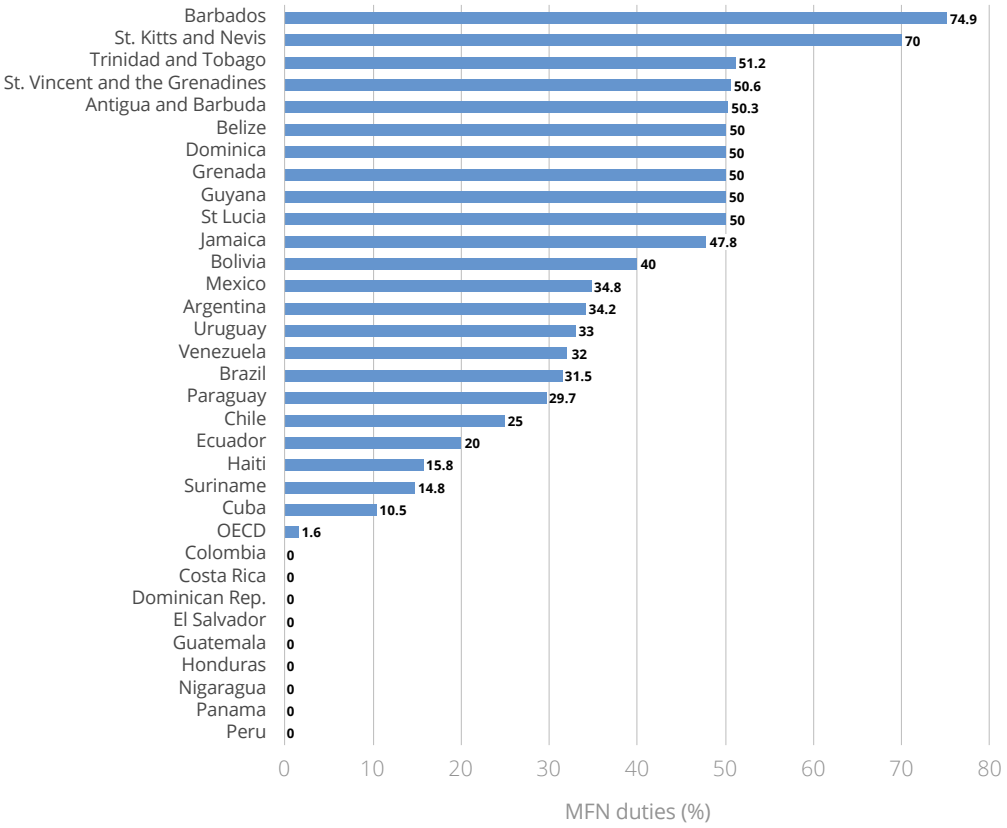



Note: ICT goods are those covered under the WTO's ITA. EU Member States are counted individually.

Source: WTO Analytical Database.

Nevertheless, most non-ITA signatories in LAC have also bound the most-favored-nation tariffs on ITA products in their respective General Agreement on Tariffs and Trade (GATT) schedules of concessions, except for Cuba, Haiti, and Suriname. By doing so, they have set an upper limit for those tariffs and increased predictability for businesses. Still, the average bound duties on ITA goods in the region are rather high, with most countries having set them at above 30% (figure 2.2).

**FIGURE 2.2. Average most-favored-nation bound duties on ICT goods in LAC, 2024 (%)**




Note: ICT goods are those covered under the WTO's ITA. EU Member States are counted individually.

Source: WTO Analytical database.

Services are another critical backbone of digital trade. Telecommunications, postal and courier services, distribution, computer services, financial services, and transport and logistics are some of the key sectors that support digital trade.[25] A typical digital trade "value chain" would start with a consumer accessing

25 Digitally ordered goods trade relies on rapid delivery. Although rail and especially maritime freight services do not offer fast connectivity, they remain a critical backbone of digital trade, as online distribution platforms frequently rely on inventory shipped by sea to storage and warehousing facilities in major consumer markets to fulfil international digital orders.

the internet (telecommunication services), performing an internet search (computer services), buying a product online, probably from a platform (distribution of goods and payment services), having the good physically delivered (postal, courier, transport, and logistics services), or having the product digitally delivered (telecommunication services).

Open trade regimes in backbone services have a positive impact on digital trade. Thus, for instance, open telecommunications markets that enable the entry of new firms and strengthen competition have been found to result in lower prices, higher-quality services, and higher broadband internet penetration rates (World Bank and WTO, 2023). This enables a larger number of firms and consumers to be digitally connected, thereby fostering internet use and increasing digital trade.

The World Bank–WTO Services Trade Restrictions Index (STRI) provides a synthetic measurement of the restrictiveness of applied services trade regimes. The index covers 134 economies, including 13 in LAC—Argentina, Belize, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Peru, and Uruguay (World Bank and WTO, 2026). The STRI assesses policies such as discriminatory measures, quantitative restrictions, and other impediments, including inadequate regulatory or competition policies. The index ranges from 0 (completely open) to 100 (totally closed).[26]

LAC's STRIs in backbone services sectors reveal that the region generally has a more open trade policy regime than the rest of the world. For instance, in the telecommunications and computer services sectors, the average STRIs for the region are lower (i.e., more open) than the global average (figure 2.3.a), except for mobile telecommunications services. Uruguay and Ecuador are among the countries with the most liberal regimes. Nevertheless, some LAC countries' STRI scores exceed 50, indicating that substantial restrictions remain—such as nationality requirements on boards of directors or employees, screening of foreign investment, and restrictions on cross-border data flows—or that there is an absence of procompetitive rules—such as regulations on resale rates and conditions, number portability, or a specific statute on competition.

LAC's applied trade regime in postal and courier services, road, rail, and maritime freight transport is also quite open compared to both the global average and that of OECD countries. Conversely, the trade policy environment for distribution services, especially retail distribution, is more restrictive than the global average (figures 2.3.b and 2.3.c). Still, there is variation across the LAC countries covered by the index. For instance, Argentina, Chile, Brazil, Panama, and Costa Rica have relatively restricted regimes in road freight transport, whereas Jamaica and Panama are relatively more closed in rail freight transport, reflecting the presence of monopolies. Finally, the region fares comparatively well in the openness of the commercial

26 STRI database available at https://itip-services-worldbank.wto.org/default.aspx.

banking sector, which includes payment services.[27] Costa Rica and Uruguay have the most liberal regimes in LAC, while Mexico and Argentina have the least (figure 2.3.d).

**FIGURES 2.3. Openness of digital trade–enabling service sectors in LAC, OECD economies, and globally, by sector**

*Figure 2.3.a. ICT services*

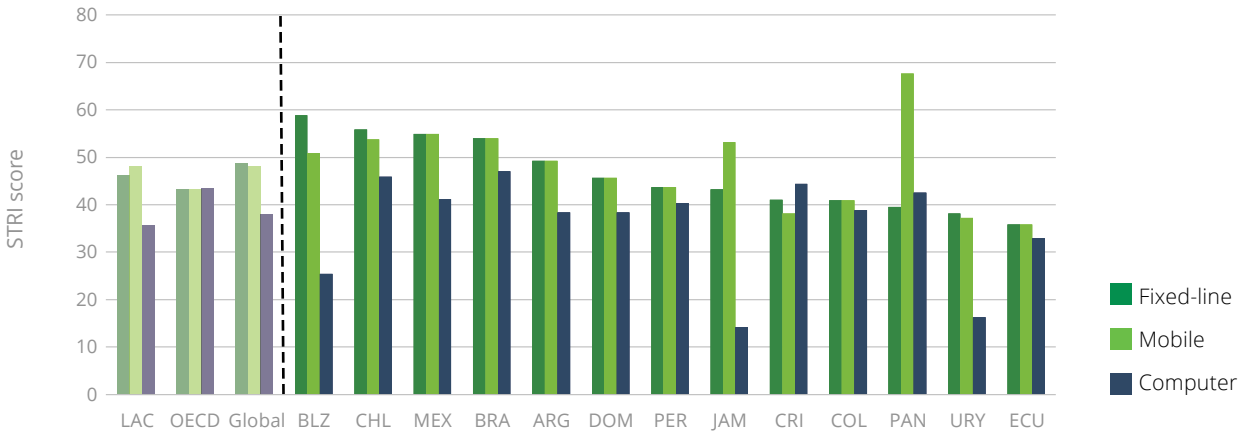
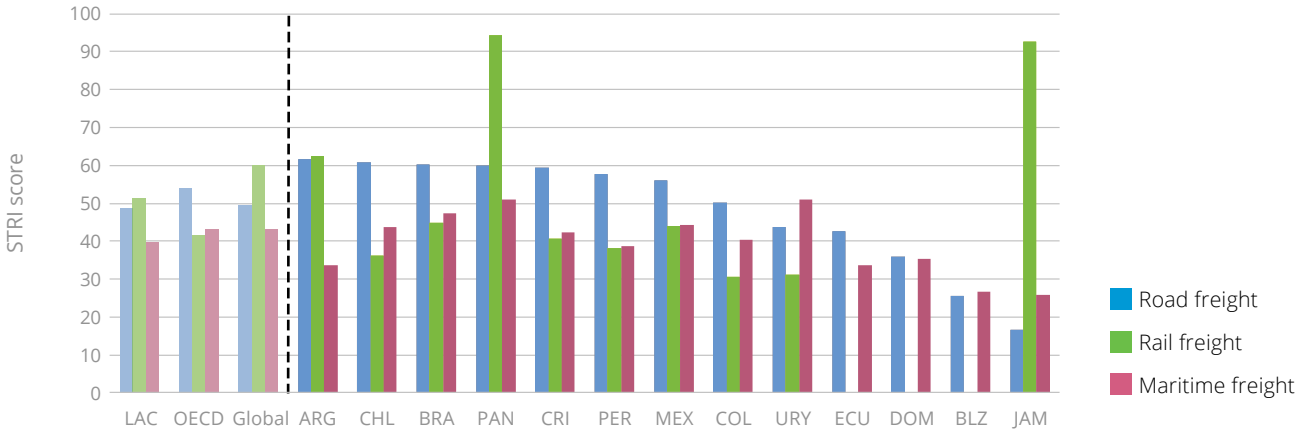



*Figure 2.3.b. Freight transport services*




27 For the STRI, commercial banking services includes most services supplied by banks, such as acceptance of deposits and other repayable funds from the public, lending of all types, financial leasing, guarantees and commitments, and payment and money transmission services.

*Figure 2.3.c. Distribution and postal and courier services*

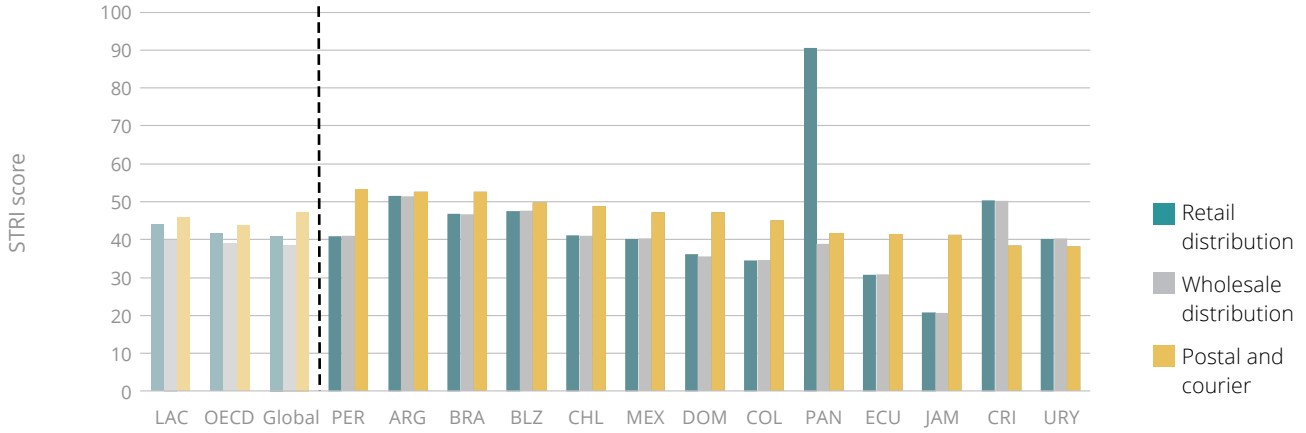
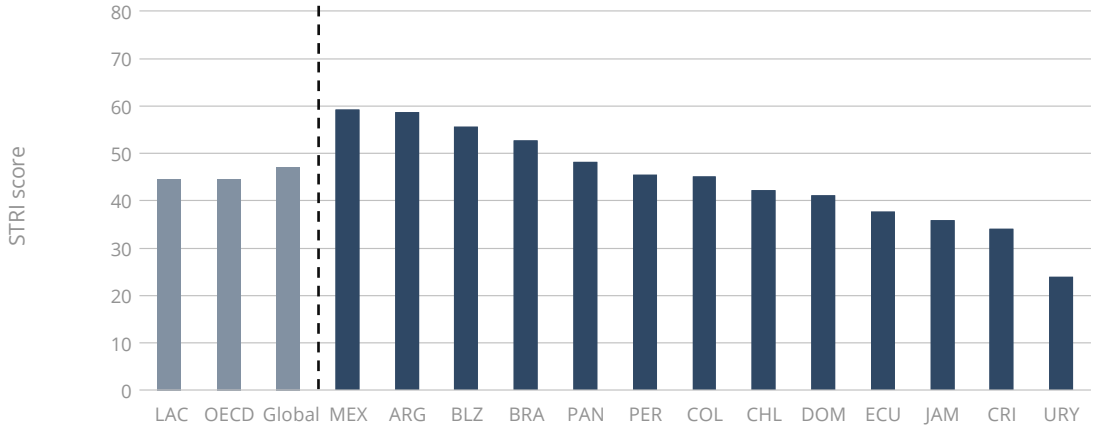



*Figure 2.3.d. Commercial banking services*




Notes: The global STRI is the average score across 134 economies in the World Bank–WTO database as of February 2025. STRI scores for rail freight services are not calculated for the Dominican Republic, Ecuador, and Belize.

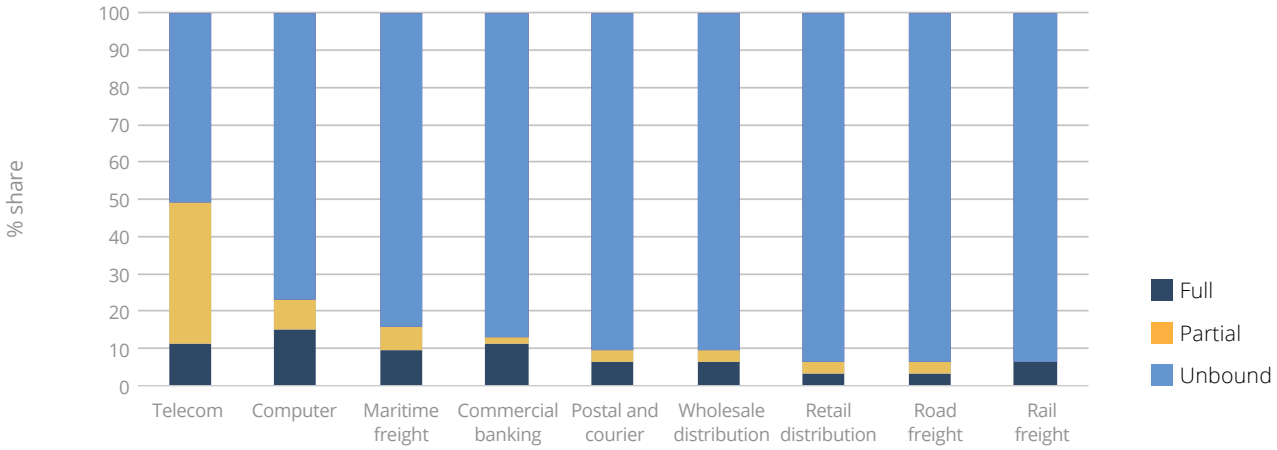
Source: Authors' calculations using the World Bank–WTO STRI. See https://itip-services-worldbank.wto.org/default.aspx.

The General Agreement on Trade in Services (GATS)[28] enables WTO Members to guarantee the conditions for services trade in the sectors they select and to the extent set out in their individual schedules of commitments, thereby ensuring that trade policies will not be made more restrictive.

However, LAC countries have generally guaranteed trading conditions under the GATS for relatively few backbone services and offered relatively low levels of access. The one exception is telecommunications services, where all but one LAC WTO Member have undertaken GATS commitments, albeit with varying degrees of binding. As figures 2.4.a and 2.4.b show, there is significant sectoral variation in the level of trade openness inscribed in the GATS schedules of LAC countries for backbone sectors, both for cross-border supply (mode 1) and for supply through the establishment of a commercial presence (mode 3).[29] Given that these two modes are by far the most commercially significant,[30] bindings in these modes can contribute to fostering competition in digital trade–enabling services, improving their availability, affordability, and quality. Overall, LAC countries have undertaken shallower commitments in road and rail freight, retail and wholesale distribution, and postal and courier services. At the same time, deeper bindings are observed in telecommunications services, computer and banking services, and, to a lesser extent, maritime freight transport services.

**FIGURES 2.4. LAC's commitments in digital trade–enabling services, by sector (% shares)**

*Figure 2.4.a LAC's commitments in digital trade–enabling services under GATS mode 1*

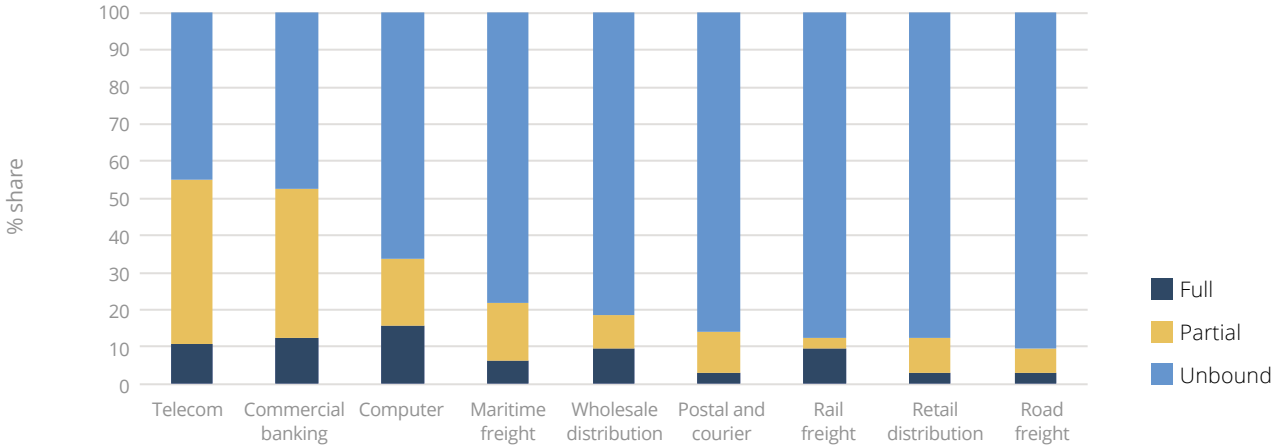



28 The GATS defines four modes by which a service can be supplied internationally: mode 1 is cross-border trade (e.g., via the internet); mode 2 is consumption abroad (e.g., through international tourism); mode 3 is the commercial presence of an enterprise (e.g., through foreign direct investment); and mode 4 is the movement of natural persons (e.g., through temporary labor mobility).

29 The analysis includes both sectors that were scheduled by LAC WTO Members and unscheduled sectors, treating unscheduled sectors as "unbound" by default.

30 According to the latest WTO estimates (2022), modes 1 and 3 account for 35% and 56% of global services trade, respectively.

*Figure 2.4.b. LAC's commitments in digital trade–enabling services under GATS mode 3*




Note: The level of liberalization is categorized into "full" commitments (i.e., unrestricted), "partial" commitments (with some limitations), and "unbound" commitments (no guaranteed liberalization). Shares for the three liberalization categories are calculated for each represented sector. Both scheduled and unscheduled sectors are included in the analysis, with unscheduled sectors treated as 'unbound" by default. Each bar reflects the combined entries for the given sector across all 32 LAC WTO Members.

Source: Authors' calculations based on GATS Schedules of Commitments (https://www.wto.org/english/tratop_e/serv_e/serv_commitments_e.htm).

Around half of LAC countries have subscribed to the procompetitive disciplines in the GATS Basic Telecommunications Reference Paper. This contains a set of regulatory obligations related, inter alia, to anticompetitive practices, interconnection, licensing criteria, independent regulators, the allocation of scarce resources, and transparency, which contribute to the achievement of affordable and efficient telecom infrastructure.[31] In total, around 105 WTO Members have undertaken these obligations.[32] Table 2.1 shows which LAC countries have subscribed in full or in part.

Only a handful of countries in the region have adhered to the set of Services Domestic Regulation disciplines developed recently by a group of WTO Members (see table 2.1).[33] These disciplines aim to increase the transparency, predictability, and efficiency of authorization procedures for service suppliers, including those engaged in digital trade.[34] As of December 2025, the disciplines have become legally binding for 55 WTO Members as part of the commitments set out in their GATS schedules. Of the eight LAC countries that have inscribed the Services Domestic Regulation disciplines in their GATS schedules, Brazil,

31 For analysis of the impact of these disciplines, see, for example, Blouin (2000).

32 See WTO site on telecommunications commitments: https://www.wto.org/english/tratop_e/serv_e/telecom_e/tel23_e.htm.

33 See WTO Services Domestic Regulation: https://www.wto.org/english/tratop_e/serv_e/jsdomreg_e.htm.

34 For analysis of the impact of these disciplines, see So and Bekkers (2024).

Costa Rica, Paraguay, and Uruguay will notify the date of entry into force of these new disciplines after they complete their respective domestic procedures. The disciplines are already in force in the other four countries (Argentina, Chile, El Salvador, and Peru).

**TABLE 2.1. Adherence of LAC WTO Members to the GATS Telecom Reference Paper and to Services Domestic Regulation disciplines**

| Legal instruments | LAC WTO Members |
|---|---|
| Both Telecom Reference Paper and Services Domestic Regulation | Argentina, Chile, El Salvador, Peru |
| Only Telecom Reference Paper | Antigua and Barbuda, Barbados, Belize, Bolivia, Colombia, Dominica, Dominican Republic, Grenada, Guatemala, Honduras, Jamaica, Mexico, Suriname, Trinidad and Tobago, Venezuela |
| Only Services Domestic Regulation | Brazil, Costa Rica, Paraguay, Uruguay |
| Neither | Cuba, Ecuador, Guyana, Haiti, Nicaragua, Panama, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines |

Source: Authors based on GATS Schedules of Commitments (https://www.wto.org/english/tratop_e/serv_e/serv_commitments_e.htm).

# Policies and regulations governing digital trade

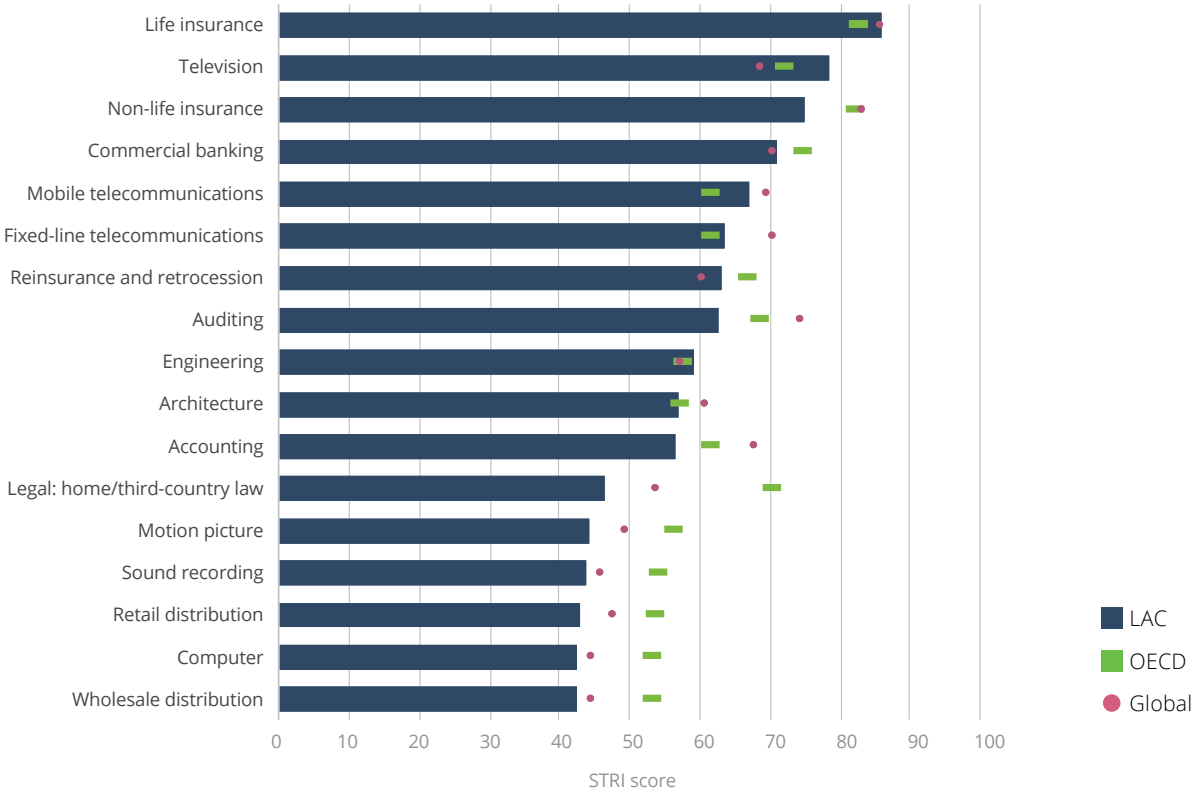
Opportunities for digital trade are shaped by policies and regulations that affect market entry and operations for services amenable to digital delivery, as well as the digital economy more generally. These are explored in the following subsections.

## Trade regimes in digitally deliverable service sectors

The conditions applicable to the international, remote provision of digitally deliverable services can be gauged through the STRI for cross-border supply. Figure 2.5 presents the average mode 1 STRI scores for all the economies covered by the index, and specifically for the 13 LAC countries included in it. The figure shows that, compared to global averages, LAC has a relatively open cross-border trade regime for many digitally deliverable services. Specifically, the region is less restrictive in over half of the sectors, particularly for some professional, financial, and telecommunications services. However, LAC countries are

comparatively more restrictive than the rest of the world in sectors such as television, reinsurance and retrocession, and engineering services.

**FIGURE 2.5. Average mode 1 STRIs in digitally deliverable services (LAC, OECD economies, and global average)**

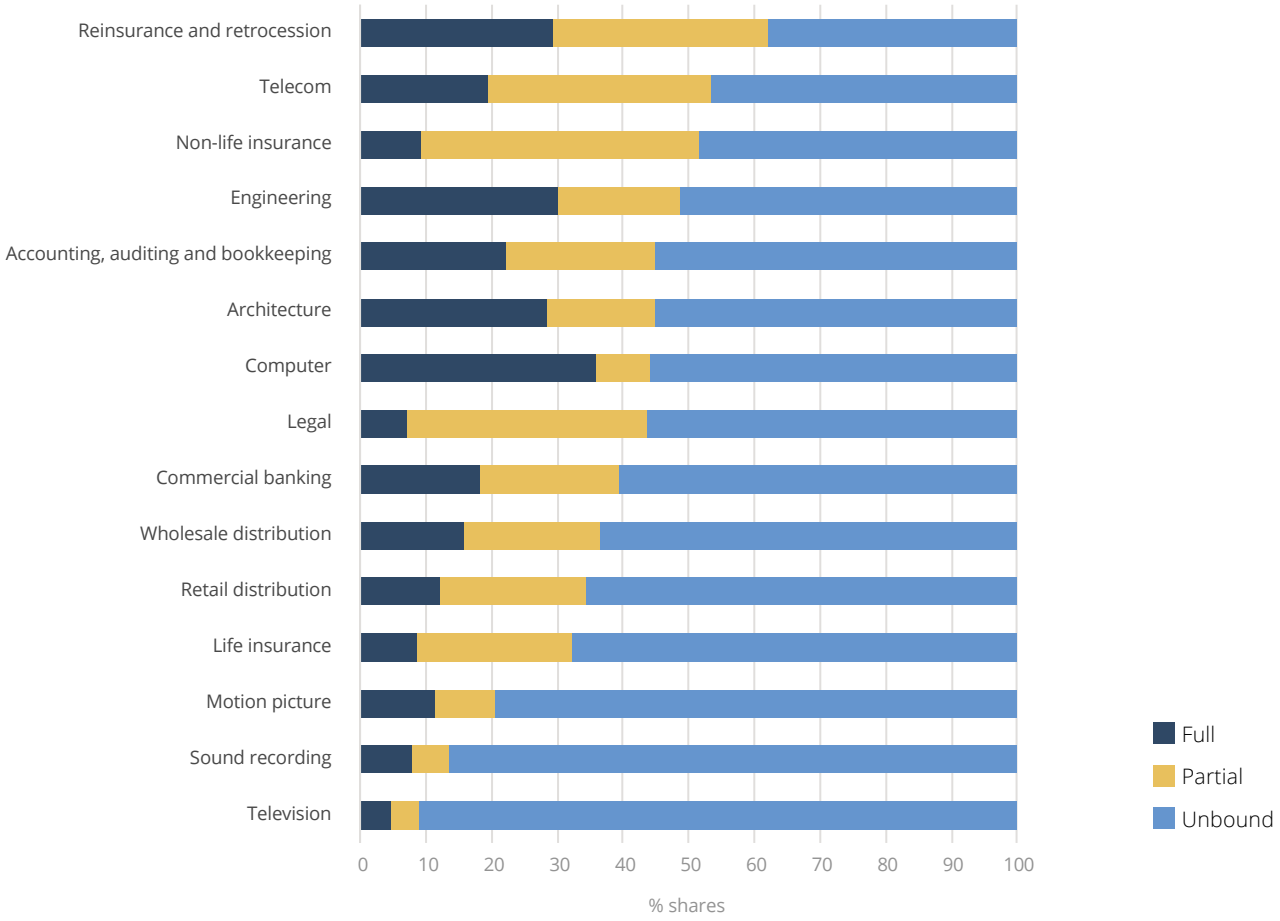



Source: Authors' calculations using the World Bank–WTO STRI (https://itip-services-worldbank.wto.org/default.aspx).

Notes: The global STRI is the average score across 134 economies in the World Bank–WTO database as of February 2025. In the case of legal services, the mode 1 STRI sector coverage is limited to legal advisory and representation services for home/third-country law. For commercial banking, the sector coverage includes acceptance of deposits, lending of all types, financial leasing, all payment and money transmission services, as well as guarantees and commitments. For television services, the coverage excludes radio.

This trade regime for digitally deliverable services is not fully guaranteed, however. At present, the level of openness that WTO Members have committed to in mode 1 is, overall, relatively shallow (figure 2.6). This affords firms limited protection against trade-restrictive policy reversals.

**FIGURE 2.6. Level of GATS mode 1 commitments in select digitally deliverable services (% shares of total commitments)**




Source: Authors' calculations based on GATS Schedules of Commitments (https://www.wto.org/english/tratop_e/serv_e/serv_commitments_e.htm).

Note: The level of liberalization is categorized into "full" commitments (i.e., unrestricted), "partial" commitments (with some limitations), and "unbound" commitments (no guaranteed liberalization). Shares for the three liberalization categories are calculated for each represented sector. Both scheduled and unscheduled sectors are included in the analysis, with unscheduled sectors treated as "unbound" by default. Each bar reflects the combined entries for the given sector for all 166 WTO Members.

## The WTO moratorium on the application of customs duties to electronic transmissions

Since 1998, WTO Members have periodically agreed to extend a prohibition on the imposition of customs duties on electronic transmissions—the so-called Moratorium, which has been repeatedly renewed at WTO Ministerial Conferences.[35] Some WTO Members, however, have expressed concerns about the

35 The Moratorium lapsed at the closure of the 14th Ministerial Conference on 30 March 2026, although WTO Members came close to agreeing to its renewal and efforts continue towards finding a way forward.

opportunity costs of the Moratorium, notably in terms of forgone customs revenue, and have argued against its renewal. Uncertainties exist about its scope and the definition of electronic transmissions, but existing estimates of the potential revenue that could be collected using tariffs on electronic transmissions vary between 0.01% and 0.33% of overall government revenue on average for developing economies, with higher losses for a handful of economies (IMF et al., 2023).

Value-added tax (VAT) or goods and services tax (GST) emerge as alternative approaches for generating revenue from digital trade (IMF et al., 2023). VAT offers higher revenue potential, is less distortive to trade flows, and applies uniformly to both domestic and foreign suppliers based on the location of consumption. It ensures fair revenue collection and avoids imposing a tax burden on intermediate inputs, making it particularly suitable for the digital economy. While tariffs and VAT are not mutually exclusive, evidence shows that VAT could generate higher revenue than customs duties for most economies, provided tax administrations have adequate resources, especially for collecting VAT from nonresident sellers (Hanappi et al., 2023; WTO, 2016).

## Regulatory frameworks for digital trade

Regulations play a crucial role in enabling or hindering the growth of digital markets and digital trade. An effective regulatory framework promotes digital trade by enabling cross-border transactions, building consumer trust through data protection and privacy, and providing operational guidelines for digital actors (World Bank, 2025a). This includes essential tools like electronic documents, e-signatures, and rules for managing cross-border information transfers.

However, regulations can also create challenges for digital trade by introducing measures that raise data transfer costs, impose burdensome procedures, or increase fragmentation. At the same time, some of these regulations may pursue legitimate public policy objectives, such as cybersecurity or privacy. Emerging technologies and the digital transformation pose new risks and challenges for governments and societies, confronting policymakers with the need to balance security considerations with data protection and privacy without limiting cross-border transactions unnecessarily.

In this context, countries can be considered ready for digital trade in regulatory terms when they have laws and rules in place across several areas that provide effective solutions to the challenges of digital trade, ideally in alignment with international standards. These areas include electronic transactions, digital identities, data protection, cybersecurity, and platform governance. Countries' readiness across these areas can be measured through the World Bank's Digital Trade Regulatory Readiness (DTRR) indicators (World Bank, 2025a), which assess how specific regulations and policies address over 100 issues ("regulatory solutions") related to the governance of cross-border digital trade.

In terms of regulatory readiness, LAC countries are generally in line with high- and upper-middle-income economies and thus above the global average.[36] Almost all countries in the region have rules on electronic documents. Regulations on e-signatures, digital ID, and data protection are also widespread. The same holds for rules on cross-border data and on paperless trade. However, regulations on clarifying the legal liability of platforms for content or products offered by their users ("intermediary liability") are scarce in the region. Only five countries have such frameworks (Jamaica, Mexico, Panama, Brazil, and Chile), and they are limited in scope.

Significant variations can be seen at the country level, but patterns are similar in all three LAC subregions (the Southern Cone, the Andean countries, and Central America and the Caribbean).[37] In general, trust-building regulations vary widely, and regulations that specifically affect platforms ("platform regulations"), especially intermediary liability, are substantially underdeveloped in all three subregions. Regulations on electronic transactions, in contrast, are fairly well developed across all three subregions (figure 2.7). LAC performs better than the OECD average on several aspects of electronic transactions and slightly below the OECD average on trust-building and platform regulations.

36 The DTRR database captures a selection of 118 countries at different levels of development that are broadly distributed around the world. However, the selection is not statistically representative of the distribution of countries in terms of income or location. High-income OECD countries, especially EU Members, are likely to be underrepresented in the sample.

37 Country groupings used in this report are based on available data. See figure 2.7 for coverage.

## FIGURE 2.7. Digital trade regulation readiness: country scores by LAC subregion




Source: World Bank (2025a).

Note: The color and size of bubbles represent regulatory readiness in each country or grouping by category, based on the share (in quintiles) of positive answers in that category, ranging from 0 to 100%. Data as of March 2024.

The OECD average includes Australia, Czechia, Estonia, France, Israel, Japan, Korea, Latvia, Lithuania, New Zealand, Norway, Slovenia, Switzerland, Türkiye, the United Kingdom, and the United States.

Paperless trade is covered in the section on trade facilitation.

## Regulations on electronic transactions

The regulatory framework that governs electronic transactions must ensure that contracts made remotely by electronic means are as valid and enforceable as in-person agreements. In particular, it must provide the regulatory tools for remote—including cross-border—contracts to be effective, such as recognizing electronic documents and e-signatures (World Bank, 2025a).

### 1. Electronic documents

Business-to-business (B2B) transactions often involve customizing products and services or periodic delivery over extended periods, which in turn require detailed, tailored contracts. A robust, reliable framework for e-contracts is essential for business. Being able to conclude or amend digital contracts securely and reliably across borders is crucial for providing certainty, reducing costs, and expediting business operations.

LAC countries have strong electronic document regulations grounded in best practices. All LAC countries except Brazil have adopted general legislation on electronic documentation along the lines of the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce of 1996. These rules give electronic contracts the same legal effect as paper documents and allow electronic documents to be admitted as evidence in legal proceedings. However, only Belize and Paraguay have passed regulations on electronic transferable documents.[38]

### 2. Electronic signatures and digital IDs

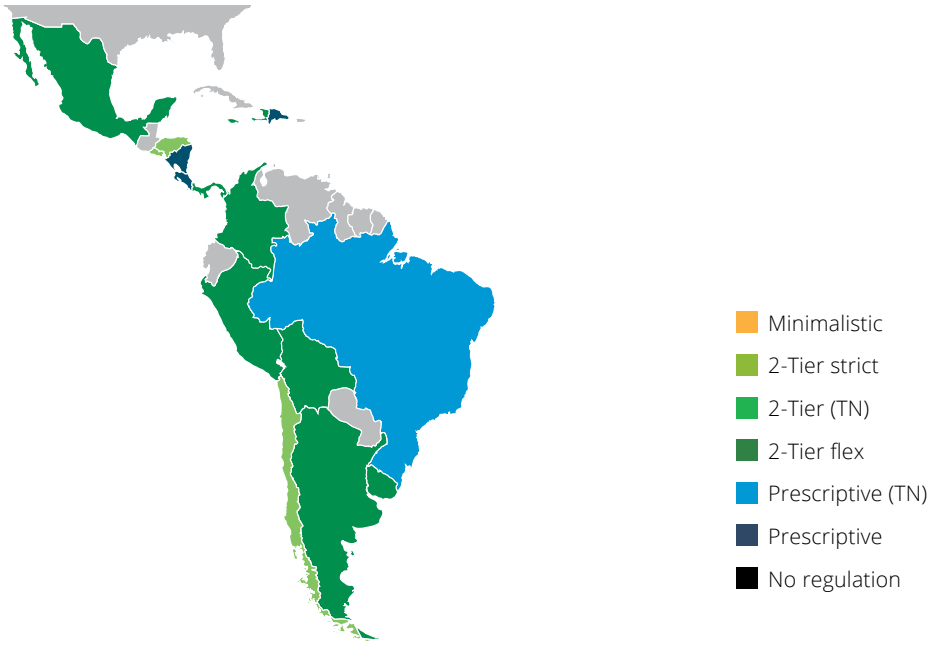
Concluding legally binding contracts remotely relies heavily on the ability to securely and reliably document the parties' agreement. Digital identities, which consist of electronically captured and stored attributes that uniquely describe a person in a given context, facilitate electronic transactions by verifying real-life identities online (World Bank, 2016).

E-signature regulations are a crucial tool for cross-border transactions. These regulations guarantee the authenticity and integrity of digital signatures, allowing parties to conclude or amend contracts remotely. They are also necessary for processing imports and exports of goods at the border, as they allow economic operators to present documents remotely and securely.

38 ICC, MLETR Tracker: Cross-Border Paperless Trade Database, https://www.digitalizetrade.org/mletr.

Most LAC countries operate a two-tiered regime for e-signatures that aligns with modern standards. This approach, adopted in Mexico and all Andean and Southern Cone countries except Brazil, recognizes simple (i.e., nonsecure) electronic signatures, such as a checkbox in a written email, as well as secure digital signatures, which have the same status as written signatures. Most countries with a two-tier system have adopted a flexible regime ("2-tier flex") that allows digital signatures to be issued by public or private bodies. This makes it easier for businesses to adopt and use e-signatures in different contexts (figure 2.8). Some countries take a "technology-neutral" approach: that is, a signature model that provides actors with the flexibility to choose the technological solution that best meets the requirements of that signature.

**FIGURE 2.8. Types of e-signatures in LAC**




Source: World Bank (2025a).

E-signatures vary across Central American and Caribbean countries. The prescriptive approach admits only secure digital signatures, limiting available options (figure 2.8) and making it less flexible and more challenging for businesses to implement. The range of approaches across Central American and Caribbean countries limits mutual recognition or other forms of collaboration, thereby disincentivizing the use of electronic signatures for cross-border contracts and increasing transaction costs.[39]

39 "Minimalist" e-signature approaches allow parties to determine the signature features, which often spurs broad adoption but does not guarantee legitimacy. These approaches are not used in LAC.

Anecdotal evidence suggests that, regardless of the specific e-signature model, effective implementation of these regulations is often lacking, limiting the actual use of digital signatures in the region. This includes failure to appoint bodies that may issue digital signatures or to implement a framework that focuses on the use of e-signatures in government services.

## Trust-building regulations

### 1. Online consumer protection

Rules governing online consumer protection are crucial for addressing information asymmetries between vendors and consumers. Online consumer protection laws aim to ensure the same level of protection as for offline commerce (UNCTAD, 2017). These laws build on traditional consumer protection principles and mechanisms, extending and adapting them to digital markets to mitigate the challenges of online buying and selling (OECD, 2000). They are particularly significant for international digital trade, where consumer trust is often lower.

Most LAC countries have adopted explicit regulations on online consumer protection, reflecting their participation in RTAs that include e-commerce provisions (see the section on RTAs in chapter 3) (World Bank, 2025a). This is not the case in the Andean countries covered in the DTRR analysis, where only Colombia has specific rules for online transactions. In Central America and the Caribbean, rules on online consumer protection vary widely, even among neighboring countries. The Southern Cone countries have some degree of harmonization in online consumer protection, and all of them have relatively advanced frameworks.

Despite significant progress, some online safeguards are absent or have only been partially implemented in the region. For instance, protections against spam have been adopted by only four countries or fewer. Rules prohibiting "dark patterns" (i.e., making it harder to reject an offer than to accept it, such as allowing a single click to share personal data but requiring multiple clicks to protect it) are absent in LAC (World Bank, 2025a).

### 2. Data protection and cybersecurity

Safeguards for personal data and cybersecurity rules aim to ensure that individuals and businesses can safely engage in digital activities in the knowledge that their personal information is protected, used and shared only for its intended purpose, and that measures are in place to prevent and respond to cyber threats such as hacking, phishing, and other forms of cybercrime, which can undermine trust in digital systems.

Most LAC countries have adopted robust data protection rules. More specifically, with the exception of Bolivia, El Salvador, Haiti, and Honduras, the LAC countries covered by the DTRR have introduced data protection regimes that ensure personal data is handled responsibly and that mechanisms are in place to address data breaches and misuse.

However, despite this progress on data protection, the development and enforcement of cybersecurity regulations for personal data are less advanced and show greater variation across LAC as well as within its subregions (figure 2.9).

## Platform regulation

### 1. Cross-border data regimes[40]

Establishing a coherent framework that aligns with international standards is crucial for protecting personal data while also enabling the seamless flow of information needed for digital growth in the region.

Within LAC, regulations for cross-border data transfers vary widely. Thus, for example, Brazil, Colombia, Peru, Argentina, Uruguay, Costa Rica, and Panama have adopted a conditional framework for cross-border data transfers based on the adequacy of safeguards, thus allowing data to be transferred to countries that feature protections for personal data substantially equivalent to the those of the "home" country (usually called an "adequacy" approach). By contrast, the Dominican Republic requires the data subject to provide explicit consent for data transfers. Mexico is the only country in the sample that follows an "accountability" approach, in which no specific conditions are laid out for data transfers, but they are allowed based on the assessment of, and eventual liability for, the firms controlling such data (World Bank, 2021). Finally, while no cross-border data rules are in force in Chile and Bolivia, general rules may apply, while Honduras has no cross-border data rules at all (World Bank, 2025a).

All LAC countries in the sample share an important good practice: none impose broad, discretionary requirements for prior government approval of cross-border data transfers (World Bank, 2025a). They tend to prioritize facilitating data sharing for business purposes over government control (World Bank, 2021), thereby favoring digital trade as a channel for integration with global markets.

40 While cross-border regulatory regimes cover more than platform governance, they are particularly sensitive to data regulation as their global intermediation business model depends on the ability to transfer data across borders. Cross-border regulatory regimes thus fall under the Platform Regulation pillar of DTRR.

### 2. Data localization requirements[41]

As the global economy has become more reliant on digital trade, data storage has become increasingly important. Data localization requirements mandate that data be stored, processed, and/or accessed within a country's borders. They are often adopted to facilitate regulatory monitoring and ensure national security. However, such measures can reduce the efficiency of digital trade by increasing operational costs, hindering the seamless flow of international data, and adding complexity for businesses that must comply with local data storage mandates.

Data localization requirements in LAC countries are limited. Chile, El Salvador, and Honduras have adopted local storage requirements for financial data, while Brazil and Panama maintain data storage requirements for national security-related data. Brazil extends this requirement to both data processing and data access (OECD and WTO, 2025).

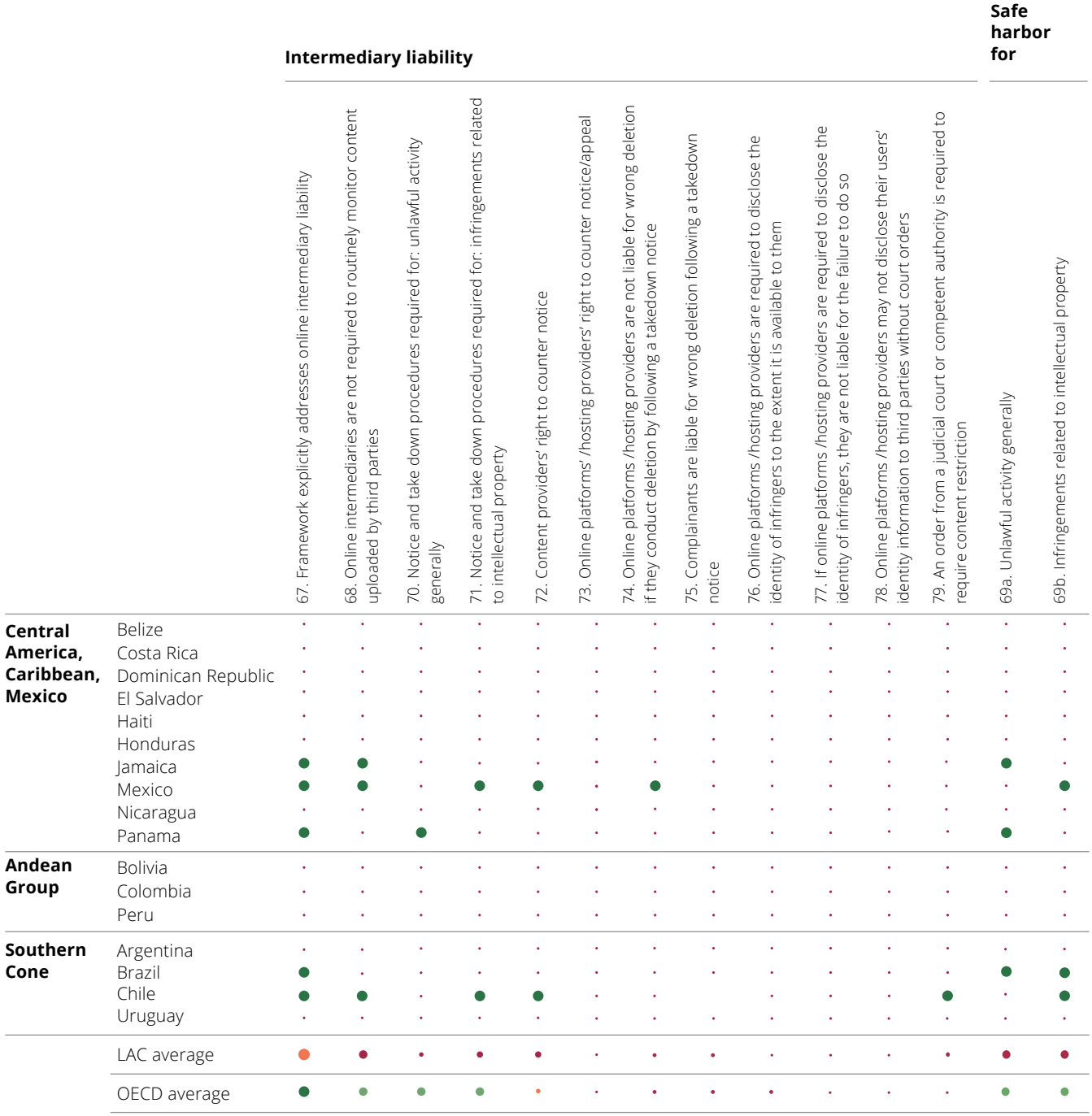
### 3. Intermediary liability

Building trust in the digital space requires taking action against illegal content. This includes content relating to civil or criminal offenses, such as a defamatory post or the uploading of racist videos, as well as intellectual property violations, such as uploading bootlegged videos or music or offering counterfeit products for sale. Intermediary liability rules determine the extent to which online platforms are responsible for user-posted content and how they should handle it. A balanced regime that exempts platforms from liability when taking adequate measures to ensure the lawfulness and legitimacy of their content reduces costs for online platforms and firms operating on them, helping to build greater trust in online markets.

Only five LAC countries have rules on intermediary liability: Jamaica, Mexico, Panama, Brazil, and Chile. In line with good practices, these provisions limit the liability of intermediary platforms by requiring them to follow procedures for removing offending content, known as safe harbor provisions. Thus, in the areas where LAC countries have adopted regulations, they generally match or exceed the OECD average. However, because intermediary liability frameworks in LAC are limited in scope and only offer partial remedies, the region's overall performance remains well below the OECD average (figure 2.9). Overall, the lack of comprehensive rules addressing issues such as counterfeit goods, fraudulent activities, and other illegal content might potentially diminish consumer confidence in online marketplaces in LAC countries.

41 Data localization refers to statutory requirements to store, process, or access data only within the jurisdiction of the country concerned. Restrictions on cross-border data flows also include mandates requiring government authorization before data is transferred internationally. See OECD and WTO (2025).

## FIGURE 2.9. Intermediary liability requirements in LAC countries




Note: For individual countries, bubbles indicate whether regulatory measures exist in the relevant category. Green represents positive regulatory measures, and red indicates regulatory restrictions on digital trade.

Source: World Bank (2025a).

## Institutions and enforcement of digital trade regulations

A properly functioning regulatory framework for digital trade requires effective institutions to implement laws and regulations, foster compliance, and enforce them when they are not followed. To establish whether and to what extent this is the case requires careful assessment of existing institutions and the regulations they oversee that affect digital trade. One such evaluation is provided by the World Bank's Global Regulations, Institutional Development, and Market Authorities Perspective (GRIDMAP) Toolkit. It focuses on consumer protection and data governance and covers domestic institutions and regulations governing traditional and digital trade.[42] GRIDMAP identifies a minimum set of institutional arrangements, regulations, and practices intended to serve as benchmarks for creating reliable, safe, competitive markets (World Bank, 2024a and 2024b).

In the context of consumer protection, consumer protection authorities (CPAs) need adequate powers, resources, and intervention tools to encourage compliance, implement regulatory frameworks, and ultimately enforce them to stop unlawful business conduct. According to the GRIDMAP assessment, on average, LAC countries have established the basic institutional arrangements required to implement their consumer protection frameworks (discussed above), but there is significant scope for improvement, particularly in addressing complaints, conducting investigations, and resolving disputes. There are also gaps in implementation: no data are available on consumer education and awareness campaigns or on CPAs' activities, including the number of complaints received and investigated and the sanctions imposed. There is a need to improve frameworks for self- and co-regulation mechanisms, including engaging stakeholders in developing regulations.[43]

Data protection authorities (DPAs) play a key role in implementing data governance. On average, according to the GRIDMAP assessment, LAC countries' institutional arrangements for data governance are significantly better than the global average. Most DPAs in the region have a wide variety of roles and powers to promote and ensure compliance with legal, regulatory, and policy frameworks. However, LAC's implementation and enforcement scores are below the global average. Some 30% of DPAs in the region lack

42 The two GRIDMAP modules described in this chapter cover the following DTRR regulatory areas described in the previous section: (1) consumer protection, and (2) data governance, including intermediary liability, data protection, cross-border data flows, cybersecurity, and data localization. Two types of authorities tend to have jurisdiction over these: consumer protection authorities for consumer protection and part of intermediary liability, and data protection authorities for data protection, cross-border data flows, and data localization. In some countries, jurisdiction is distributed among several authorities. In LAC, the GRIDMAP sample includes the following countries for consumer protection: Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Panama, Paraguay, Peru, and Uruguay; and the following countries for data governance: Argentina, Brazil, Chile, Costa Rica, Colombia, Ecuador, Jamaica, Mexico, Panama, Peru, and Uruguay.

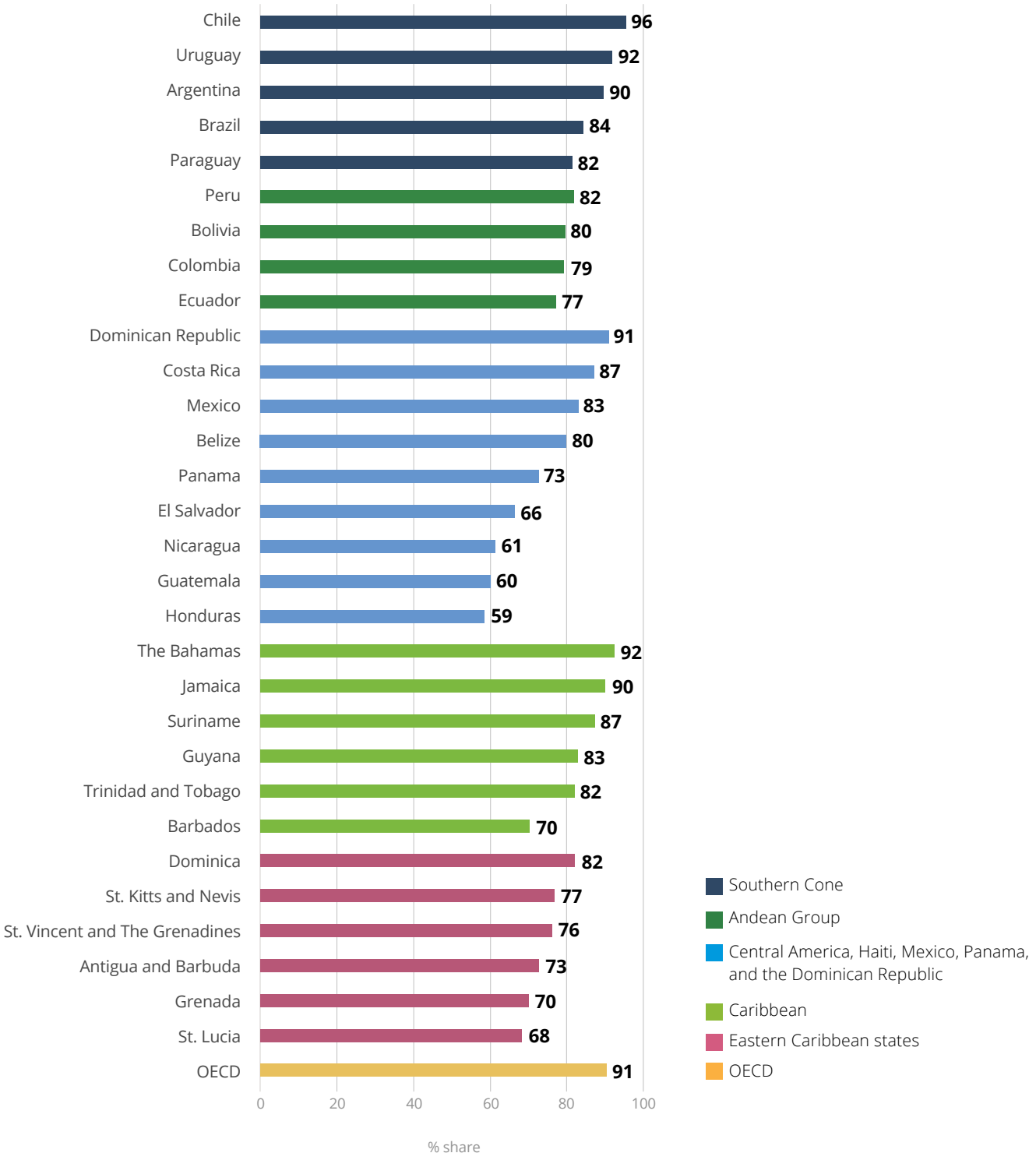
43 Self-regulation refers to voluntarily rules or codes of conduct developed by organizations such as private enterprises or professional groups to regulate or guide the behavior, actions, and standards within the group. Co-regulation involves the private sector creating or administering a regulatory framework in active collaboration with governments.

standardized procedures for at least some of the tasks they perform, while 20% have not used any of the persuasion tools or sanctions tracked in the GRIDMAP survey in the past 12 months. As with CPAs, there is a lack of publicly available information on the number of complaints received, investigated, and sanctioned, as well as on consumer education and awareness campaigns. Some 40% of LAC DPAs have no arrangements to cooperate with domestic or foreign authorities or regulators. Finally, none of the surveyed DPAs in LAC countries strongly agree or agree that their budget is sufficient, compared with 29% of DPAs in Europe and Central Asia and 21% in Africa.

## Digital infrastructure and connectivity

Digital connectivity is the backbone of digital trade. While the number of internet users is growing rapidly, LAC countries still exhibit gaps in internet coverage and usage. As of 2024, the share of the population using the internet exceeded 90% in Chile, Uruguay, Dominican Republic, The Bahamas, and Jamaica. Internet usage was below 80% in most Andean countries, most Central American countries, and many Caribbean countries (particularly in the Eastern Caribbean) (figure 2.10).

## FIGURE 2.10. Percentage of population using the internet in LAC countries, 2024 (% share)




Source: ITU (2025a).

This section provides a snapshot of where LAC countries stand on digital connectivity, including data transmission infrastructure (optical fiber networks and antennae), mobile networks, and data centers.

Fixed and mobile telecom networks provide the essential infrastructure for voice and data services and internet access. High-speed broadband connections facilitate interactions between firms and consumers, notably across borders, and support digital trade.

The evidence suggests that improving LAC's broadband connectivity would reduce the cost of trade in goods and business and professional services across the region (see box 2.2 on trade cost simulations).

## Fixed networks

Fixed broadband can be delivered via various technologies, including digital subscriber line (DSL), cable, satellite, and fiber-optic. Fiber-optic and cable connections are the most suitable for modern digital applications and trade for multiple reasons. Fiber-optic is the fastest of these technologies and can transmit data with high capacity and minimal delay. Cable also offers faster speeds, lower latency,[44] and greater reliability than DSL. Unlike DSL, both fiber and cable are scalable for evolving online services because they can handle high data traffic volumes.

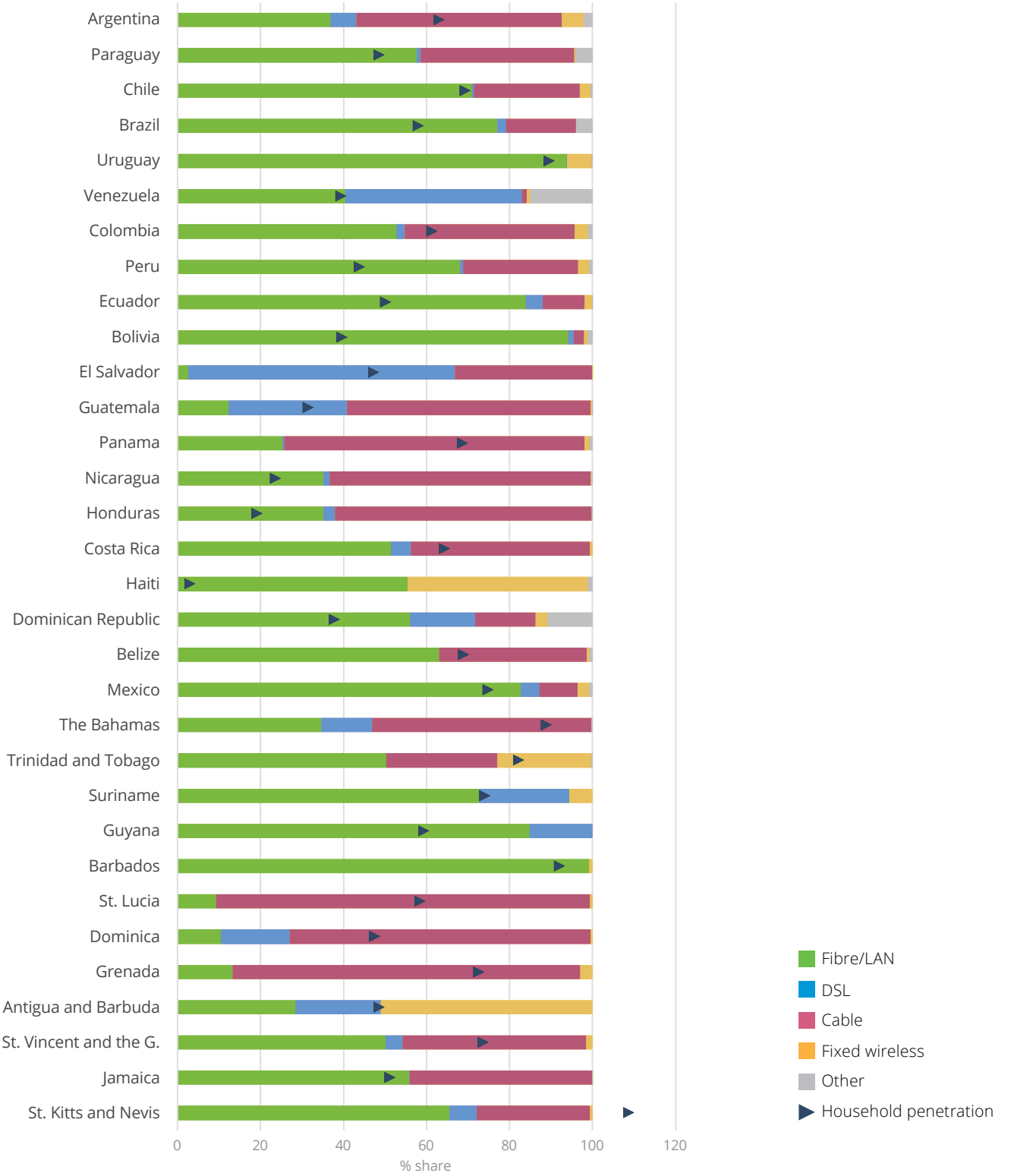
The development and quality of these networks vary significantly across LAC countries, with urban areas generally having access to more advanced technologies. Broadband penetration exceeds 80% in St. Kitts and Nevis,[45] Barbados, The Bahamas, Trinidad and Tobago, and Uruguay. Barbados and Uruguay also top the ranking for high-speed fiber-optic connections.[46] Mexico, Suriname, St. Vincent and the Grenadines, Grenada, Chile, Belize, and Panama show 70% to 75% coverage, though the share of high-quality connections varies. In contrast, Haiti, Honduras, Nicaragua, and Guatemala have both low coverage and limited access to faster technologies. Some countries—like Grenada, St. Kitts and Nevis, and Panama—have broad coverage but rely more on lower-quality networks, while others—including Bolivia, Haiti, and Ecuador—have better technologies but low overall household access.

44 Latency is the time it takes for data to travel between a source and a destination, measured in milliseconds.

45 In St. Kitts and Nevis, household penetration is higher than 100%—in other words, there are more fixed broadband lines than households. This implies that a household can have more than one subscription, such as when people use separate lines for personal or work purposes or when there is more than one family in a household.

46 In figure 2.2, fiber/LAN refers to local-area networks using fiber-optic cabling to connect devices within a limited geographic area, such as a building or office.

**FIGURE 2.11. Fixed broadband household penetration and distribution of technologies in LAC countries, 2024 (% shares)**




Sources: TeleGeography Data Navigator (https://datanavigator.telegeography.com/dashboard).

The cost of fixed internet access as a percentage of per capita gross national income (GNI) has decreased in recent years, but significant disparities persist across LAC. Haiti had one of the highest fixed broadband prices in 2024 (38% of per capita GNI), followed by Argentina (14%) and Honduras (11%),[47] while Mexico and Guyana have the most affordable prices (under 2%) (ITU, 2025c).

## Mobile networks

Higher-speed, more reliable mobile connectivity allows firms to engage in real-time communication, connect to supply chains, reach customers more efficiently, and enable customers to have better access to online platforms, mobile banking services, including digital payments, and many other digitally delivered services. In particular, in countries where fixed networks are underdeveloped, mobile networks are a vital enabler of digital trade that provide more accessible and affordable internet options.

The share of the population covered by 4G networks and mobile subscriptions is steadily increasing, but significant gaps remain. In nearly all LAC countries, over 90% of the population was covered by 4G networks in 2024. This translated into relatively high mobile subscription coverage, with unique mobile subscribers reaching 70% or more of the population in Chile (70%), Uruguay (74%), and Costa Rica (79%). Most other countries in the region were in the 50%–68% range.[48] 5G—which can facilitate further expansion of digital trade thanks to its lower latency, higher bandwidth, and capacity for real-time data exchange—is still in its early stages of development in many countries. The Dominican Republic is the only country where more than 70% of the population is covered by such technology.[49]

Mobile data package prices vary significantly across LAC countries. Haiti had the highest prices for mobile data and voice high-consumption baskets, at 21% of per capita GNI, followed by Honduras at 10%. The lowest prices were observed in Brazil, Chile, Costa Rica, and Mexico, all below 1%.[50]

47 The mobile-data "high-consumption basket" is the cheapest plan offering at least 5GB of monthly high-speed data (256Kbit/s or higher) from the operator with the largest market share in each economy.

48 The following countries were below the 50% range: Guatemala (47%), Dominica (47%), Jamaica (45%), Grenada (40%), and Haiti (27%).

49 The data refer to unique mobile internet subscribers at the end of the period, expressed as a percentage share of the total market population (GSMA, 2025).

50 The mobile usage basket assumes a monthly minimum of 140 voice minutes, 70 SMSs, and 2GB of data using at least 3G technology (ITU, 2025c).

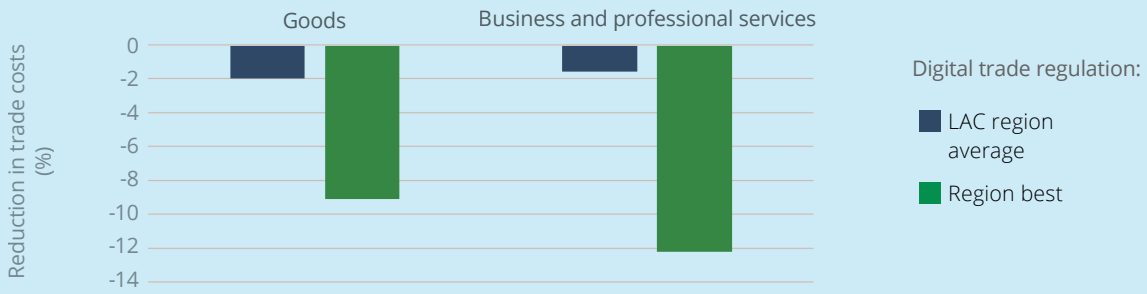
## BOX 2.2. The impact of digital infrastructure and regulation on trade costs in Latin America and the Caribbean

Improving LAC's digital infrastructure and regulatory environment will increase trade by reducing the costs associated with cross-border business.

- Digital technologies reduce the importance of physical proximity and face-to-face interaction for business relationships.
- Access to the internet, e-commerce platforms, and electronic payments reduces transaction and information costs for cross-border commerce.
- When services can be delivered digitally, their cross-border tradability increases.
- Digital technologies facilitate trade in goods through enhanced logistics, tracking systems, and automated port and airport activities, as well as customs efficiency, resulting in shorter transit times and lower costs for administrative and regulatory compliance.

Estimates based on the WTO Trade Cost Index, which captures all impediments that make international trade more difficult or more costly than domestic trade, show that improving digital connectivity reduces trade costs for both goods and services (Bellucci et al., 2025). This is especially true for digitally delivered services, such as business and professional services.

### FIGURE E. Estimated average reduction in trade costs in LAC (%)




Note: The figure shows the estimated average reduction in trade costs in LAC under a scenario in which all countries improve their mobile broadband access to at least the 75th percentile of the global distribution. The two columns show estimates under different digital trade regulation regimes.

Source: WTO calculations based on Bellucci et al. (2025).

Importantly, the reduction in costs is magnified in an open regulatory environment. If all countries in the region improved their mobile broadband connectivity to at least the 75th percentile of the global distribution, trade costs would fall by 2% for the average LAC economy. If all countries in the region improved their digital trade regulations to the same level as the best-performing countries (Costa Rica, Dominican Republic, and Ecuador), trade costs would fall by 9% for goods and 12% for business and professional services (figure E).

Source: Bellucci et al. (2025).

## Data centers

Data centers are the core infrastructure for storing, processing, and transmitting the data generated by digital economic activitie. They house the infrastructure and servers that enable businesses to offer and access cloud-based services, manage inventories, maintain customer data, and process payments—all essential elements for digital trade. By ensuring fast, reliable data and secure access to it, data centers help businesses reduce latency, enhance customer experience, and expand their reach to international markets.

Countries do not need to set up domestic data centers to engage in digital trade. With an appropriate regulatory environment that facilitates cross-border data flows, firms can access remote data storage and computing facilities.[51] However, the presence of data centers in a country can be seen as a proxy for a dynamic digital environment, as this type of infrastructure requires reliable connectivity and advanced digital skills.

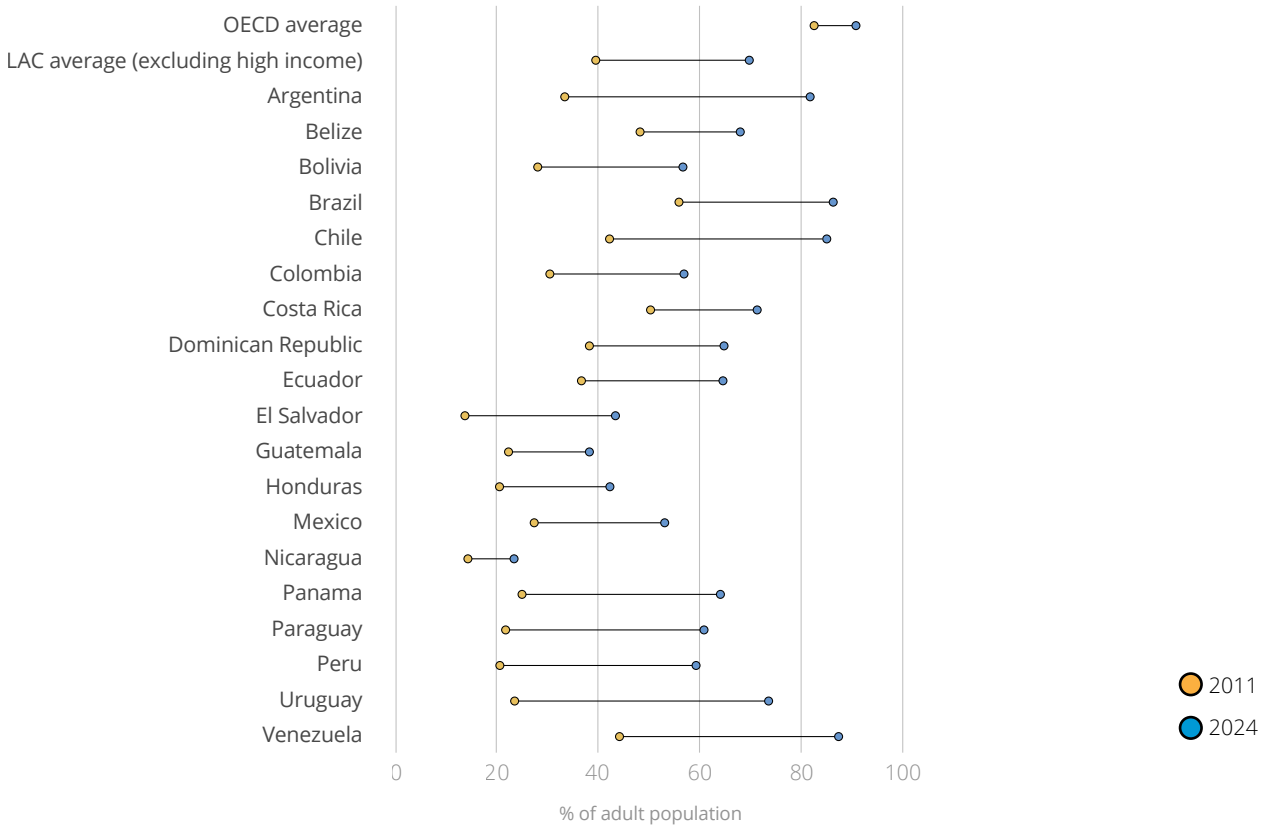
Data centers face several challenges in LAC countries, including regulatory complexities, connectivity issues, and energy concerns. These affect their development and operations and might impact their ability to support the region's growing digital economy and trade. The number of data centers in the region varies by country and broadly reflects the relative maturity of each country's economy. Brazil hosts the most data centers (152), followed by Chile (52) and Mexico (47), while most LAC countries have fewer than 10 (TeleGeography, 2025). These numbers are significantly below the world leaders: the United States (5,381), Germany (521), Great Britain (514), China (449), Canada (336), France (315), Australia (307), the Netherlands (297), Russia (251), and Japan (219) (Fleck, 2025).

51 While data centers can provide advantages for digital trade, whether every country should build them depends on several factors including economic scale, resources, and strategic priorities.

# Digital payments, including cross-border payments

Digital payments are crucial for remote transactions that support digital trade. As of 2024, 70% of adults (aged 15+) in LAC (excluding high-income countries) had a transaction account, a significant increase from a decade ago (figure 2.12). Moreover, 59% of adults made or received a digital payment in 2024. Rates of uptake and use of digital payments for online purchases vary widely across the region. In Guatemala, only 1% of adults reported making an online merchant payment in 2024, compared to 40% in Brazil.[52] As for businesses, according to Enterprise Surveys, an average of 69% of formal firms' payments in LAC are made electronically, with little variation across firm size or sector. This share is above the global average of 59%, and, compared to other regions, below only Europe and Central Asia (85.6%) and North America (74.2%).

**FIGURE 2.12. Adults in LAC with a transaction account, 2011–2024 (%)**




Source: World Bank, Global Findex Database.

52 World Bank, Global Findex Database 2025, https://www.worldbank.org/en/publication/globalfindex.

The introduction of fast payment systems (FPS)[53] across more than a dozen LAC jurisdictions (such as SINPE Movil in Costa Rica and Transferencias 3.0 in Argentina) has substantially improved the speed, convenience, and affordability of digital payments, but person-to-business (P2B) use cases for FPS remain underdeveloped, except for Pix in Brazil (World Bank, 2025c). Box 2.3 focuses on regional FPS in Central America.

### BOX 2.3. Strengthening subregional cross-border payment infrastructure in Central America

The *Sistema de Interconexión de Pagos* (SIPA) is a subregional payment infrastructure for Central America established in 2011. It is hosted by the Dominican Republic, and participants include the central banks of Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua. Despite more than a decade of continuous operations, SIPA has not yet achieved its full potential. Recent developments have shown that appropriate national-level payment policies and infrastructure reforms can have a significant impact on the system's adoption. During its initial decade of operations, SIPA transactions grew at a moderate pace, held back by a lack of participant diversity, insufficient automation, poor user experience, and limited promotions. From its launch in 2012 to 2022, SIPA processed approximately 38,000 transactions for a total value of US$1.4 billion. By comparison, in 2024 alone, SIPA registered almost 43,000 transactions. This shift coincided with the launch of Transfer365 CA-RD in El Salvador, a payment solution for regional cross-border payments to/from El Salvador that leverages SIPA as its technical platform. El Salvador's RTGS upgrade and a new set of rules and regulations issued by the central bank facilitated these developments, which have the potential to unlock new use cases and further promote the use of SIPA for cross-border retail payments and international remittances.

There remains significant scope to further leverage SIPA to support regional economic integration and digital transformation. This includes reforms to its pricing and operational model, further alignment with domestic fast payment systems, improved promotion and branding, and expanded country participation.

Source: World Bank (2026).

53 Fast payments—also known as instant or immediate payments—involve real-time receipt of funds in the payee's account and around-the-clock service.

Coordinated efforts to enhance cross-border payments are critical to facilitating digital trade. When the payee's and payer's financial intermediaries operate under divergent regulations, or when financial data are not immediately interoperable between the entities involved, transactions become slow and costly, limiting opportunities to expand digital trade. Recent evidence suggests that progress has been made in ISO 20022 implementation and harmonization and the interlinking of FPS (Financial Stability Board, 2024).[54] In LAC, the FPS of Brazil (Pix) and Paraguay (SPI) use ISO 20022, while Peru's CCE also accommodates ISO 8583, given the limited market adoption of ISO 20022. While the cost of P2B payments decreased in LAC (from 3.3% to 2.7%), it remained relatively high, and only about 40% of B2B cross-border payments are completed within one business day.

Trade regimes in payment services are also important determinants of digital trade. According to the STRI for commercial banking services, which include payment services (figure 2.3.d), LAC countries are generally more open than the global average.[55] However, this openness is not always guaranteed multilaterally, as relatively few trade bindings exist for the sector in the WTO (figure 2.4).

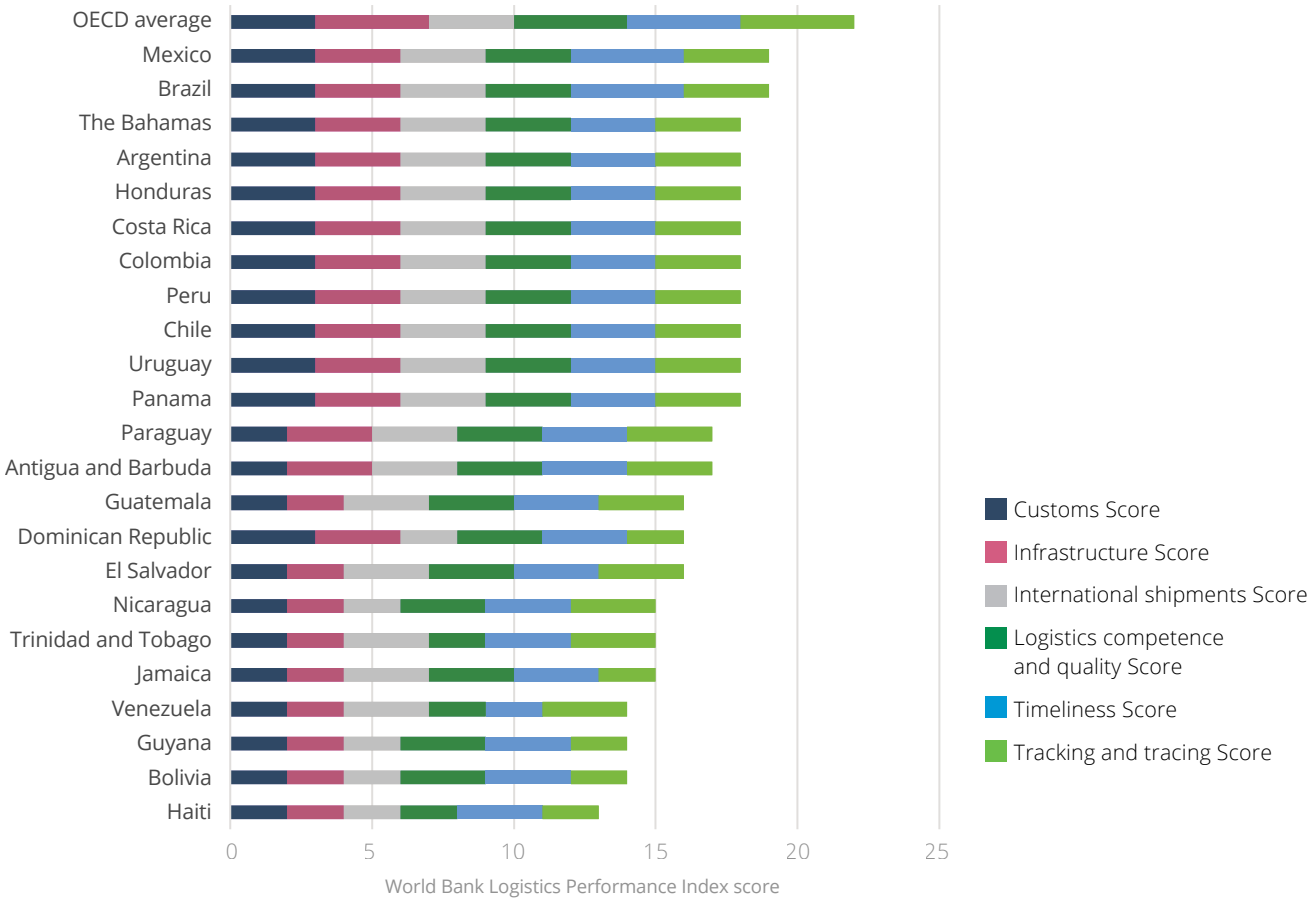
## Logistics, customs, and other border processes for e-commerce

Digitally ordered goods trade requires logistics, customs, and other border processes to support fast, just-in-time shipping. The quality of LAC logistics infrastructure and services still trails that of OECD nations in critical areas for digital sellers, such as transport infrastructure, ease of arranging competitively priced shipments, competence and quality of logistics services, and the ability to track and trace consignments (figure 2.13). Postal services in LAC, which firms rely on to ship parcels—the hallmark of B2C e-commerce—also show uneven performance in e-commerce-related metrics such as end-to-end delivery and traceability (Universal Postal Union, 2024). These long-standing gaps increase costs for online sellers and their customers (Mesquita Moreira and Stein, 2019, chapter 7).

54 ISO 20022 is an international standard for exchanging electronic messages between financial institutions. It has the potential to allow more consistent and structured data transfer during payment processing. To this end, the harmonization requirements of the Bank for International Settlements' Committee on Payments and Market Infrastructures provide payment system operators and participants in both the public and private sectors with guidance on how to implement ISO 20022 consistently, to help facilitate faster, cheaper, more accessible, and more transparent cross-border payments ("the G20 targets"). They set out specific data requirements for ISO 20022 messages to increase the efficiency of cross-border payments.

55 For the purpose of the STRI, the scope of commercial banking services includes most services supplied by banks, such as acceptance of deposits and other repayable funds from the public, lending of all types, financial leasing, guarantees and commitments, and payment and money transmission services.

**FIGURE 2.13. LAC countries' logistics performance scores**




Source: World Bank Logistics Performance Index.

An important issue in this regard is how open the trade regime is and to what extent it facilitates and promotes firm entry in the freight transport, postal, and courier services sectors. More open regimes tend to promote stronger competition and lower prices for these services, thereby favoring the expansion of digital trade in goods. As the STRI for these sectors indicates (figures 2.3.b and 2.3.c), the applied trade regime in LAC is comparatively open, although there are significant variations at the country level. Still, this access is not fully secure because LAC countries have undertaken few WTO commitments in these sectors, leaving scope for trade-restrictive policy changes (figures 2.4a and b).

Other key factors affecting digital trade in goods are the design of administrative procedures established by customs and other relevant border agencies (e.g., sanitary and phytosanitary agencies), along with the means available to firms to complete them and thus comply with applicable regulations. They determine

how easy, fast, and predictable it is for shipments to cross borders, thereby significantly impacting a firm's ability to participate in and expand its activities in international markets (Volpe Martincus, 2016). Thus, long customs processing times negatively affect firms' exports, especially new sales to new foreign buyers (Volpe Martincus et al., 2015). Processing times and resulting costs specifically undermine smaller firms in time-sensitive supply chains as they seek to meet customer demands for low lead times (Carballo et al., 2025). Crucially, these challenges reverberate across the economy.

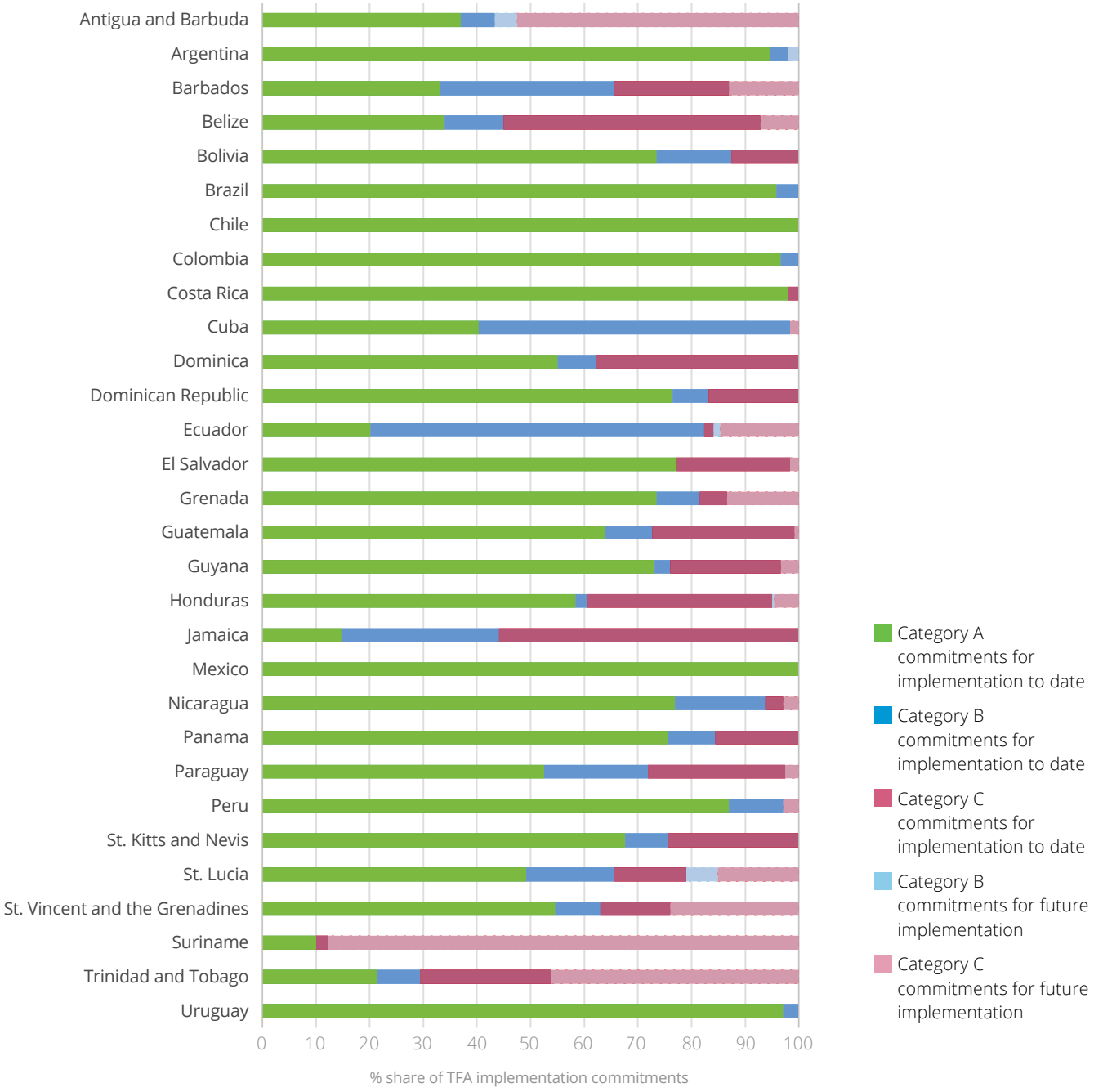
Countries in the region have implemented important trade facilitation initiatives that streamline and digitalize border procedures. These initiatives have had significant positive effects on international trade for firms and countries (Volpe Martincus, 2016).

More formally, most LAC countries have signed the WTO's Trade Facilitation Agreement (TFA), which contains provisions to expedite the movement, release, and clearance of goods, thereby benefiting digital trade activities that rely on quick delivery. All LAC WTO Members except Haiti and Suriname have ratified the agreement. For some countries, full implementation is already complete; for others, it is scheduled to be completed no later than 2038 (see table 2.2).[56] It is worth noting that developed countries had to implement the TFA by the time it entered into force (2017).

While figure 2.14 shows TFA implementation commitments as notified by WTO Members, other indicators measure and assess trade facilitation implementation through surveys or additional metrics. These efforts suggest that burdensome administrative border procedures, along with insufficient digitalization, may still constitute significant bottlenecks to LAC trade in goods, especially digitally ordered goods. For example, such indicators show that many Caribbean and Central American countries are still behind advanced economies in the digitalization of border processes, paperless trade, transparency of trade processes, and coordination among border agencies within and across LAC countries (figure 2.15).

56 Suriname has not yet ratified the TFA but has voluntarily submitted its category A and C commitments, as well as its indicative and definitive implementation dates for its category C commitments. As mentioned in its notification to the WTO (WTO document G/TFA/N/SUR/1), Suriname intends to implement the provisions of the TFA by 2030. Chile and Mexico implemented all measures in the TFA upon its entry into force. Haiti and Venezuela did not submit notifications of TFA implementation categories: whereas Haiti has yet to ratify the TFA, Venezuela committed to full implementation of the TFA upon ratification in 2024.

**FIGURE 2.14. LAC countries' current rate of implementation commitments of the WTO, TFA (%)**

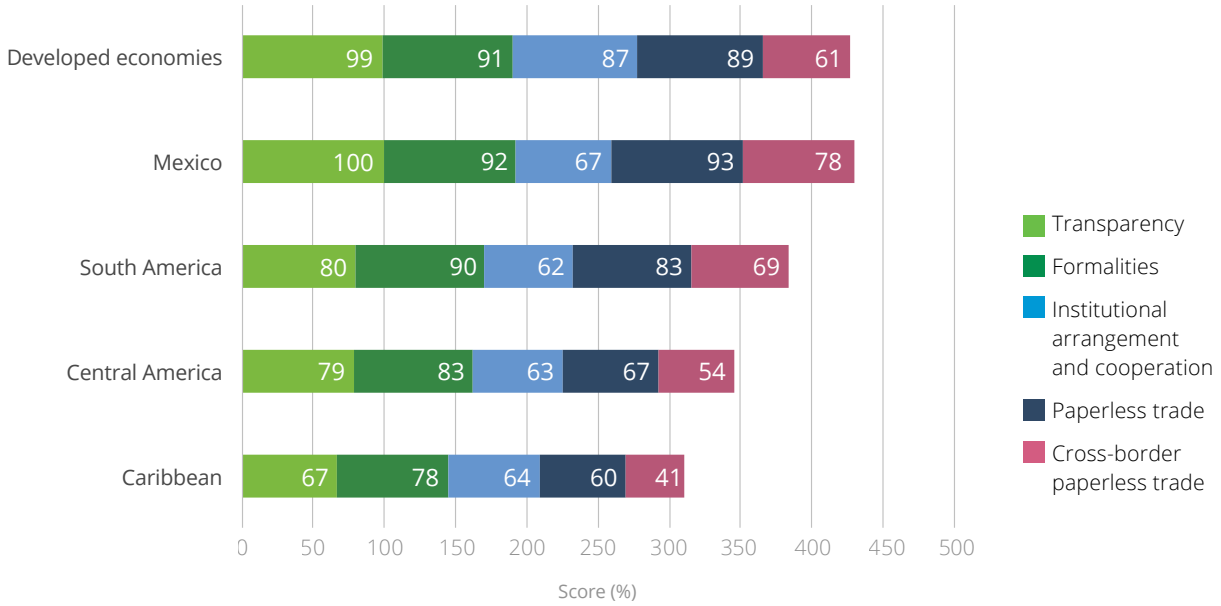



Source: World Trade Organization TFA Database (as of December 2025).

Notes: *Category A* refers to provisions that a Member committed to implement by the time the TFA entered into force on February 22, 2017, (or, in the case of a least-developed-country Member, within one year of entry into force on February 22, 2018). *Category B* refers to provisions that a Member has committed to implement after a transitional period following the TFA's entry into force. *Category C* refers to provisions that a Member has committed to implement after a transitional period following the TFA's entry into force and which require technical assistance and support for capacity building.

In line with the provisions of the TFA, developed Members are not eligible to benefit from the flexibilities to implement the Agreement contained in Section II (categories A, B, and C, described above). As a result, developed Members were to implement the entire TFA by the time it entered into force (i.e., by February 22, 2017).

**FIGURE 2.15. UN trade facilitation scores in LAC countries and developed economies, 2023 (composite score, maximum = 500%)**




Source: United Nations, UN Global Survey on Digital and Sustainable Trade Facilitation (https://www.untfsurvey.org/world).

These gaps are particularly important because trade in digitally delivered goods has increased the number and variety of shipments entering and leaving LAC. This expansion is placing additional pressure on the region's customs agencies to secure trade, detect customs fraud and other regulatory violations, and collect applicable duties, taxes, and fees.

## Information frictions and export promotion policies

Despite technological progress, information frictions continue to have a significant impact on exporting. Firms that trade across borders must search for information about prevailing demand and entry conditions in foreign markets, specifically to find and assess potential business partners and customers (Volpe Martincus, 2010).

Online platforms can reduce information barriers, thereby favoring firms' exports (Carballo et al., 2022). However, in the digital realm, firms must understand marketplaces and online channels to engage in digital trade, particularly to optimize their marketing and sales to cater to foreign customers (Suominen, 2021). Moreover, large numbers of participants in online markets can affect the functioning of existing mechanisms, making it difficult to find high-quality sellers (Bai et al., 2022).

Importantly, information gathered through proactive efforts tends to spill over to other firms, thereby indirectly benefiting them and potentially reducing the returns for first movers. Investments to acquire relevant business information are therefore generally suboptimal, leading to underexporting, both overall and by destination, product, and service (Volpe Martincus, 2010).

Unlike variable trade costs (such as tariffs or shipping), information-related barriers are largely fixed: firms must invest upfront in market research, compliance, and relationship-building before making their first sale abroad. These costs are particularly daunting when firms are first entering international markets, expanding to new destinations, or introducing new export products, or when they are small and less experienced firms and therefore lack the resources and networks of larger firms (Volpe Martincus and Carballo, 2008, 2010; Volpe Martincus et al., 2012; Lederman et al., 2016).

The evidence consistently suggests that, by reducing these fixed information costs, export promotion services in Latin America have been effective in helping firms to start exporting, increase the number of markets they serve and products they export, and to continue exporting (Volpe Martincus and Carballo, 2008, 2010, 2012; Cruz, 2014; Lederman et al., 2016).

When it comes to digital trade, export promotion agencies face new challenges, including the need to design and implement programs to help firms overcome the specific obstacles of this trade modality. Consistently, many agencies now also promote digital exports, assisting firms in selling through online platforms and supporting digital service providers in serving global buyers. Initiatives like the IDB's *ConnectAmericas* platform, which provides firms with capacity-building and matchmaking services, and partnerships with online marketplaces offer additional opportunities to scale access to international markets and overcome information asymmetries.

## Firms' capabilities and skills for digital trade

A country's digital exports can be driven by the capabilities of domestic firms and foreign firms operating in its territory, with the latter typically contributing with knowledge, skills, and technology from abroad.[57] All aspects are generally relevant for both digitally traded goods and services.

57 See chapter 1 for a discussion of the role of FDI in digital trade.

## Capabilities

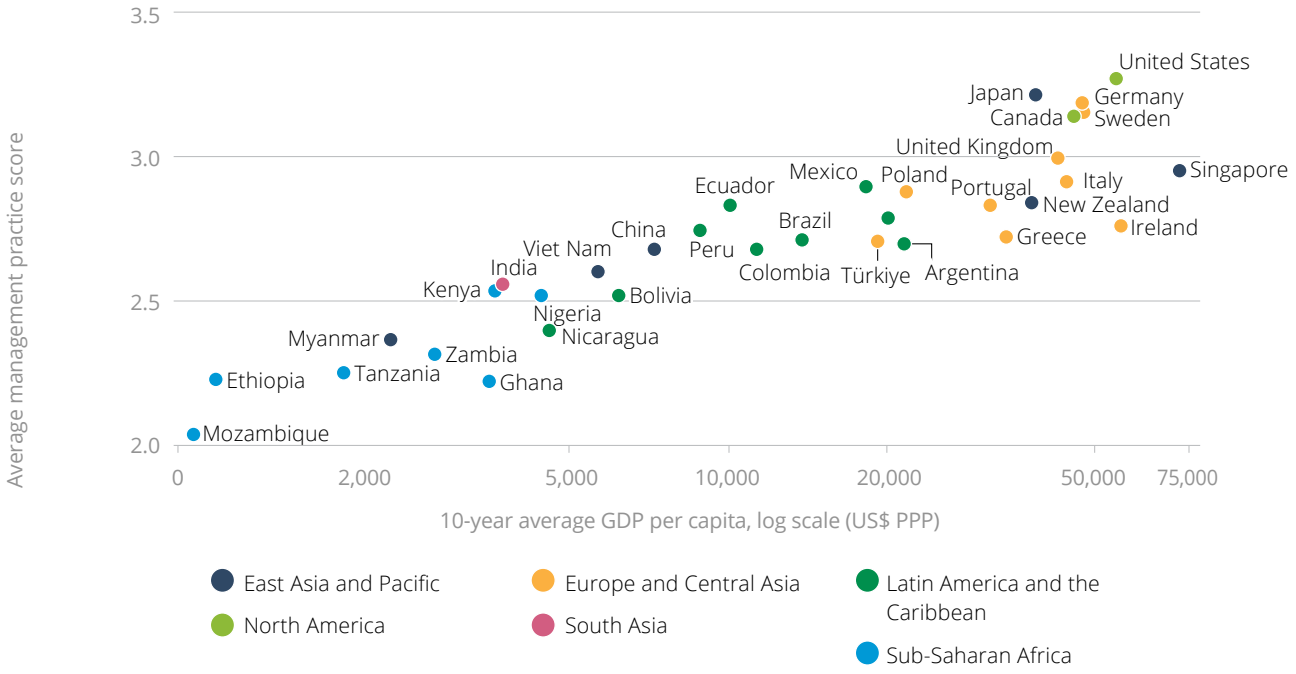
The LAC region lags in firm-level capabilities, which are a key determinant of its ability to innovate and participate in international trade. A country's technological absorption capacity depends on its level of basic, technical, managerial, and entrepreneurial capabilities, along with supporting nonmarket, knowledge-related institutions such as universities and public research entities. These enable firms to understand new technologies, evaluate their profitability relative to existing alternatives, finance and implement them over a long gestation period, and manage risk and potential failure (Cirera and Maloney, 2017; Maloney et al., 2025).

Within-firm capabilities are determined by human capital—both managerial practices and the technical skills of the workforce. In LAC, firms led by managers with a university degree who have studied abroad and/or have experience working at large companies or suppliers to global value chains tend to adopt and use more sophisticated technologies (Maloney et al., 2025). Better-educated managers are more able to identify knowledge, assess risk, employ higher-quality workers, and implement the management practices and organizational structures needed to adopt and use complex knowledge. Exposure to international technologies and managerial practices further enhances their ability to make informed decisions.[58]

Firms in LAC exhibit lower average management quality than would be predicted by their income levels (see figure 2.17). The World Management Survey has documented that developing country firms are lagging across a wide range of capabilities critical to growth. Among LAC countries included in the World Management Survey, only Mexico has management scores that exceed the level its per capita GDP would predict, while Argentina, Brazil, and Chile significantly underperform. On average, LAC firms perform well below frontier (leading global) firms on management aspects, including monitoring, the adoption of just-in-time processes, internal feedback mechanisms, long-term planning and goal stretching, and human resource policies. In general, LAC firms tend to use fewer of the structured management practices that are important for firm performance and for managing R&D projects (Bloom and Van Reenen, 2007).

58 The rise of the LAC unicorns (firms with revenues exceeding US$1 billion) reflects the emergence of high-quality entrepreneurs, but also the importance of international experience in their formation and global sources of venture capital, which are hard to replicate locally (Maloney et al., 2025).

**FIGURE 2.16. Managerial capabilities and income levels in LAC and globally, 2004–2022**

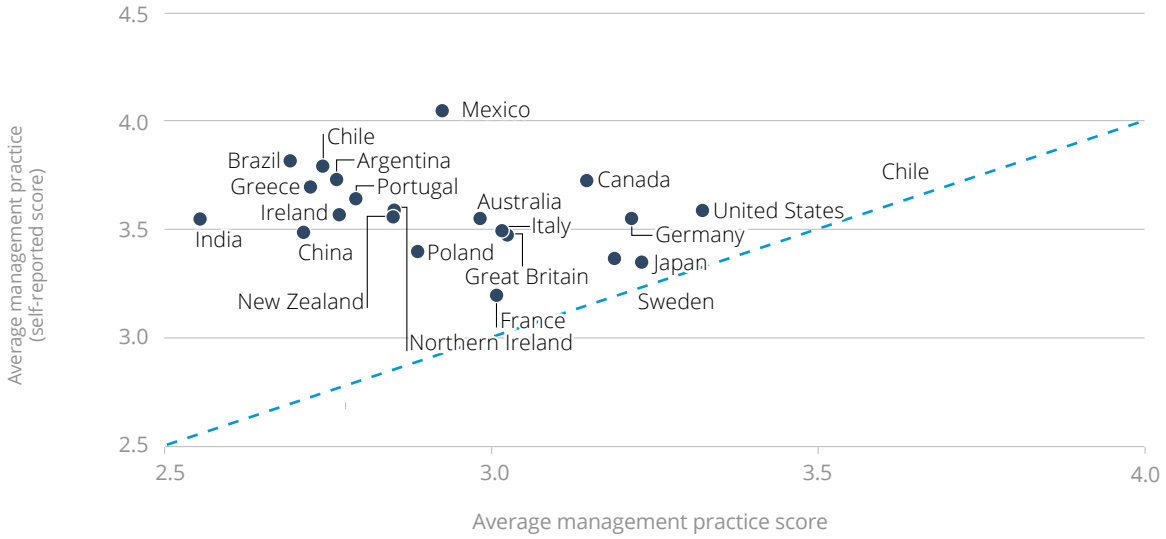



Sources: Maloney et al. (2025), modified from Bloom et al. (2014b), based on data from the World Management Survey (https://worldmanagementsurvey.org/) and the World Bank World Development Indicators (https://databank.worldbank.org/source/world-development-indicators).

Notes: The y-axis shows average country-level management scores across manufacturing firms; for each firm, an average score is computed across multiple management practices. Data years: 2004–2022; GDP per capita is the average for 2012–2021. PPP = purchasing power parity.

Evidence from around the world suggests that management skills can be taught to existing firms, with positive effects on firm performance that can be long-lasting (Bloom et al., 2020; Iacovone et al., 2022; Bianchi and Giorcelli, 2019; and Atkin et al., 2017). Why, then, does management quality remain relatively low? Evidence from the World Management Survey comparing managers' self-assessments of their firms' management practices with expert evaluations shows that LAC firms overestimate the quality of their management (figure 2.18). This gap suggests that a more proactive approach to helping firms improve their managerial capabilities may be warranted.

**FIGURE 2.17. Comparison of self-reported and externally evaluated management practices in LAC and global firms**




Source: Cirera and Maloney (2017), based on Bloom and Van Reenen (2007), using World Management Survey data.

Digital capabilities are also critical for participating in global value chains, where large businesses increasingly require suppliers to meet a range of digital, data management, and cybersecurity requirements.[59] Digital capabilities vary by firm size and sector. Around half of the firms in LAC countries included in the COVID-19 Enterprise Surveys reported starting or increasing online business activity since the pandemic.[60] Firms were more likely to start or expand online activity if they (i) operated in the service sector, which typically requires less investment and logistics; (ii) were medium-sized, and thus may have a sufficient capability base to support new business models or initiatives; and (iii) were foreign-owned, which can provide links to more distant markets and access to managerial capacity, business models, and technologies that facilitate digitalization.[61] The private sector can help build firms' digital capabilities. For

59 In a 2024 Nextrade Group survey of 250 Mexican and Costa Rican suppliers in the automotive, electronics, apparel, and food processing sectors, over 80% of firms that had diversified their customers by 10% or more in the past three years had also put in place data encryption, regular data audits, and cybersecurity practices, while over 70% had third-party risk management practices and traceability systems in place.

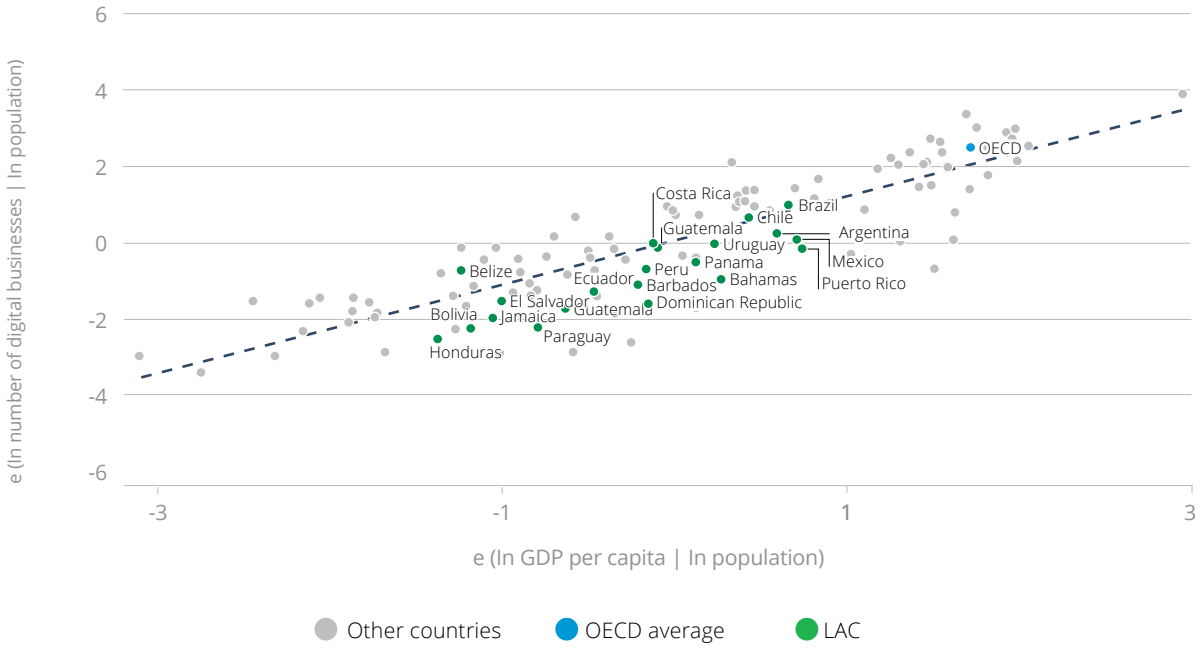
60 Enterprise Surveys COVID-19 Surveys (conducted in 2021 and 2022), https://www.enterprisesurveys.org.

61 Additionally, a survey of more than 2,000 Central American firms (IFC, 2021) found that a higher share of firms in services sectors—business process outsourcing and financial services—use digital technologies compared to firms in the more traditional export sectors like agriculture and light manufacturing. There is also large variation in technological sophistication and adoption within firms in the same sector, arguably because of heterogeneous costs and benefits of the different available technologies across business functions.

example, Mastercard's Center for Inclusive Growth operates the Strive Colombia initiative, which aims to digitally transform small businesses in the country. The program works with organizations like Fundación Capital and NYU's Financial Access Initiative to support more than 80,000 micro and small businesses in accessing new markets and developing digital sales channels. MercadoLibre also provides support to MSMEs entering online marketplaces.[62]

Regarding more advanced digital capabilities, LAC has fewer businesses operating in digital sectors than would be expected given its current level of economic development (Zhu et al. 2022). This not only affects firms that can engage directly in digital trade but also limits the ecosystem of digital businesses that enable other firms to digitize (figure 2.19).

**FIGURE 2.18. Number of digital businesses relative to GDP per capita in LAC, 2022–2024**




Note: N = 832,433.

Source: World Bank FCI Digital Business Database.

62 Colombia Mastercard Strive, "Boosting the resilience of small businesses and giving them more opportunities to grow and succeed," https://strivecommunity.org/country/colombia; MercadoLibre, "Iniciativa Impulso al emprendimiento femenino," https://sustentabilidadmercadolibre.com/iniciativas/impulso-al-emprendimiento-femenino.

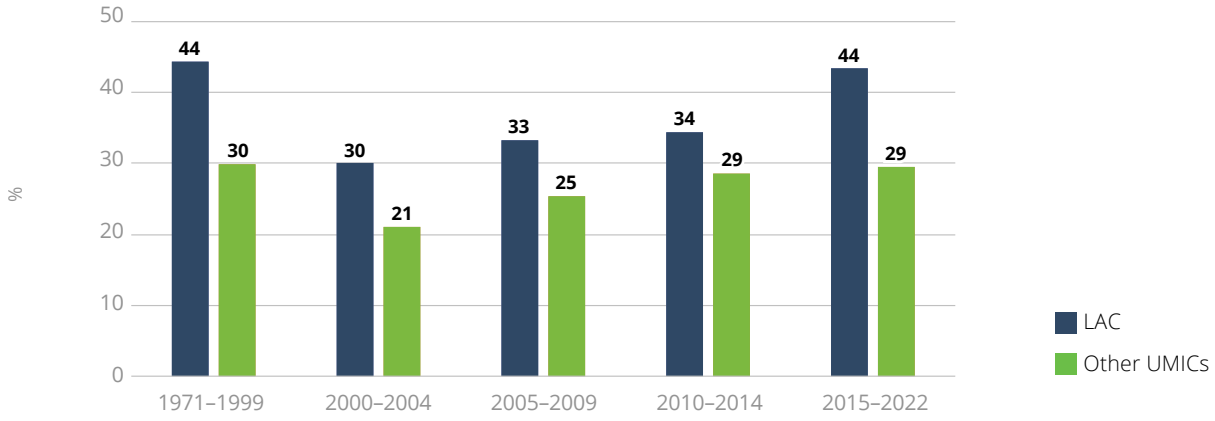
Digital firms are concentrated in the largest LAC economies: Brazil, Mexico, Argentina, Colombia, and Chile, which account for 85% of observations of digital businesses[63] and are the only countries in LAC with more than 1,000 digital businesses. The leading subsectors by number of observations of digital businesses are online sales, fintech, and marketing tech (around 12% each) and business management tech (just under 10%), followed by software as a service (SaaS) and web services (7%–9%), and the creative economy, including digital media and entertainment tech (9%). More advanced subsectors, such as big data analytics and artificial intelligence/machine learning (AI/ML), each represent around 4% of digital business observations.

Based on the number of firms that have received investment, LAC seems to be relatively successful in consumer-facing subsectors such as online distribution, fintech, and travel tech ("applied tech") but is falling behind in artificial intelligence, machine learning, and the Internet of Things ("deep tech") (figure 2.20). This pattern is consistent with the data on the number of digital businesses. Since 2000, a growing proportion of the world's applied tech companies receiving investment has been located in LAC: they accounted for over 40% in 2015–2022 and remain above the average for upper-middle-income countries (UMICs). While LAC as a whole led other UMICs in the number of funded deep tech businesses from 2000 to 2009, this advantage shifted during 2010–22, when other UMICs' deep tech sectors were becoming more developed (figure 2.20).

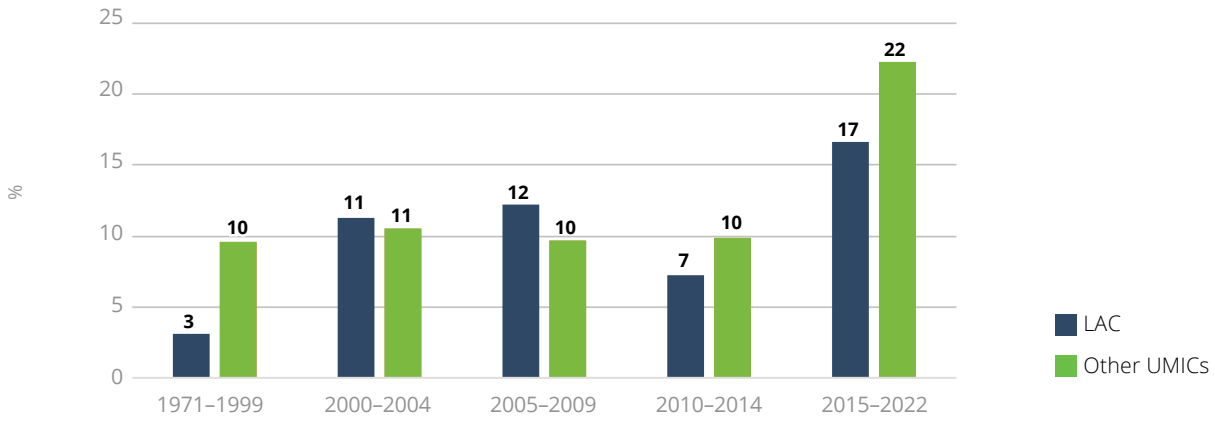
63 The World Bank's Digital Business Database defines digital businesses as businesses operating in digital sectors that have received equity investment that appears in international sources. It draws from four databases that capture investments made worldwide: CB Insights, Pitchbook, Crunchbase, and BriterBridges. CB Insights is a tech market intelligence platform that analyzes data on venture capital, startups, patents, and other data points to provide insights into private companies, investor activities, and emerging industry trends. PitchBook is a private capital market intelligence platform that provides data, research, and news on venture capital, private equity, and mergers and acquisitions, helping investors and other market participants make informed decisions. Crunchbase is a platform that provides business intelligence and insights on both public and private companies, focusing on investment, funding, leadership, mergers and acquisitions, and news, primarily serving entrepreneurs, investors, and market researchers. BriterBridges is a business intelligence and research platform focused on underserved and emerging markets. A firm may be in more than one sector. "Observations of digital businesses" counts each firm-sector pair as one observation, so if a firm is present in multiple sectors, it will have multiple observations.

**FIGURES 2.19. Funded businesses in applied tech and deep tech in LAC and UMICs, 1971–2022 (%)**

*Funded businesses in applied tech*




*Funded businesses in deep tech*




Source: World Bank Digital Businesses Database.

To understand the reasons behind LAC's relatively low participation in digital sectors, it is helpful to examine innovative activity in the region. At both the regional and individual country level, LAC invests less than advanced economies in innovation of all types (Maloney et al., 2025). LAC firms take less advantage of international partnerships and technology licensing than other regions. LAC countries do well in the adoption of relatively accessible and inexpensive technologies (such as ERP and CRM systems) but lag in advanced production technologies. Furthermore, after companies have adopted such technologies, there are also gaps in their productive use: while nearly 100% of firms in Brazil and Chile have internet access, only 50%–60% of firms have adopted advanced digital technologies, and only 23%–25% use them intensively (Maloney et al., 2025).

## Skills

Another challenge firms face is limited technical skills for the digital economy. Firms with staff who have technology-related degrees and/or a track record in tech companies are better positioned to adopt technologies and engage in digital trade than firms with staff who have not had prior exposure to these technologies. However, these skills are still scarce. In a survey of Central American firms, small, medium, and large firms stated that the lack of highly trained professionals in the country was the primary constraint on hiring workers able to leverage and build on new technologies (IFC, 2021). IT talent is the hardest to access and pay for; it has the highest turnover and the most in-demand profile among businesses in the sector (World Bank, 2023). Small firms may also be at a competitive disadvantage against large companies in accessing top talent.[64]

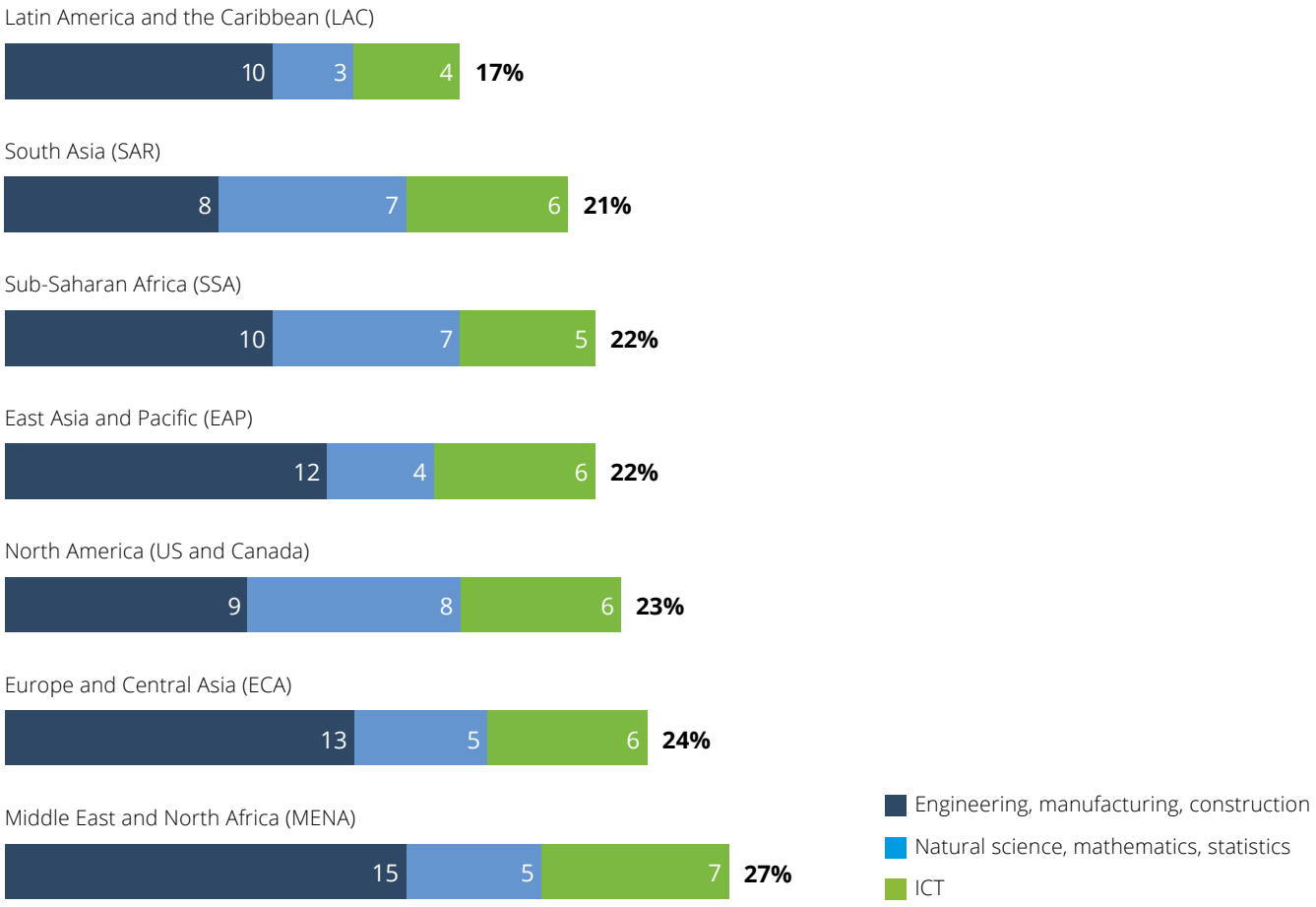
Surveys and recruiter reviews suggest strong demand for diverse occupations related to running a firm engaged in digital trade. The occupations and digital skills in demand in LAC include the following (Cuesta Partners, 2024):

- digital marketers using data analytics of customer segments and AI-driven methods to promote engagement and retention,
- data scientists who derive actionable information from data,
- operations managers who oversee specific areas of fulfillment and customer service,
- software engineers and back-end and front-end developers,
- content creators who develop engaging content,
- user experience and user interface experts who professionalize and develop appealing customer experiences,
- cybersecurity managers who identify and test against vulnerabilities and develop secure networks,
- cloud computing experts, including cloud infrastructure management, cloud-native applications, and knowledge of cloud platforms, and
- DevOps (continuous integration and continuous delivery pipelines to help teams test and deploy applications).

64 For example, in a World Bank Group survey, Guatemalan companies said they cannot compete for talent given the pay that larger companies offer to potential employees (IFC, 2021).

In addition to these technical skills, softer skills such as communication, collaboration, and problem-solving are required for the digital economy. Frameworks for assessing digital skills at the country level and for framing initiatives to increase such skills include the EU's DigComp 2.2 (updated in 2022) and UNESCO's expansion of it, which are used as benchmarks in several studies (Vuorikari et al., 2022). The DigiComp 2.2 framework examines information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving. UNESCO's Digital Literacy Global Framework builds on this and adds two skills: fundamentals of hardware and software, and career-related competencies.

**FIGURE 2.20. Share of STEM graduates among tertiary graduates, LAC and global regions, (%)**




Source: IDB (2021).

On the supply side of skills, the share of tertiary graduates in science, technology, engineering, and mathematics (STEM)—individuals well positioned to innovate and adopt technologies across different use cases—is low in most LAC economies compared to OECD countries and to economies at similar levels of development (figure 2.20).[65] Colombia, El Salvador, Mexico, and Trinidad and Tobago outperform some economies at the same level of development in producing STEM graduates. LAC outperforms only South Asia and North America in the broad engineering, manufacturing, and construction category.

At the other end of the spectrum, some countries lag in basic digital skills for both digital entrepreneurship and employment in digital-related jobs. As shown in the section on connectivity, in many LAC countries, fewer than 80% of households use the internet. On average, 6% of households in the region say they are not connected to the internet because they lack digital skills, with the highest rates (8%–9%) in Uruguay, Chile, Mexico, and Brazil. Given that these countries also have comparatively strong digital sectors (as discussed elsewhere in this report), these figures may point to inclusivity challenges: even in countries with strong overall digital economies, some segments of the population remain excluded (World Bank and UNDP, 2022).

Finally, supporting institutions such as universities and research institutions play a key role in the innovation ecosystem, particularly for STEM. Higher education contributes to innovation through three channels: first, it can develop skills by educating students and training professionals, managers, and technicians who will adopt or produce innovations. Second, it can produce new knowledge—the bedrock of innovation—through research. Third, it can exchange knowledge with industry to innovate and develop new products and production methods. These missions are accomplished when higher education institutions are closely connected to enterprises and employers to gauge demand for labor-market skills and knowledge in the business sector and to collaborate in producing them.

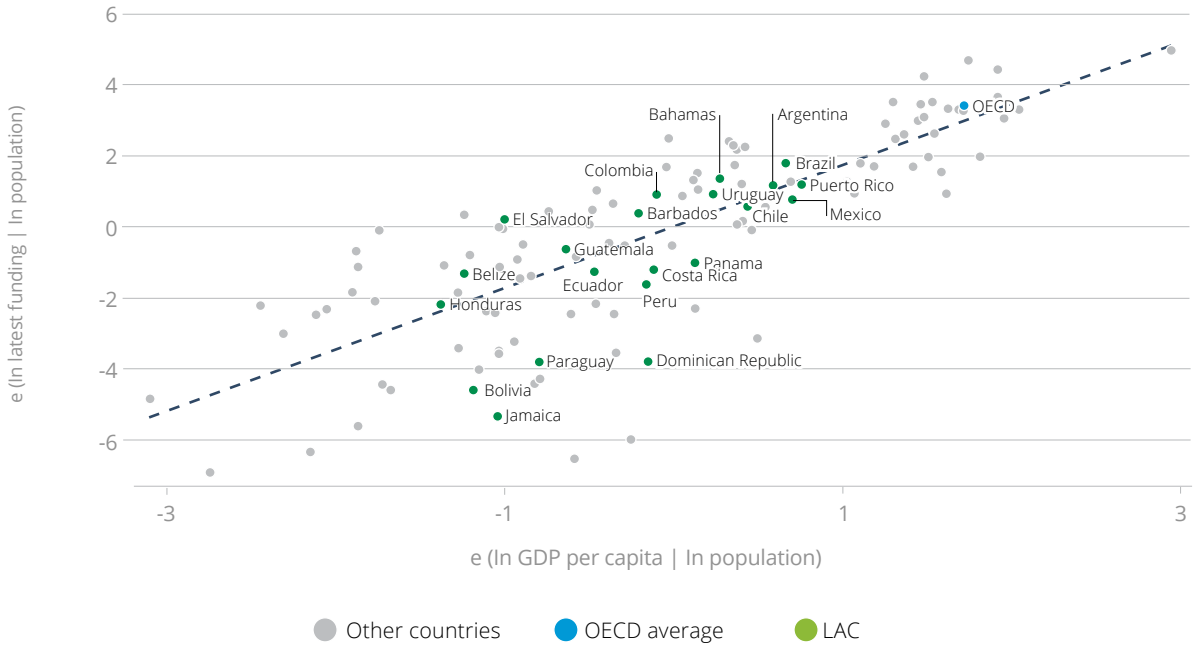
In LAC, linkages between research efforts at academic and research institutes and private-sector needs and applications are weak (Maloney et al., 2025). While most R&D in the United States is funded by industry, in LAC, most is publicly funded and channeled through universities. Further, STEM fields receive a lower share of R&D spending in LAC than in Spain or the US (Maloney et al., 2025). When universities are ranked by industry income (obtained from industry contracts and used to measure knowledge exchange), only 1% of the top 500 higher education institutions in the world are from LAC—lower than any other region (Maloney et al., 2025).

65 UNESCO UIS Education Survey, https://uis.unesco.org/uis-questionnaires. On STEM graduates and innovation, see Winters (2017).

## Access to finance for digitally oriented firms

Firms operating exclusively digitally may face particular difficulties accessing financing, and this can prevent them from growing and effectively participating in digital trade. These firms may have newer, more innovative business models that banks perceive as riskier or for which they may not have developed credit assessment capabilities. These firms may also tend to have more intangible assets than traditional collateral. Furthermore, digital entrepreneurs may not have access to seed, scale-up, and risk capital for early-stage business development (rather than commercial bank lending). Unfortunately, little data is available on firms' access to bank financing (loans) in the digital economy, but access to finance in LAC is generally low. For instance, only one in four Mexican trading firms receives any credit (not just trade finance) from local banks, and only 8% of Mexico's goods trade benefits from trade finance, a lower share than in West Africa or Asia. Similarly, surveyed firms in Central America cited financing gaps as one of the main obstacles to adopting new technologies (IFC, 2021).

**FIGURE 2.21. Equity investment in digital firms, LAC, 2022–2024 (millions of US$)**




Note: N = 123,365. X = population.

Source: World Bank, FCI Digital Business Database.

In terms of equity investment in exclusively digital firms, performance across countries is mixed. Some LAC countries demonstrate investment levels higher than would be expected given their GDP per capita (Uruguay, Brazil, Colombia, El Salvador, Belize, and several others). Investment is below the expected level for their development status in Jamaica, Bolivia, Paraguay, and the Dominican Republic, as well as in countries with a more developed digital economy, such as Mexico and Chile (figure 2.21).

Nearly half of equity investment in LAC digital-only businesses is destined for fintech and online distribution. Of the investments made in 2022–2024, 29% went to fintech and 14% to online distribution. Business services such as digital solutions for logistics, marketing, and business management occupied third, fourth, and sixth place, with 5%–7% of investment each. Digital solutions for specific sectors dominated the other top sectors, including insurance, mobility, health, food, entertainment, travel, education, and utilities technology (in descending order), which each represented 3%–5%. Blockchain, crypto and software, and SaaS each received 4% of the equity investment in the region.

## Conclusion

Firms' and countries' engagement in digital trade is shaped by a range of factors: trade policies affecting digitally enabling and enabled products; regulations governing digital markets; digital infrastructure and connectivity; digital payments; logistics and border procedures for the rapid movement of digitally ordered goods; information frictions; firms' capabilities and digital skills; and access to finance. With the exception of applied trade regimes for the 13 LAC countries covered by the World Bank–WTO STRI and regulatory frameworks, and to varying degrees across countries, LAC economies tend to underperform on most dimensions relative to both developed countries and globally. Realizing the region's potential for digital trade to support income growth and create jobs therefore requires addressing these constraints and strengthening the underlying drivers. Given that countries' relative positions vary across these factors, country-specific strategies are needed to promote digital trade and leverage its benefits. Chapter 3 presents recommendations and discusses how collaboration with development partners and within the region can support these efforts.

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# **Chapter 3.** Policy Recommendations and the Way Forward

# Introduction

Digital trade in LAC has expanded much faster than "traditional" trade. It offers significant opportunities for LAC firms to participate in international trade and for consumers to access a wide range of goods and services from around the world. This type of trade can also promote job creation and development.

However, as discussed above, several challenges remain if LAC is to fully harness the potential of digital trade. In addition to the clear need to improve digital trade measurement, these challenges include those associated with the trade regime for digital backbone goods and services sectors, the regulations and policies governing digital markets and trade, digital infrastructure and connectivity, cross-border digital payments, logistics and border procedures, the severity of information frictions, firms' capabilities and production factors, and the resources available to them (e.g., innovation, digital skills, and access to finance).

# Policy recommendations[66]

This section outlines a set of recommendations and actions to help LAC countries participate more in digital trade.[67] The appropriate combination and sequencing of these actions will depend on each country's current state of digital trade development, the specific challenges they face, and the enabling conditions and constraints they encounter.

### Recommendation 1. Foster open, competitive markets for backbone goods and services

Despite some variability, the trade regime for the key goods and services that enable digital trade is relatively liberal across LAC economies. Deepening trade liberalization in these products can further promote LAC's digital trade footprint.

### Proposed actions

- Foster competition and investment in digital trade–enabling service sectors, including by leveraging the predictability provided by tools like the GATS and its disciplines on Services Domestic Regulation (see also the proposed actions on telecommunications under recommendation 3, below).

66 These are recommendations from the IDB and the World Bank. The WTO Secretariat does not offer trade policy advice or recommendations.

67 The lists of proposed actions are nonexhaustive.

- Consider taking on board the disciplines of the plurilateral Investment Facilitation for Development Agreement negotiated at the WTO, as many LAC countries have pledged to do (see "International cooperation at the World Trade Organization," below).

- Reduce or eliminate tariffs on ICT goods, including by joining the ITA, as some LAC member countries have done.

**Recommendation 2. Strengthen the legal and regulatory foundations for digital trade**

LAC economies have implemented laws and regulations that have improved their regulatory readiness for digital trade in such areas as data privacy, consumer protection, and cybersecurity. The region's regulatory landscape is also more flexible and friendly to digital trade than in many other parts of the world. LAC governments can build on this track record by promoting conducive frameworks for digital trade and ensuring strong, transparent enforcement of digital policies.

### Proposed actions

- Adopt a balanced framework for cross-border data transfers that minimizes costs for firms when moving data internationally while ensuring adequate safeguards, such as the protection of personal and other sensitive data.

- Develop and enforce robust cybersecurity and data protection laws that align with international standards.

- Promote the alignment or interoperability of digital regulations, including data privacy and AI governance, through international cooperation and trade agreements.

- Consider adopting the disciplines contained in the stabilized text of the plurilateral Agreement on Electronic Commerce negotiated at the WTO (see "International cooperation at the World Trade Organization," below).

- Adopt clear guidelines for platform liability that follow best practices.

**Recommendation 3. Strengthen digital infrastructure and connectivity to improve internet access, affordability, and participation in digital trade**

World-class internet and broadband connections are critical enablers of digital trade. LAC economies have made significant progress in expanding and enhancing internet connectivity in the past two decades.

However, gaps and disparities remain in access, cost, and quality, as well as in the expansion of fiber optics, 4G, and 5G networks, which are key to accessing and offering sophisticated digitally delivered services.

### Proposed actions

- Foster competition, investment, and regulatory reforms in telecom markets, including by using tools such as the GATS and its Telecommunications Reference Paper to lock in reforms and guard against costly policy reversals.
- Expand high-speed broadband and mobile networks, prioritizing underserved regions and leveraging public–private partnerships.
- Improve data center infrastructure and power grids to support technologically advanced, digitally delivered services.

**Recommendation 4. Modernize cross-border payment systems**

Further efforts are needed to enhance cross-border payments to support digital trade in LAC. Integrating fast payment systems at the regional level—such as through the Sistema de Interconexión de Pagos (SIPA) in Central America and the Dominican Republic (see box 2.3)—can improve the efficiency and uptake of cross-border payments, thereby reducing friction to digital trade.

### Proposed actions

- Foster open, competitive payment markets, including by guaranteeing trade regimes under the GATS.
- Align regulatory requirements for cross-border payments to ensure a level playing field for all providers.
- Accelerate migration to the ISO 20022 standard for payment systems and promote interoperability among payment systems.

**Recommendation 5. Improve logistics, streamline border processes, and adopt modern technologies to support digital trade in goods**

Friction in trade logistics constrains digital goods trade in LAC. Border processes are time-consuming. When poorly designed and paper-based, they lengthen firms' lead times in the fast-moving world of trade in digitally ordered goods, create unpredictability in supply chains, and ultimately increase costs for firms and consumers.

LAC governments are facilitating trade in goods in two main ways. First, they are implementing policies and practices under the multilateral TFA, including advanced rules on streamlined procedures, cooperation between customs and other border agencies, and the adoption of single windows and authorized operator[68] programs. However, important gaps remain, especially in Central America and the Caribbean. Shared progress is essential: when each party to a trade transaction improves its trade facilitation measures, the resulting gains compound.

Second, LAC governments are optimizing processes and procedures by leveraging technologies, such as blockchain, Internet of Things, and AI.[69] Some LAC customs groups have used AI to facilitate border processes, such as to predict customs fraud (Lacerda Coutinho and de Schoucair Jambeiro Filho, 2018). However, there is still much more scope for LAC countries to adopt modern technologies to further facilitate trade at borders.

### Proposed actions

- Invest in modern logistics infrastructure and last-mile delivery solutions, promoting competition in the service sectors that enable digital goods trade, including by using tools such as the GATS.

- Fully implement the WTO TFA, streamlining customs and border agencies' procedures and implementing single windows.

- Adopt new digital technologies, such as AI, to optimize risk management and administrative processing, thereby reducing unnecessary, delay-generating border controls.

- Advance regional cooperation on trade facilitation, developing shared digital trade platforms and harmonized customs procedures.

**Recommendation 6. Scale up export promotion to support digital trade**

Export promotion plays a key role in helping firms identify and seize opportunities in digital trade. Governments should be ready to expand and tailor these efforts for digital markets and channels.

68 While the term "authorized economic operator" is widely used, the WTO TFA refers to them as "authorized operators" (article 7.7).

69 For example, the customs administrations of Chile, Colombia, Costa Rica, Mexico, and Peru have used the IDB-backed CADENA blockchain platform to share data on their respective AEO certificates securely and in real time. See Corcuera (2018).

### Proposed actions

- Use digital tools and data-driven approaches within export promotion agencies to better match firms with international partners.
- Include digital services exports in export promotion programs, offering tailored support such as trade fairs and information on VAT reimbursement and trade finance.
- Design and implement evidence-based programs that specifically target information frictions affecting digital trade.
- Leverage existing online business platforms such as IDB's ConnectAmericas and partner with online platforms, logistics firms, and fintech providers to support firms in digital exporting.

## Recommendation 7. Support firms as they adopt digital technologies, build relevant skills, and access financing to leverage the opportunities of digital trade

Firm capabilities are critical to the growth of digital trade. Even with adequate connectivity and a conducive business environment, firms need to identify opportunities, adopt technologies, hire workers, and manage their operations to translate these conditions into digital sales and the delivery of goods and services. Fewer businesses in LAC operate digitally than would be expected given the region's current level of economic development. Many LAC firms have digitized their sales and marketing capabilities but are in the early stages of digitalizing their operations. Meanwhile, multiple firm-level surveys indicate that firms that engage in digital trade and diversify their export markets are highly digitalized enterprises that have grown over time to leverage multiple online channels to reach customers and use technologies such as ERP systems and AI to streamline their operations.

### Proposed actions

- Invest in entrepreneurship support and incubator and accelerator programs focusing on digital business models, including through the use of AI-driven tools.
- Develop and scale up digital skills and vocational training, incorporating business management, entrepreneurship, and STEM skills.
- Strengthen the role of publicly supported research institutions and technology transfer organizations as providers of public goods in the identification and dissemination of new technologies, foster university–industry collaboration, and enhance technology adoption including by facilitating the use of

off-the-shelf or easily licensed technologies and private-sector engagement with the global knowledge frontier (such as via linkages with multinational firms and co-invention with international partners).

- Improve access to finance for digital transformation, including credit lines, equity instruments, and risk-sharing mechanisms, and promote seed or risk capital and facilitate innovative financing models for digitally focused firms, as well as the use of intangible assets (such as intellectual property rights and contracts) as indicators of innovative firms' value and repayment capacity.

**Recommendation 8. Improve how digital trade is measured**

Accurately measuring digital trade is essential for understanding its current state, gauging its full potential, and designing effective policies to remove obstacles and foster its development. There is still no consistent and comparable data on digitally ordered trade across countries, so a full picture of digital trade is not available. Without reliable data, it is difficult for policymakers to assess the impact of existing policies and pinpoint where additional interventions are most needed.

In principle, as the *Handbook on Measuring Digital Trade* (IMF, OECD, UNCTAD, and WTO, 2023) stresses, international trade statistics should capture all digital trade, which is a subset of total trade in goods and services. However, the unique characteristics of digital transactions exacerbate some of the long-standing challenges in trade measurement. These include the increased participation of small firms and households, which are often underrepresented in traditional data sources; the rise in low-value shipments driven by digital ordering; and the expanding role of digital intermediation platforms, which adds layers of complexity to tracking and recording trade transactions.

### Proposed actions

- Adopt the international standards for digital trade measurement in the *Handbook on Measuring Digital Trade* (IMF, OECD, UNCTAD, and WTO, 2023).

- Build statistical capacity in national agencies to collect, analyze, and report digital trade data.

- Foster regional and global cooperation on digital trade statistics, including by building partnerships with the private sector (e.g., the IDB-facilitated Americas Business Dialogue) and other relevant actors (e.g., academic establishments and associations), sharing best practices, and developing common reporting frameworks.[70]

70 The Americas Business Dialogue (ABD) is a platform of more than 400 multinational companies and business associations that contributes to the design and implementation of public policies. ABD has several working groups, including those focused on digital trade and economy, trade facilitation, and AI.

# The way forward: Harnessing international cooperation to fuel LAC's digital trade

LAC countries have made significant strides toward greater participation in digital trade, from expanding broadband access to strengthening digital skills and modernizing customs. However, the pace and scale of change must accelerate to keep up with global trends and ensure that all countries and people in the region benefit. Greater cooperation, coordination, and knowledge sharing within LAC and with global partners are essential to addressing cross-border challenges and leveraging collective strengths.

This report offers a set of actions that could help LAC countries expand their participation in digital trade. The recommendations provide a common foundation for governments to build tailored roadmaps that reflect their specific situations, priorities, and needs. These roadmaps can help prioritize actions, mobilize resources, and engage key stakeholders, turning digital trade into a powerful engine for inclusive and sustainable growth. International organizations such as the IDB Group and the World Bank can continue to play an important role in supporting these efforts by assisting countries in designing and implementing roadmaps and providing policy advice, technical cooperation, and concessional and nonconcessional financing. The WTO's rules-based framework, in turn, can promote trade openness, transparency, and predictability, and support digital trade. The WTO Secretariat also offers technical assistance to help its Members implement and benefit from these rules.

## Support from the IDB Group and the World Bank

The IDB and World Bank support LAC countries in strengthening the key determinants of digital trade through technical assistance, analytical work, and financing. These efforts span trade regime and regulatory reforms, infrastructure investment, trade facilitation, export promotion, firm-level support, skills development, and more. While much has already been done and several promising initiatives are underway, significant gaps remain.[71] To fully harness the potential of digital trade, LAC countries need to scale up successful experiences, adapt them to national contexts, and address persistent constraints. The examples provided in the following sections illustrate both the breadth of support and opportunities for replication or expansion across the region.

71 See appendix table A.1 for a summary of IDB and WB-supported interventions relevant to determinants of digital trade.

## Policies and regulations

The World Bank Group (WBG) and the IDB play a key role in supporting LAC governments in strengthening the regulatory foundations for digital trade. The IDB has worked closely with countries to improve legal and institutional frameworks that enable firms, particularly small and medium-sized enterprises (SMEs), to participate in digital value chains. In Argentina, support has focused on enhancing competition in the ICT sector, advancing e-government services, and establishing the Digital Agenda as a coordination tool. In the Caribbean, activities have centered on enabling cross-border data flows, improving consumer protection, and building trust in digital transactions as part of the One Caribbean program.

The WBG is helping countries assess and reform their regulatory environments through tools such as the STRI (developed jointly with the WTO) and the DTRR assessment, which can help identify barriers to digital trade. Broader diagnostics, such as digital economy assessments and the World Bank's Global Regulations, Institutional Development, and Market Authorities Perspective (GRIDMAP), offer a more comprehensive view of countries' digital readiness. These tools are informing reforms in several Caribbean and Central American countries, including through the World Bank's Regional Regulatory/Digital Support for Trade Facilitation, which helps gather data and inform dialogue on digital services trade. In El Salvador, the IFC's Digital Economy Assessment supported the approval of modern data privacy and cybersecurity laws. In Central America, through the Regional Regulatory/Digital Support for Trade Facilitation, the World Bank is helping to harmonize regulations on data protection, electronic signatures, and consumer protection while supporting MSMEs in overcoming e-commerce-related barriers.

Many enablers of digital trade are transnational, such as cross-border data flows, recognition of electronic signatures, and cybersecurity. As a result, regional cooperation has become increasingly important. It promotes regulatory interoperability, legal certainty, and trust while enabling coordinated investments in critical infrastructure like broadband corridors and submarine cables. The IDB's South Connection Program reflects this approach by fostering convergence across key regulatory areas and supporting the rollout of regional fiber-optic networks that reduce costs and expand access across South America.

## Digital infrastructure and connectivity

International cooperation is key to supporting investments in digital infrastructure across LAC that enable digital trade and expand firms' participation in the digital economy. The IDB is working with governments to expand broadband access and modernize core digital infrastructure. In El Salvador, for instance, efforts include developing a state-run data center and cloud infrastructure to provide the digital backbone firms need to compete in online markets. In Colombia, fiber-optic networks are being extended to underserved urban areas, helping firms overcome barriers to digital participation, especially micro and

small enterprises. These infrastructure investments are accompanied by reforms in digital governance, data management, and digital skills to ensure lasting impact.[72]

The World Bank contributes to these efforts in countries such as Argentina, Brazil, and across the Caribbean. A notable example is the Caribbean Digital Transformation Project and its predecessor, which mobilized a regional public–private partnership to deploy high-speed fiber-optic cables across nine islands. The initiative helped raise household broadband coverage from 30% to 75%, connected over 70,000 people, and reduced mobile data prices by up to 36% in some countries. These initiatives support a more inclusive and competitive regional digital economy.

### Digital payments, including cross-border payments

The WBG supports the development and implementation of regulations and payment systems to facilitate digital payments, including cross-border payments. It also provides technical assistance to foster digital payment ecosystems in many LAC countries, including Barbados, Belize, Colombia, the Dominican Republic, Guatemala, Haiti, Jamaica, Mexico, countries in the Organization of Eastern Caribbean States (OECS), Paraguay, Peru, and Suriname. These initiatives encompass infrastructure design and implementation (e.g., for fast payment systems) as well as strategy development, legal and regulatory reforms, and capacity building for risk-based supervision.

Through the Caribbean Digital Transformation Project, the World Bank is supporting the development of a harmonized payment systems legal framework and technical specifications for a fast payments platform for the Eastern Caribbean Currency Union. It is also carrying out a study to identify opportunities to leverage SIPA, a Central American subregional payment infrastructure, to support regional economic integration and digital trade. The World Bank has developed technical notes on digital payments and/or digital financial inclusion as part of recent Financial Sector Assessment Programs in several countries, including Bolivia, Colombia, Ecuador, and Mexico. Legal, regulatory, and policy reforms to enhance digital payment ecosystems have been recognized in recent World Bank Development Policy Financing operations across several countries, including Peru.[73]

### Improved logistics and trade facilitation for trade in digitally ordered goods

Both the IDB Group and the WBG have long supported LAC countries in improving trade facilitation and logistics, key enablers for both traditional and digitally ordered goods. These efforts focus on enhancing

72 In El Salvador, programs include the Social Digital Connectivity Program (ES-G1010) and the Digital Infrastructure Technical Cooperation (ES-T1386). In Colombia, the program is the Fibrazo Loan (CO-L1296).

73 The World Bank is to publish a regional study on the transformative evolution of fast payments in LAC in late 2025.

logistics infrastructure and governance, modernizing customs and other border agencies' procedures, and promoting regulatory and digital harmonization. Programs such as these contribute to lower transaction costs, faster delivery times, and improved trade competitiveness across the region.

The IDB Group has supported long-term logistics reform agendas across several countries. In Panama, this involved shaping a National Logistics Plan, identifying key bottlenecks, and aligning public and private investments, including co-financing for the expansion of the Panama Canal. For example, in Honduras, a mix of regulatory, institutional, and infrastructure reforms helped dramatically reduce border crossing times from over 74 hours to just over 2 hours at El Amatillo, while improving the country's Logistics Performance Index (LPI) ranking from 93rd to 66th between 2018 and 2022. In Colombia, the IDB supported the National Logistics Policy and investments in transportation corridors and port infrastructure. These efforts, combined with reforms in customs and intermodal connectivity, helped lift Colombia's LPI score from 2.7 to 2.9 between 2018 and 2023.

At the national level, the IDB Group has helped countries strengthen institutional and regulatory frameworks and modernize border infrastructure. For instance, in Costa Rica, IDB Group financing supported the upgrading of physical infrastructure, control systems, and interagency coordination at borders, contributing to both national efficiency and regional integration goals. In Peru, a digital single window platform was developed to streamline trade procedures, reduce processing times and costs, and support international interoperability.

Beyond national borders, the IDB Group plays a central role in advancing regional cooperation. A key initiative is the Central American Digital Trade Platform (PDCC), implemented by the Secretariat for Central American Economic Integration (SIECA) with IDB technical assistance and European Union funding. This digital node connects national systems across Central America to facilitate trade and border processes, including customs, migration, and sanitary controls. Among its achievements is the integration of the Central American Single Declaration (DUCA), which standardizes trade data and supports cross-border interoperability. Between 2021 and 2023, regional trade through the platform averaged US$7.89 billion and involved over 450,000 kg of goods.

The World Bank complements these efforts with national and regional support, especially in customs modernization and regulatory harmonization. In Central America, the WBG works with governments and SIECA to align procedures with the WTO TFA and streamline the movement of digitally ordered goods. The World Bank has also supported impactful customs integration reforms through its assistance to Guatemala, Honduras, and SIECA under the Customs Union Deep Integration initiative. This included the development of FYDUCA, a Central American online customs instrument that eliminated border processing for 80% of goods and cut average crossing times from 11 hours to 6 minutes.

In the Caribbean, the WBG is advancing reforms to streamline border agency coordination and align countries with international trade practices. It supported the launch of the Jamaica Trade Information Portal and improvements to risk management and classification procedures. Similar efforts are underway in Grenada, Dominica, and St. Lucia, with reforms focusing on digitalization and reducing clearance times through integrated systems such as ASYCUDA. The WBG is also helping OECS countries further implement the WTO TFA and modernize customs processes.

At the regional level, the World Bank works with CARICOM and the OECS to promote trade facilitation strategies, improve port efficiency, and scale successful practices across countries. These efforts aim to create a more integrated and competitive digital trade environment.

### Export promotion

Export promotion is a key pillar of the IDB Group's support to help firms across LAC access and expand into global markets. Through a combination of financing, institutional strengthening, technical assistance, and digital tools, the IDB Group helps countries and firms, especially SMEs, to build the capabilities needed for export diversification and internationalization.

In countries like Colombia and Uruguay, national programs supported by the IDB have promoted digital exports of services and high-value-added goods. These efforts combine investment and export promotion strategies with regulatory improvements and institutional capacity-building.[74]

At the firm level, the IDB Group supports internationalization through targeted initiatives such as the Matriarca project in Argentina. By using digital technologies—including online platforms, artificial intelligence, and online sales tools—this initiative connects Indigenous women artisans with new markets, improving quality and traceability while strengthening participation in national and global value chains.[75]

Notably, the IDB Group's regional online business platform ConnectAmericas complements these efforts by digitally enabling export promotion. The platform provides firms with training resources, business intelligence, access to international buyers, and virtual matchmaking.[76] Its user-friendly model helps reduce information-related trade costs and has proven especially effective in boosting firms' exports, especially

74 In Colombia, the IDB financed a program to promote exports of knowledge-based services. In Uruguay, support focused on the global services sector, combining FDI promotion, export capacity-building, and employment generation.

75 The IDB Lab-backed Matriarca project uses digital tools to modernize the production and commercialization of artisan goods, empowering Indigenous women and enhancing competitiveness.

76 ConnectAmericas, developed by the IDB with partners like Google and DHL, connects over 260,000 businesses with tools for networking, market access, and training.

those of women-led businesses. A white-label version of the platform enables governments and their export promotion agencies to customize it for national use while leveraging its global reach.

Through export promotion instruments ranging from national strategies to firm-level innovation and regional digital platforms, the IDB Group is helping unlock the international potential of LAC firms and broaden their participation in global trade, including digital trade.

### Innovation, entrepreneurship and enterprise growth

The IDB Group and WBG are also supporting innovation and entrepreneurship conducive to digital trade. The IDB Group provides a useful digital checkup tool that enables firms to assess their current digital capabilities, identify strengths and weaknesses, and define ways to improve. Importantly, the IDB Group is assisting several countries in the region through specific interventions. These include the Digital Innovation to Boost Economic Development Program, which assists firms in Belize at different stages of digital maturity. Similarly, the Program to Accelerate the Digital Transformation Agenda aims to strengthen Trinidad and Tobago's digital innovation ecosystem by addressing low digital capabilities in the private sector. Key activities include:

- strengthening the capacities of fabrication labs, incubators, and accelerators,
- establishing a Center of Excellence to support cutting-edge digital knowledge diffusion to entrepreneurs, startups, and established firms, and
- providing grant funding to support digital transformation and digital innovation initiatives among competitively selected firms, with at least 30% of beneficiaries of Digital Transformation Plan design and implementation being women-led firms.

In Chile and, more recently, in Colombia, a technical cooperation initiative called GerencIA enabled a pilot training program on AI skills for business managers. The goal was to incorporate emerging technologies into business management. Preliminary results have shown greater technology adoption and a trend toward improved integration of AI within companies.

A new digital maturity assessment methodology was successfully implemented in the Dominican Republic. This model enabled diagnostics, improvement planning, and the identification of technical assistance pathways for a group of manufacturing firms. In Ecuador, through an extension model designed to provide technical assistance for digitalization processes, a training program for extension agents was implemented, and the service portfolio of the Escuela Superior Politécnica del Litoral was expanded. This institutional strengthening enabled IDB to launch a loan operation aimed at enhancing business development through digitalization and digital transformation.

In Argentina, Peru, Grenada, St. Lucia, Sint Maarten, and Suriname, the World Bank is supporting the design and implementation of programs that strengthen firms' capabilities, including technology adoption; improving managerial capabilities (e.g., through incubation, acceleration, mentoring, and training); and the acquisition of computers and other equipment to support digital operations. Some of these programs also aim to improve firms' market intelligence and market linkages. These programs work through national government institutions and provide technical assistance and matching grants structured in various ways.

In El Salvador, the IDB Lab has partnered with Scotiabank to help SMEs adopt digital tools for operations, payments, and financial management. Similarly, in Argentina, Peru, Grenada, St. Lucia, Sint Maarten,[77] and Suriname, the World Bank is providing matching grants and technical assistance to support firms in adopting new technologies, improving managerial skills, and connecting better with markets.

These efforts are complemented by diagnostic tools like the World Bank's digital economy assessments, which provide a holistic view of countries' digital readiness, including skills, business capabilities, and trust frameworks. This helps guide targeted support for digital transformation.

### Digital skills development

Closing the digital skills gap is essential for enabling firms and workers in LAC to participate in the digital economy. Both the IDB Group and the World Bank play a critical role by supporting policies and programs that align education and training systems with evolving labor market needs. By collaborating with private-sector actors, universities, and education specialists, these institutions help governments tailor training programs for the digital economy, from basic digital literacy to advanced skills for high-value services.

In several countries, efforts go beyond classroom training to promote practical, market-relevant learning. In Uruguay, IDB Group-supported advanced training programs have helped more than 600 students develop digital and entrepreneurial skills, with a significant share now working in knowledge-intensive sectors or launching their own ventures. In Mexico, cloud computing training offered through a partnership between the IDB Group and Google reached over 16,000 students across 32 states, paving the way for the integration of digital skills into formal vocational education. In Trinidad and Tobago, and through programs in the Southern Cone, the IDB Group helps MSMEs and public institutions strengthen their digital capabilities both through workforce training and by fostering digital business transformation. The

77 Sint Maarten is not a member of the WBG. The WBG manages the Sint Maarten Recovery, Reconstruction and Resilience Trust Fund (SXM TF), which was set up to respond to the devastation caused by Hurricane Irma in Sint Maarten in 2017. The projects the SXM TF finances are implemented by the Sint Maarten government in accordance with the World Bank's Policies and Procedures.

World Bank has supported digital skills as integral components of its digital projects in the Caribbean and the Southern Cone.

### Access to finance

Expanding access to financing is essential for enabling digital entrepreneurs and innovative firms in LAC to grow and compete in digital markets. The IDB Group and the WBG are working with governments and financial institutions to close financing gaps for firms in general and SMEs and startups with digital business models in particular.

In Honduras, the IDB Group's INNOVA-T project supports young entrepreneurs by combining digital skills training with access to finance. The initiative partners with universities and Banco Atlántida to promote spin-off ventures and expand access to risk-tolerant credit for early-stage firms. Similarly, in Ecuador, the World Bank provided a $500 million credit line to SMEs through Corporación Financiera Nacional. This increased financing, employment, and investment, including among firms in digitally deliverable sectors such as information and communications technology (ICT), professional services, and manufacturing (Bruhm et al., 2025). In Brazil, the IFC has supported access to finance for creative industries and innovative SMEs.

The World Bank has also supported the creation of equity instruments and risk-sharing mechanisms to expand access to finance for innovative firms in Jamaica and across the OECS. These efforts help address lenders' risk perceptions and foster more inclusive financial ecosystems that support firms engaging in digital trade.

## International cooperation at the World Trade Organization

At the multilateral level, the WTO plays a key role in promoting digital trade through its rules-based framework, which is important for LAC countries seeking to expand their role in the global digital economy.

As outlined in chapter 2, existing WTO rules and commitments apply to digital trade, as WTO agreements do not differentiate between the technological means by which goods and services are traded. Many LAC countries' commitments at the WTO, as well as their engagement in relevant discussions, are therefore relevant factors in shaping their digital trade ecosystem.

WTO agreements may be leveraged to anchor domestic efforts to increase LAC participation in digital trade. Undertaking legally binding commitments at the WTO enables governments to guarantee policies that can enhance competition and investment in digital trade infrastructure. Furthermore, in a

trade negotiation, governments can "exchange" greater openness of digital trade–enabling sectors for increased access to other sectors of domestic export interest, which may help to ease any domestic resistance to trade reform.[78]

The WTO also offers the opportunity to enhance regulatory convergence by providing a platform for establishing shared principles and common approaches to the regulation of digital trade. By benchmarking and aligning policy guidelines, governments may be more likely to regulate domestically in ways that support cross-border digital transactions and reduce costs for both traders and consumers.

In fact, work that is expressly focused on digital trade has been picking up pace at the WTO. The WTO multilateral discussions under the Work Programme on Electronic Commerce intensified following the decision adopted at the 13th Ministerial Conference (MC13) in 2024. The Work Programme, which provides a platform for experience-sharing and mutual learning, has addressed issues such as the digital divide, focusing on digital infrastructure, connectivity, internet access, technology transfer, digital industrialization, and legal and regulatory frameworks. The trade-related facets of AI and emerging technologies have also been addressed in relation to trade. In addition, as discussed in chapter 2, in 1998, WTO Members agreed to temporarily continue the practice of not imposing customs duties on electronic transmissions (the so-called Moratorium). This has been repeatedly renewed and was in force until the 14th Ministerial Conference, held in March 2026.[79]

LAC countries have been active in these discussions, highlighting the importance of advancing this work with a strong focus on the development dimension and seeking to identify ways to address the digital divide. In this regard, efforts are being made to facilitate the exchange of information on regulatory practices and initiatives and programs supporting digital trade.

In addition to this multilateral work, a group of WTO Members has negotiated disciplines specifically designed to facilitate digital trade. The e-commerce Joint Statement Initiative (JSI) was launched in 2017 and aimed to develop rules on the trade-related aspects of e-commerce that build on existing WTO provisions. The "stabilized" negotiating text was issued in July 2024 as the Agreement on Electronic Commerce (WTO, 2024). Relevant disciplines fall under issues such as an enabling environment for digital trade (e.g., e-authentication and e-signatures, electronic contracts, electronic invoicing, paperless trading, electronic payments); openness (e.g., prohibition of customs duties on electronic transmissions, open government data); trust (e.g., online consumer protection, personal data protection, cybersecurity); and

78 See also WTO (2019).

79 However, the Moratorium and the Work Programme lapsed at the closure of the 14th Ministerial Conference on 30 March 2026, although WTO Members came close to agreeing to their renewal and efforts continue towards finding a way forward.

telecommunication services (e.g., assignment of frequency bands, telecommunications regulatory authority). There are also disciplines on transparency and cooperation, as well as provisions on development.

Several of these disciplines help address some of the regulatory issues identified in this report. For example, provisions on matters such as e-authentication and e-signatures, electronic contracts, and e-invoicing would support the establishment of a predictable environment for cross-border electronic transactions. Paperless trading provisions would help streamline customs procedures and reduce processing times at the border, to the particular benefit of digitally ordered goods. Regulatory frameworks for online consumer protection and personal data protection would encourage trust in digital trade for both businesses and consumers. Overall, the agreement can help LAC countries strengthen their regulatory frameworks for e-commerce.

Willingness to adopt the negotiated e-commerce disciplines is currently limited in LAC, however. Only five countries from the region have co-sponsored the stabilized text (Argentina, Chile, Costa Rica, Paraguay, and Peru). Brazil, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, and Uruguay took part in the negotiations, as illustrated in table 3.1, but are still in the process of domestic consultations and deliberations regarding the text (WTO, 2025).

Another WTO JSI has concluded negotiations on disciplines that could help LAC countries enhance their participation in digital trade. The plurilateral Investment Facilitation for Development Agreement, endorsed by around two-thirds of WTO Members, aims to improve the transparency and efficiency of investment procedures and facilitate the operations of investors across all economic sectors, including those key to digital trade. As such, it would help attract more and higher-quality investment in digital connectivity infrastructure.[80] Most LAC countries will accept these disciplines, as illustrated in table 3.1.

80 WTO, "Investment Facilitation for Development," https://www.wto.org/english/tratop_e/invfac_public_e/invfac_e.htm.

**TABLE 3.1. Participation of LAC WTO Members in the Joint Statement Initiatives on e-commerce and investment facilitation for development**

| Joint Statement Initiatives | LAC WTO Members |
|---|---|
| Both e-commerce and Investment Facilitation for Development (IFD) | Argentina, Brazil, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay |
| Only e-commerce | Colombia |
| Only IFD | Antigua and Barbuda, Barbados, Belize, Bolivia, Dominica, Dominican Republic, Grenada, Suriname, Venezuela |
| Neither | Cuba, Guyana, Haiti, Jamaica, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Trinidad and Tobago |

Source: WTO (2024) and WTO, "Investment Facilitation for Development," https://www.wto.org/english/tratop_e/invfac_public_e/invfac_e.htm.

The WTO also offers training and technical assistance that can strengthen policymakers' awareness and understanding of the rules that apply to digital trade. Technical assistance extends beyond trade disciplines and may also cover issues related to measuring digital trade. Furthermore, digital connectivity is an established theme of the WTO-led Aid-for-Trade initiative.

## Regional trade agreements and digital economy agreements

LAC countries have also promoted digital trade through RTAs and digital economy agreements (DEAs) concluded with other LAC countries and extraregional partners. All LAC countries are members of an RTA, and over 40% of the RTAs they have concluded include provisions on digital trade. Collectively, countries in the region have concluded 268 RTAs: 86 exclusively cover trade in goods, and 182 cover trade in both goods and services.[81] Of these, 114 agreements contain at least one digital trade provision, of which 102 include separate, dedicated chapters featuring disciplines on digital trade (figure 3.1).

The disciplines LAC countries have undertaken in their RTAs include binding provisions on aspects such as the nonimposition of customs duties on electronic transmissions, the nondiscriminatory treatment of digital products, paperless trading, electronic authentication, electronic signatures, online consumer protection, and personal data protection. Examples of RTAs containing such provisions that LAC economies

81 This figure is based on the RTAs in force and those notified to the WTO as at March 2025.

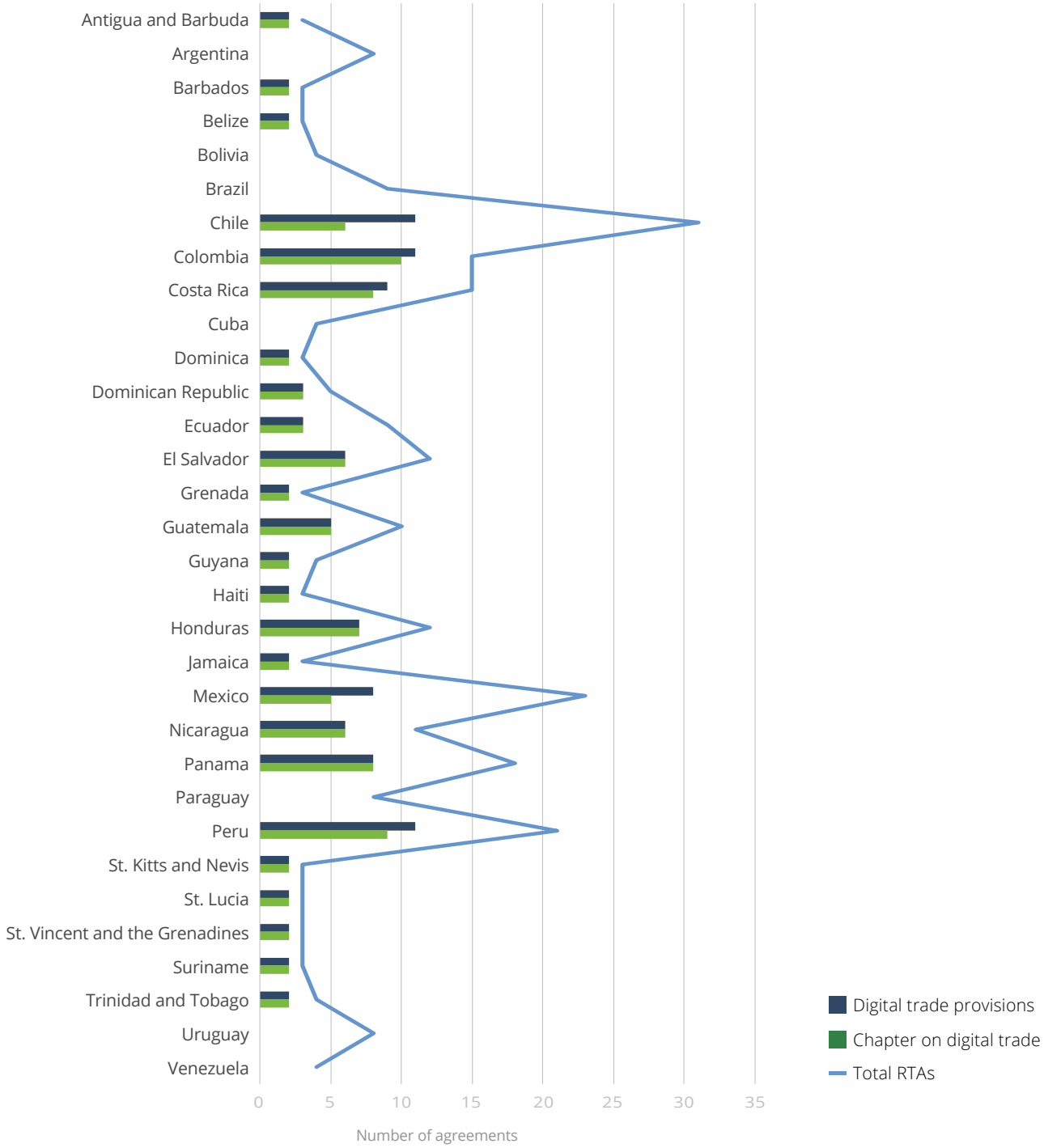
are parties to include the Comprehensive and Progressive Agreement for Trans-Pacific Partnership; the Pacific Alliance; the Free Trade Agreement between the Dominican Republic, Central America, and the United States; the United States–Mexico–Canada Agreement; and the Free Trade Agreement between Central America and the Republic of Korea. LAC's RTAs also contain best-endeavor and aspirational provisions in areas such as interoperable digital payments and the promotion of digital IDs. These can be found in RTAs between Chile and Thailand, Colombia and the European Free Trade Association (EFTA) economies, or Peru and Singapore.

Some regional integration blocs in LAC have also developed roadmaps for digital agendas. Examples include the Pacific Alliance's Digital Regional Market Road Map, and the Andean Community's Andean Digital Agenda.

DEAs have also allowed LAC countries to deepen their digital trade disciplines. These agreements include exclusively digital trade disciplines but, unlike RTAs, do not provide for trade liberalization. The Digital Economy Partnership Agreement (which Chile, New Zealand, the Republic of Korea, and Singapore are currently party to and which Costa Rica is on track to join) is currently the only DEA with LAC members. It promotes alignment on cross-border data flows, paperless trading, e-invoicing, signatures, personal data protection, AI, and online consumer protection, among others.[82]

82 The implementation of e-commerce chapters and digital trade and economy agreements may require continued attention and monitoring. Studies on the implementation of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership e-commerce chapter, for instance, show strong compliance on basic provisions but a lower level of implementation on data transfer rules and on best-endeavor rules on cybersecurity capabilities and collaboration, for example. See Suominen (2022 and 2024).

## FIGURE 3.1. Participation of LAC countries in RTAs with provisions on digital trade




Notes: Based on RTAs notified to the WTO. Annexes to RTAs containing operational provisions on e-commerce have been counted as an e-commerce chapter. Those containing only aspirational provisions have not been counted as a chapter. Data as of March 2025.

Source: World Trade Organization Regional Trade Agreements Database.

## Conclusion

The efforts showcased in this chapter testify to the progress many LAC countries have made in laying the groundwork for greater participation in digital trade. Advances have been seen in areas such as regulatory frameworks, connectivity, trade facilitation, and firm-level capabilities. At the same time, important challenges remain across the region in these and other areas, and continued efforts are needed to strengthen hard and soft digital infrastructure, close implementation gaps, and ensure that firms, workers, and consumers can fully benefit from digital opportunities.

Tailored to country-specific conditions and appropriately sequenced, the recommendations and actions identified in this chapter can further enhance LAC's participation in digital trade. The IDB Group and the World Bank can support the design and implementation of digital strategies in LAC countries by providing policy advice, technical cooperation, and financing. The WTO contributes by promoting digital trade through its framework of rules, by providing technical assistance to help with the implementation of these, and by serving as a forum for international cooperation. RTAs offer additional, complementary avenues to support these efforts. The IDB Group, the World Bank, and the WTO will continue working together to support countries on this agenda. Deepening this collaboration will be key to helping countries define effective roadmaps to expand digital trade and amplify the impact of reforms across the region.

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# Appendix

## APPENDIX TABLE A.1. IDB- and World Bank–supported interventions relevant to determinants of digital trade

| Country | Policy and regulations | Infrastructure (incl. digital public infrastructure) and digital connectivity | Digital payments | Trade facilitation and logistics | Export promotion | Capabilities for innovations and entrepreneurship | Skills for the digital economy | Access to financing |
|---|---|---|---|---|---|---|---|---|
| Antigua and Barbuda | | | O | | | | | O |
| Argentina | X O | X O | | X O | X | X O | X O | X O |
| The Bahamas | X | X | | X | | X | X | X |
| Barbados | X | X | O | X | | X | X | X |
| Belize | X O | | O | X | X | X | X | X |
| Bolivia | X | X | | | | | | X |
| Brazil | X | X O | X | X | | X O | X O | X O |
| Chile | X | X | | | X | X | X | X |
| Colombia | X | X | O | X | X | X | X | X |
| Costa Rica | X O | X | X | X O | | X | X | X |
| Dominica | O | O | O | | | O | O | O |
| Dominican Republic | | X O | O | X | | X | X | X |
| Ecuador | | | | X | | X | | X O |
| El Salvador | X O | X | | X O | | X | X | X O |
| Grenada | O | O | O | O | | O | O | O |
| Guatemala | O | | O | O | | | | X |
| Guyana | | | | X | | | X | X |
| Haiti | | X | X O | | X | X O | | X |
| Honduras | X O | X | X | X O | | X | X | X |

| Country | Policy and regulations | Infrastructure (incl. digital public infrastructure) and digital connectivity | Digital payments | Trade facilitation and logistics | Export promotion | Capabilities for innovations and entrepreneurship | Skills for the digital economy | Access to financing |
|---|---|---|---|---|---|---|---|---|
| Jamaica | X O | | O | X O | | X O | X | X O |
| Mexico | | X | O | | | X | | X |
| Nicaragua | X O | X | | X O | | | | X |
| Panama | X O | X | | X O | | X | X | X |
| Paraguay | X | X | O | X | X | X O | X | X |
| Peru | X | X O | X O | X | | X O | X O | X |
| St. Kitts and Nevis | | | O | O | | | | O |
| St. Lucia | O | O | O | O | | O | O | O |
| St. Vincent and the Grenadines | O | O | O | O | | O | O | O |
| Suriname | | X | O | | X | | X | X |
| Trinidad and Tobago | X | | | X | | X | X | X |
| Uruguay | X | X | | X | X | X | X | X |
| Venezuela | | | | | | | | X |

Note: "X" and "O" identify IDB Group and World Bank Group activities. Data primarily corresponds to investment loans and technical operations/technical assistance that are either ongoing or have been completed within the last five years. This data was provided by the windows and specific departments responsible for operations in the areas in question.

Digital trade is reshaping how Latin America and the Caribbean connects to the global economy, creating new opportunities for growth, innovation, and inclusion. This report explores the rapid expansion of digital trade across the region, highlighting both the progress achieved and the substantial potential that remains untapped.

Drawing on new evidence and comprehensive analysis, it examines the factors that enable, or constrain, countries' participation in international digital markets, including market openness, digital regulation, infrastructure and connectivity, cross-border payments, logistics and trade facilitation, export promotion, firm capabilities, skills and access to finance. The report identifies practical policy priorities and outlines a forward-looking agenda to strengthen regional integration and international cooperation.

By helping translate digital trade opportunities into tangible economic gains, this report offers a roadmap for policymakers, businesses, and development practitioners seeking to harness digital trade as a driver of productivity, competitiveness, and inclusive development.

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