

# INTRODUCTION AND OVERVIEW

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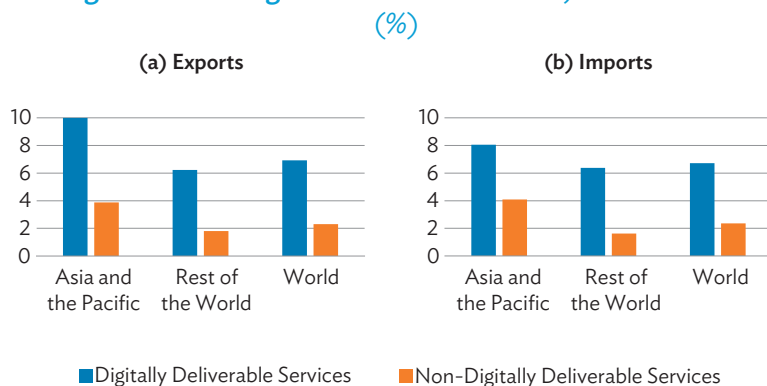
## 1.1 Background

Measures to contain the coronavirus disease (COVID-19) pandemic forced economic actors across the globe to find digital solutions to restrictions such as social distancing almost overnight. Digital delivery increased for a wide range of services such as audiovisual, banking, education, and health care. The sudden shift toward a more digital-based and enabled economy also propelled international trade to move rapidly into the digital space, while pandemic-induced travel restrictions accelerated the trend. For example, the World Trade Organization (WTO) recorded a sharp drop in the trade of health services received by the movement of patients (mode 2 trade) or delivered by health service providers (mode 4 trade) in 2020 (World Bank and WTO 2022). At the same time, health services trade delivered remotely (mode 1 trade) increased considerably. The objective of this book is to look beyond this sudden switch in gears, to gain better understanding of the implications of the long-term shift toward increased trade in digitally delivered international services.

The trend toward a more digital economy started well before COVID-19. Many industries recognized the potential of digital solutions to increase their productivity, including in their cross-border transactions. As one of the drivers of Industry 4.0, the digital sector was already growing at a significant pace before the pandemic. According to WTO (2019), information and communication technology registered the fastest export growth among the services sectors in 2018, increasing by 15%. Indeed, from 2005 to 2019, the average annual growth rates of both exports and imports in digitally deliverable services were higher than exports in non-digitally deliverable service sectors and total services.

The Asia and Pacific region is at the forefront of this trend. Figure 1.1 shows the region experienced faster growth than the rest of the world in digitally deliverable services from 2005 to 2020. Exports and imports in digitally deliverable services in Asia and the Pacific grew at an average annual rate of 10.1% and 8.0%, against a 6.9% global average for exports and 6.7% for imports over that period.

**Figure 1.1: Average Annual Growth Rate, 2005–2020**



Notes:

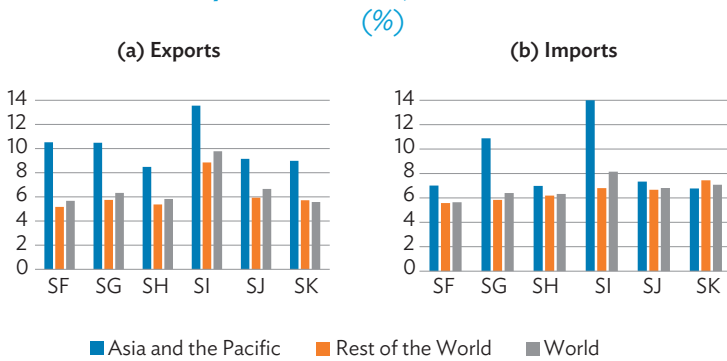
- (i) Digitally deliverable services include insurance and pension services; financial services; charges for the use of intellectual property not included elsewhere (n.i.e.); telecommunications, computer, and information services; other business services; and personal, cultural, and recreational services.
- (ii) Non-digitally deliverable services include manufacturing services on physical inputs owned by others; maintenance and repair services n.i.e.; transport; travel; construction; and government goods and services n.i.e.
- (iii) Total services refer to the sum of digitally deliverable services and non-digitally deliverable services.

Source: ADB calculations based on United Nations Conference on Trade and Development (UNCTAD). UNCTADStat: World Trade Organization-UNCTAD (BPM6) International Trade in Services Annual Dataset. <https://unctadstat.unctad.org/> (accessed July 2021).

Of the digitally deliverable services, telecommunications, computer, and information services (SI in Figure 1.2) grew fastest. This was attributable to telecommunications and computer services having become more easily available and affordable and, as a result, more services being increasingly tradable and possible to deliver remotely (UNCTAD 2019). Furthermore, exports of all service items in the Asia and Pacific region grew at faster rates than in the rest of the world, suggesting that the region has been thriving in digital services across all services industries.

South Asia and Southeast Asia led the overall growth in digital services exports to the world (Figure 1.3). Singapore dominates in Southeast Asia, producing two-thirds (67%) of the subregion's digital services exports. In parallel, the Philippines emerged as a top digital services exporter, producing almost one-eighth (13%) of the subregion's digital services exports. The Philippines' top service item is other business sectors, which contributed almost 70% of its digital services exports from 2005 to 2019. While smaller in comparison, digitally deliverable services trade in other Asian economies has grown substantially.

**Figure 1.2: Average Annual Growth Rate by Service Items, 2005–2020**



SF = insurance and pension services; SG = financial services; SH = charges for the use of intellectual property; SI = telecommunications, computer, and information services; SJ = other business services; SK = personal, cultural, and recreational services.

Notes:

- (i) Economy groupings follow the Asian Economic Integration Report classification of the Asian Development Bank (ADB).
- (ii) Asia and the Pacific includes all developing and developed ADB-member economies.
- (iii) Rest of the World includes all economies except Asia and the Pacific.

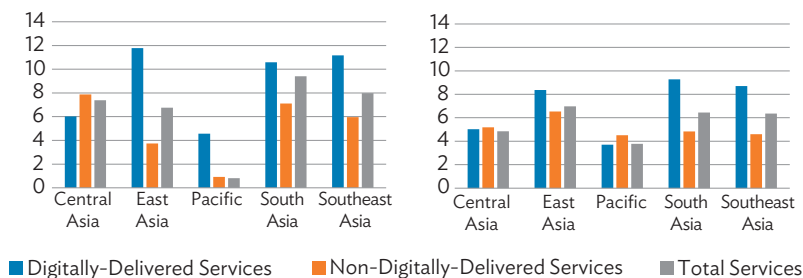
Source: ADB calculations based on United Nations Conference on Trade and Development (UNCTAD). UNCTADStat: World Trade Organization-UNCTAD (BPM6) International Trade in Services Annual Dataset. <https://unctadstat.unctad.org/> (accessed July 2021).

Digital services are playing an increasingly significant role globally. Digitally deliverable services exports are beginning to overtake non-digitally deliverable services exports across the world, which suggests economies are expanding their capacity to produce digitally enabled services. Growth in shares for the digitally deliverable services exports within the period has been particularly prolific for Asia and the Pacific (Figure 1.4). From a 35% share in total services exports in 2005, it increased to 60% in 2020. In contrast, the rest of the world exhibited growth in shares from 46% in 2005 to 54% in 2019.

An increased share of digitally delivered services was also evident for imports (Figure 1.5). From 34% of total services imports in 2005, it increased to 41% in 2019. Meanwhile, the rest of the world exhibited growth in shares, from 46% in 2005 to 55% in 2019.

Trends show that global demand for digital services is rising and accelerating. Both public and private sectors have been looking for ways to expand digital capacities in order to increase efficiency. Consequently, it is now essential for economies to evaluate their competitiveness in the sector and formulate strategies accordingly.

**Figure 1.3: Average Annual Growth Rate by Asian Subregion, 2005–2019 (%)**

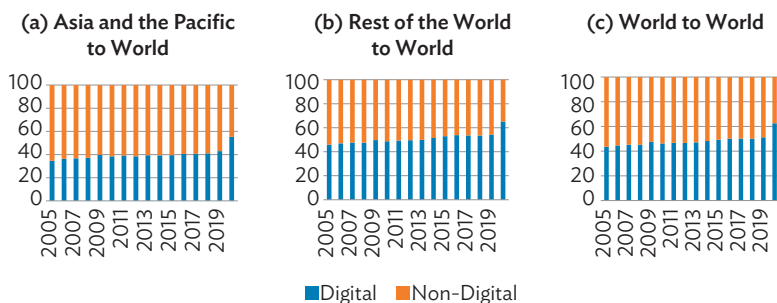


Notes:

- (i) Digitally deliverable services include insurance and pension services; financial services; charges for the use of intellectual property not included elsewhere (n.i.e.); telecommunications, computer, and information services; other business services; and personal, cultural, and recreational services.
- (ii) Non-digitally deliverable services include manufacturing services on physical inputs owned by others; maintenance and repair services n.i.e.; transport; travel; construction; and government goods and services n.i.e.
- (iii) Total services refer to the sum of digitally deliverable services and non-digitally deliverable services.

Source: ADB calculations based on the World Trade Organization–Organisation for Economic Co-operation and Development Balanced Trade in Services Dataset (BaTIS).  
[https://www.wto.org/english/res\\_e/statis\\_e/trade\\_datasets\\_e.htm](https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm) (accessed July 2021).

**Figure 1.4: Share of Digitally and Non-Digitally Deliverable Services Exports, 2005–2020 (%)**

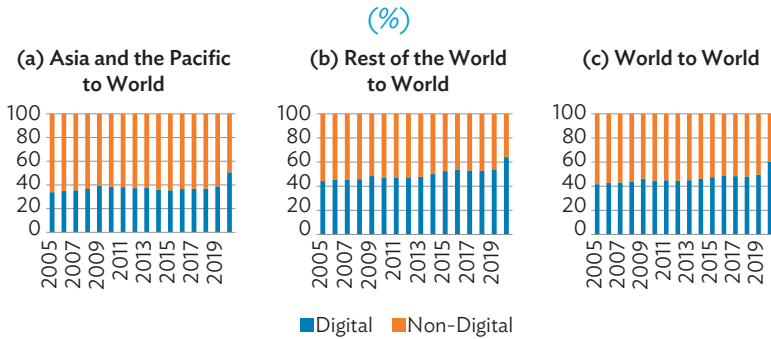


Notes:

- (i) Digital includes insurance and pension services; financial services; charges for the use of intellectual property not included elsewhere (n.i.e.); telecommunications, computer, and information services; other business services; and personal, cultural, and recreational services.
- (ii) Non-digital includes manufacturing services on physical inputs owned by others; maintenance and repair services n.i.e.; transport; travel; construction; and government goods and services n.i.e.

Source: ADB calculations using the World Trade Organization–Organisation for Economic Co-operation and Development Balanced Trade in Services Dataset (BaTIS).  
[https://www.wto.org/english/res\\_e/statis\\_e/trade\\_datasets\\_e.htm](https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm) (accessed July 2021).

**Figure 1.5. Share of Digitally and Non-Digitally Delivered Services Imports, 2005–2020**



Notes:

- (i) Digital includes insurance and pension services; financial services; charges for the use of intellectual property not included elsewhere (n.i.e.); telecommunications, computer, and information services; other business services; and personal, cultural, and recreational services.
- (ii) Nondigital includes manufacturing services on physical inputs owned by others; maintenance and repair services n.i.e.; transport; travel; construction; and government goods and services n.i.e.

Source: ADB calculations using the World Trade Organization–Organisation for Economic Co-operation and Development Balanced Trade in Services Dataset (BaTIS).

[https://www.wto.org/english/res\\_e/statis\\_e/trade\\_datasets\\_e.htm](https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm) (accessed July 2021).

This book attempts to provide analysis of the most critical issues on digitally delivered services trade with a focus on Asia and the Pacific. As such, the following research questions are particularly interesting:

- (i) How can digitally delivered services be defined?
- (ii) What trends can be observed in digitally delivered services, and which subsectors exhibit the largest growth rates?
- (iii) Which subregions and economies have shown the strongest growth in digitally delivered services?
- (iv) What factors are driving trade in digitally delivered services?
- (v) How is trade in digitally delivered services addressed in trade agreements?
- (vi) How can cybersecurity be achieved for digitally delivered services?
- (vii) How can digitally delivered services be taxed in the most effective and fair way?

These questions are timely as the world has just entered a new phase of rapid growth of digitally delivered services. As digitally delivered services reach substantial volumes, it is now possible to better gauge their possible impact.

This book is targeted at the general audience seeking to better understand the challenges and risks associated with trade in digital services. So far, the empirical literature on this topic is relatively thin. This book aims to help close the gap.

The authors also hope that the book can provide useful guidance for trade policy makers. By shedding light on the main drivers and policies related to digital services, the book aims to equip government officials with the basic knowledge on digital services trade and could help orient policy makers in undertaking the necessary domestic reforms to reduce the digital divide.

Digital services trade has become an essential element of trade policy, in particular in ongoing and forthcoming trade negotiations. The book aims to equip government officials with up-to-date knowledge and valuable tools in supporting the development of digital services trade. Traditional thinking about trade barriers, such as tariffs, no longer inform negotiations about trade in services being delivered remotely. Policies that hinder the free flow of data across borders, such as data localization requirements, although having legitimate policy objectives in many cases, can negatively impact trade in such services. As these services are typically intangible, taxation is another challenge. Accordingly, the book aims to provide a comprehensive overview of issues at the core of digitally enabled services trade and to help negotiate trade deals that are commensurate to opportunities of the digital economy. Several of the issues, such as cybersecurity and taxation, are not only key for trade negotiations but are at the core of digital ecosystems. By highlighting the major challenges in the area of policy and regulations, the book also contributes to raise awareness and understanding on the difficulties that developing countries may face in embracing new digital services trade opportunities and in overcoming the growing digital divide. It could therefore serve to orient the future aid for trade agenda toward additional support in the area of “soft infrastructure” that has captured only little attention so far.

## 1.2 Chapter Overviews

Chapter 2 by Antonella Liberatore, Rolando Avendano, and Won Hee Cho introduces a conceptual framework for the measurement of digital services trade, building on the *Handbook on Measuring Digital Trade* by the Organisation for Economic Co-operation and Development (OECD), the WTO, and the International Monetary Fund (IMF). Having a solid framework allows the magnitude of this type of trade to be measured and to better understand its evolution. Applying the framework to Asia and the Pacific, the authors show that digital services trade has increased significantly over the past 15 years, both within the region and with the rest of the world. East Asia and South Asia are identified as the subregions driving this trend. Business services and telecommunications, as well as computer and information services, are the biggest contributors to Asia’s growth in digitally deliverable services trade. While there is marked heterogeneity by subregion about the main digitally deliverable services, the predominant mode of supply is mode 1.

In Chapter 3, Jong Woo Kang, Rolando Avendano, Pramila Crivelli, Dominique Hanna Sy, and Won Hee Cho aim to better understand factors affecting competitiveness in digital services across economies. They divide possible factors into four main categories: human capital, infrastructure, investment, and policies. Using a gravity model for 235 exporting and 236 importing economies from 2005 through 2019, the authors find that higher human capital, better digital infrastructure, higher investment in telecommunications, and a more open internet regime were associated with more digital services trade. Interestingly, non-digital services trade in Asia and the Pacific showed significantly less or none of these associations. Using a Frankel and Romer framework, the study also finds that increasing bilateral trade in digital services is associated with a rise in output and gross national income per capita. This suggests that Asian economies may consider the expansion of digital services as a possible development strategy. To do so, the authors conclude that more investment in human capital, digital infrastructure, an open internet, and regional cooperation is needed.

In Chapter 4, Ben Shepherd uses ADB's Multiregional Input-Output Tables (MRIOT) to produce measures to estimate the extent to which digitally delivered services are used in global value chains (GVCs). The author uncovers that digitally delivered services are an important part of the GVC landscape in Asia and the Pacific as they complement strong development in the region's manufacturing sector. The chapter then presents a quantitative general equilibrium model of world trade based on ADB MRIOT for 2019 to estimate the effects on trade liberalization and deregulation of digitally delivered services. The results show that deregulation has a larger impact on real incomes than trade liberalization, because it affects the prices on the internal market more strongly. Moreover, the estimations reveal that reducing trade costs in digitally delivered services can have spillover effects to other sectors and increase the participation in GVCs.

Chapter 5 by Erik van der Marel studies how regulatory measures that restrict the flow of electronic data between economies impact digitally delivered services in Asia and the Pacific. The chapter focuses on three data-related policies: (i) data localization policies, (ii) local storage requirements, and (iii) conditional flow regimes. Using a difference-in-difference (DID) approach, the results indicate that data localization and local storage requirements reduced trade at the global level. In Asia and the Pacific, data localization and strict rules on data flows seem to be particularly burdensome for digital services trade. The results suggest that to benefit fully from the development opportunities offered by digital services trade, an open regime for cross-border data flows is important.

Henry Gao provides a comprehensive analysis on the regulation of digital services trade in trade agreements in Chapter 6. Starting with multilateral regulation, the author views the General Agreement on Trade in Services (GATS) as being in need of improvement for dealing effectively with e-commerce

activities, especially with respect to classification, obligations, and exceptions. The chapter then presents the three main approaches for digital trade regulations by the United States (US), the European Union (EU), and the People's Republic of China (PRC). While the US is promoting the free flow of data across borders and trying to ensure that overly restrictive privacy regimes do not hamper the commercial interests of firms, the key concern for the PRC is data security; while for the EU, it is to safeguard the privacy of the individual. Finally, the chapter studies how digital trade is dealt with in 53 free trade agreements (FTAs) in Asia and the Pacific and finds that improvements in the FTA chapters dealing with digital trade are needed to better harness the opportunities of digital trade.

In Chapter 7, Minjung Kim explores recent developments in digital trade negotiations between the Republic of Korea and its trading partners, focusing on e-commerce rules. The author first examines e-commerce provisions contained in major FTAs of the Republic of Korea and compares them with the rules included in the latest and most advanced digital economy partnership agreements. That comparison reveals that digital trade rules in FTAs of the Republic of Korea have gradually developed, from removing customs duties and ensuring free flow of data, to obligations of nondiscriminatory treatment and restrictions on regulating the location of computing facilities, to rules for certain technical standards. The author concludes that, as digital trade law is increasingly influencing cross-border business transaction, the respective rules need to be made more conducive for business.

Chapter 8 by Yao-chung Lennon Chang and Han-Wei Liu highlights the importance of ensuring cybersecurity and preventing cybercrime in promoting digital trade in services. Chang and Liu define cybersecurity and cybercrime by describing their main features. The authors then provide an overview of international and national responses to tackle cybercrime and cybersecurity concerns. They evaluate the role of the WTO and conclude that it is not well equipped to explicitly address the issues. Finally, the chapter looks at recent preferential trade agreements and finds they have developed new ways to tackle trade concerns related to cybersecurity. In concluding, the authors issue a reminder that many developing countries lack adequate regulatory frameworks and the financial resources to tackle cyberthreats effectively.

In Chapter 9, Bruno da Silva and Rolando Avendano explore challenges in levying taxes on digital services trade. The nature of digital services and the reduced need for a physical presence to deliver them render taxation complicated. Most measures Asian economies have taken for taxing digital services are either indirect taxes on imported digital services, withholding taxes, anti-avoidance taxes, digital permanent establishment, or digital services taxes. The chapter introduces the two taxation pillars of the OECD/G20 base erosion and profit shifting project and examines possible implications for cross-border digital services. Under Pillar One,



taxes can be levied on digital services providers independent from their physical presence. Under Pillar Two, a global minimum corporate tax for multinational enterprises is introduced. Finally, the authors discuss the attempt to tax income from digital transactions under the UN Model Tax Convention.

Chapter 10 by Jong Woo Kang, Pramila Crivelli, and Mara Claire Tayag concludes with policy recommendations.

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