Studies in Trade, Investment and Innovation No. 89

Services and Global Value Chains: The Asia-Pacific Reality

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Abbreviations and acronyms

ABAC	APEC Business Advisory Council
AFTA	ASEAN Free Trade Area
ASEAN	Association of Southeast Asian Nations
BCG	Boston Consulting Group
BITs	Bilateral Investment Treaties
BOP	balance of payments
BPO	business process outsourcing
BRC	British Retail Consortium
CAGR	compound annual growth rate
Comtrade	United Nations Commodity Trade Statistics
CPC	United Nations Central Product Classification
DBO	design, build and operate
ESCAP	Economic and Social Commission for Asia and the Pacific
EFTA	European Free Trade Association
FATS	Foreign Affiliates Statistics
FDI	foreign direct investment
FTA	Free Trade Agreement
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GVCs	Global Value Chains
HACCP	Hazard Analysis and Critical Control Points
HDOR	heavy-duty truck and off-roading
ICIO	Inter-Country Input-Output
ICT	information and communications technology
IoT	Internet of Things
IP	intellectual property
ISIC	International Standard Industrial Classification
ISO	International Organization for Standardization
MFN	most-favoured nation

NAFTA	North American Free Trade Area
OECD	Organisation for Economic Co-operation and Development
OEMs	Original Equipment Manufacturers
PICTA	Pacific Island Countries Trade Agreement
PTAs	Preferential Trade Agreements
QA/QC	Quality Assessment and Quality Control
R&D	research and development
RTAs	Regional Trade Agreements
SAARC	South Asian Association for Regional Cooperation
STRI	Services Trade Restrictiveness Index
TiSA	Trade in Services Agreement
TiVA	Trade in Value-added
UNCTAD	United Nations Conference on Trade and Development
UNSD	United Nations Statistics Division
WTO	World Trade Organization

Introduction

Services are now the largest contributor to gross domestic product (GDP) and employment in almost every country. In Asia-Pacific, services generate about 60 per cent of GDP, employ more than 40 per cent of the labour force, generate most new jobs and attract an increasing share (60 per cent in 2016) of greenfield foreign direct investment (FDI) projects. They are essential in raising productivity, both in industrialized and in developing economies. With a critical role of services in such diverse areas such as building infrastructure, enhancing the quality of labour force through education and health, providing supply of energy and water, and in securing peace and stability, services are also crucial for the implementation of the 2030 Agenda for Sustainable Development.

Services used to be considered non-tradable or, at best, difficult to trade across borders. When services were first introduced to the multilateral negotiating agenda in the mid-1980s, they were described as non-transportable, non-storable and mostly comprising end-use or "consumer" services requiring a simultaneous presence of producer and consumer in the same locality. Leap to 2017, and one finds that technological developments and digital revolution have resulted in a much-changed view of services trade. Services are not only transportable (using information technology or embodiment in goods), but use of services as an input (intermediates) has helped to shape international trade and investment, mostly through global value and supply chains but more recently also digitalization of trade, into a dynamic engine of growth and sustainable development in many economies. Indeed, about half of all world manufacture trade takes places through Global Value Chains (GVCs) and services; for example, ICT, R&D, financial, professional and other services are recognized as the key enablers of internalization of value and supply chains.

There is a high realization of the importance of services and services trade for sustainable development of economies, given their role in more efficient allocation of resources and connectivity to international markets. However, there is a gap between this understanding that is accepted in the literature and the way services and services trade are treated in terms of policymaking and regulations. Impediments are widespread and there is rarely a cohesive and economy-wide approach to policymaking regarding services. The survival of interventionist and protectionist policies in services trade is not only because of a priori opposition to opening markets to

protect domestic providers and secure the viability of domestic services sectors. Largely, this is a result of the lack of evidence about the impact of barriers on trade in services. Because most of the impediments are of a "behind the border" or regulatory character, inventorying them and measuring their effect is very challenging. Even when studies are able to show that, for example, countries with more restrictive policies towards services trade not only import less but also export less, suggesting that such impediments also hurt the competitiveness of domestic industry. However, these studies are not necessarily accepted as convincing evidence in (developing) countries for which there are no data allowing the replication of such studies. A consequence of the prevalence of services trade interventions is that trade costs for goods (and services) will remain high, thereby de-incentivizing entry of SMEs, discouraging investment in new products and technologies, and limiting opportunities for export and economic diversification.

This publication offers a conceptual framework for discussing services in GVCs and synthesizes findings from empirical literature with a focus on Asia and the Pacific. Chapter 1 conceptualizes the role of services in GVCs and highlights problems that exist when assessing the importance of that role. After introducing related terminologies, and discussing various roles that services play in GVCs as inputs and final products, the factors behind the growing roles of services in GVCs are examined. The chapter highlights three major factors: (a) the growing geographical dispersion of production process; (b) the impacts of technological progress; and (c) the increasing economic liberalization during past decades. The chapter ends by introducing the challenges faced in measuring the contribution of services in GVCs.

Chapter 2 analyses the role of services in international trade by Asia and the Pacific. It looks at the importance of services from the standpoint of the international fragmentation of production in manufacturing and services. Services play important roles in GVCs, either as part of exported products or as inputs in the production of goods and other services. The input role of domestic services has been a hidden part of trade value, as trade is typically measured only as the gross value of the cross-border flows of products. With the lack of high-quality data for tracking the flows of value-added by each service activity of each country, the roles of services are surely underestimated both in terms of the share of services in international trade and the contribution of services as inputs in the production in GVCs. With particular attention being given to the roles of services in international trade and GVCs in the Asia-Pacific region, the analysis in this chapter is based on OECD-WTO data on trade in value-added to supplement official service-trade statistics, in order to confirm the important roles of services in

the modern trade environment, which is governed by the globalization of production.

Chapter 3 reviews the role of services in different industries through case studies. It shows the pervasive use of services by firms, whether they are in the manufacturing, agriculture or services sectors, throughout the value chain. Policies affecting access or provision of these services affect the competitiveness of firms. Policy issues reviewed include investment restrictions on services, labour rules, localization and technology transfer, and burdensome domestic regulations. In promoting specific industries – for example, in manufacturing or agriculture – policymakers would benefit from having a value chain perspective that enables them to appreciate the important role of services in achieving the development objectives.

Chapter 4 provides an overview of policy issues related to trade in services. It begins by listing the factors that result in services trade still being seen and treated differently compared to goods trade. This differentiation is useful in framing a discussion of the features of barriers used in services trade. The latter half of the chapter is devoted to a discussion on how to manage and lessen the impediments on services trade. The chapter provides a review of services trade liberalization efforts at the multilateral (General Agreement on Trade in Services), plurilateral (Trade in Services Agreement and other preferential trade liberalization efforts) and unilateral levels. It concludes with some key messages from the discussions and empirical data.

The evidence and findings presented in this publication are meant to inform policymakers and other relevant stakeholders about impacts of services barriers and the possible impacts of their removal. It aims to assist policymakers in identifying priorities in policies for countries in the region, particularly those already participating in GVC-linked trade. It should also help policymakers considering enhanced participation in GVCs as a strategy for economic diversification and improving resilience for their economies while implementing the 2030 Agenda for Sustainable Development. Least developed countries committed to graduation will find illustrative examples and other countries experiences about the role of services trade in developing and deepening participation in GVCs.

The importance of services requires a comprehensive approach to policy formulation. While liberalizing trade in goods is a starting point for seeking new trade opportunities, the value chain of industrial goods requires efficient services. Improvements in the performance of the service sectors, including by liberalization of services trade, would thereby enhance the competitiveness of manufacturing firms and facilitate their participation in

global production networks. In contrast, restricted service trade and rigid regulation, often found among some of the fastest-growing economies in the region such as China, India, Indonesia, Malaysia, the Philippines and Thailand, could translate into a negative effect on exports of goods.

However, as imported services become an increasingly essential element of internationalized production, governments will come under more pressure to create a balance between assisting domestic service providers and promoting the competitiveness of manufacturing exports in GVCs. There is also a risk that too much reliance on imported intermediate services and goods may lead to limited development spillovers from GVCs to the rest of the economy.

The general direction of service trade policy at the national level should then focus on creating competitive market conditions and developing well-functioning domestic service sectors that meet high regulatory standards. Measures will have to vary from sector to sector. For example, ensuring access to the network or grid for new entrants in the telecommunications or electricity sectors should help in creating a level playing field, and result in pro-competitive efficiency gains. The openness of financial services with a solid regulatory framework could enhance competition and stability of financial sector and contribute to macroeconomic stability. In addition, it is important to have a comprehensive set of policies in place to encourage spillovers and technological diffusion from foreign to domestic providers. This may include, for example, public investment in upgrading and improving accessibility to backbone hard and soft infrastructure such as railways, ports, health care and education. The provision of education and training (for example, in ICT, languages and professional skills) as well as freer within-the-country and across-the-border labour mobility, which will enable domestic firms as well as individuals to take advantage of service-export opportunities.

A regional initiative is needed for prioritizing cooperation in regulatory reforms. International and regional organizations such ESCAP can play a role in supporting governments in the region by launching a regional initiative for all-of-services best practice regulation. Regulatory reforms should cover all modes of delivery. ESCAP can act as a regional platform for bringing services regulators together with trade officials, both sector-by-sector and at the whole service level, to: (a) identify the barriers to liberalization in services; (b) share regulatory experiences; (c) raise awareness of regulatory incoherence; (d) consider options for improving regional practice; and (e) benchmark the progress of regional integration in services.

Research and capacity-building work by international organizations will contribute to deepening understanding of the role of services in GVCs as well as the value for the manufacturing sector of reforming services regulation. Networks such as the Asia-Pacific Research and Training Network on Trade (ARTNeT) play a very important role in generating locally sourced research and making it accessible to policymakers, other analysists and stakeholders. The dialogues and consultations organized by ARTNeT enable sharing of national experiences and lessons, which are then synthesized and incorporated into normative and analytical work carried out at the regional level by ESCAP. During the 12 years of its operations, ARTNeT has contributed to strengthening research capacity in developing and least developed countries in the region by providing technical training for applied analysis in area of trade policy, trade facilitation and investment. Collaboration between ARTNeT and other networks – for example, the ESCAP Sustainable Business Network, FDI Network or United Nations Network of Experts for Paperless Trade and Transport (UNNExT), will further improve and expand capacity-building oriented towards promoting investment, innovation and export by SMEs in the services sector.

ESCAP, together with relevant international and regional organizations, is also committed to improving the availability of the official statistics on services production, employment, productivity, trade and investment to ensure that services sectors and services trade become a reliable engine of sustainable development for the countries in the Asia-Pacific region.

Chapter 1

The roles of services in international trade and Global Value Chains: A conceptual framework

This chapter discusses the important roles of services in the Global Value Chains (GVCs). It highlights the fact that, similarly for goods, the roles of services in GVCs are critical inputs to GVCs as well as constituting GVCs in their own right. In addition, international fragmentation can occur in the value chain of services, just like goods. The globalization of production in the services industry began around the middle of the 1990s, about 20 years after it had begun in the manufacturing sector (Stephenson, 2012). Similar to the manufacturing sector, new technologies – especially information technology and telecommunications – have allowed the production of service components to be disseminated to different parts of the world. However, despite several similarities, services have distinct characteristics from goods. They are not just inputs but also the glue that holds value chains together. In addition, services differ from goods in how they are transacted and delivered, how they are linked with the rest of domestic economy, how they are regulated, how international cooperation can contribute to integration of national markets, or how they are measured. Therefore, services deserve special attention in a discussion about GVCs.

The internationalization of production in the services industry led to greater economic efficiency and cost reduction of services providers. Services that previously had to be performed within the firms can now be outsourced to cheaper providers nationally or offshored to countries that provide labour with appropriate skills at low costs (Ghani and others, 2011). Outsourcing call-centre tasks to contractors in India is an example of this development. The increasingly disaggregated services production process leads to deepening the specialization of services firms that seek opportunities to move upwards in the value chain and outsource non-core activities, in much the same way as done by manufacturing companies.

However, it is still difficult to measure the value of services in GVCs. The contribution of services such as communications, insurance, finance, transport and distribution services, to GVC trade were rarely accounted for, especially if these services were sourced from domestic firms. Unless measuring the traded value based on a value-added approach is possible, the contribution of services in international trade and GVCs are poorly

captured. Trade in value-added statistics still cannot capture inputs sourced within the firm. Thus, the total contribution of service inputs is still generally underestimated in country-level datasets.

This chapter conceptualizes the role of services in GVCs and highlights problems that exist when assessing the importance of that role. It starts with introducing related terminologies, and discussing how services play roles in GVCs as inputs and final products. The second section examines factors behind the growing roles of services in GVCs. It highlights three major factors: (a) the growing geographical dispersion of production process; (b) the impacts of technological progress; and (c) the increasing economic liberalization during past decades. The third section introduces the challenges faced in measuring the contribution of services in GVCs.

1.1. Terminologies related to services in Global Value Chains

A number of terminologies are used for describing the roles of services in value chains. The terms "embodied" and "embedded" services distinguish service inputs at different stages of value addition. Embodied services are inputs adding value during the production of other goods and services, while embedded services are inputs adding value during the post-production process (Stephenson and Drake-Brockman, 2014). Leasing, maintenance and repairs, marketing services, and wholesale and retail services are examples of embedded services. They add value to the value chain at the point of merchandise sale. Some services can be both embodied and embedded services, because they are used at many stages of the value addition process. For example, transportation services used for bringing parts and components to the assembly lines are embodied services, while they are embedded services when they are used for delivering the final products to buyers.

The terms "producer services" and "consumer services" are used for distinguishing whether the services are meant to be inputs or final products. According to the Organisation for Economic Co-operation and Development (OECD), services that are sold to other firms are called producer services. The term "producer services" can be used interchangeably with "intermediate services", which mean services inputs to further production activities. In contrast, the term "consumer services" has the same meaning as "final or end-use services", which are services directly used by consumers. It is often the case that services play multiple roles. For example, banking services include both consumer banking and corporate banking services.

A producer of services is called “service provider”. However, it seems the distinction between service producers and manufacturers are increasingly unclear. There is a growing evidence that manufacturers, especially in OECD countries, increasingly buys, produces, sells and exports services. This is now known as the “servicification” or “servitization of the manufacturing sector (ESCAP, 2015). Servicification takes diverse forms. For example, car makers may also provide financial and insurance services, roadside assistance, repairs and maintenance services, and GPS capabilities through IT-enabled vehicles. In a Swedish case study, services represent 24 per cent of total output or production value in the Swedish motor vehicle sector (Kommerskollegium, 2012). The Swedish machine tool firm Sandvik Tooling makes use of more than 40 different types of services in the various production and sales stages, from developing, producing to marketing its product. Out of those services, Sandvik supplies about 15 services itself. Chapter 3 provides further details by providing examples of servicification in Asia-Pacific manufacturing industries.

1.2. The roles of services in Global Value Chains

The numerous terminologies for services feature the multiple roles of services in the value-addition process. Services are an important input in the production process of goods and other services. The roles of services in the production of goods are not new, but they received particular attention during recent decades when there was a proliferation of manufacturing GVCs, which require efficient services to facilitate their global operations. In addition, services can also be final products that have their own GVCs. The services GVCs are relatively new phenomenon. The offshoring phenomenon occurs with specific services, such as call-centre services, back-office and data processing services, due to the advancement of Internet technology. The growing disaggregation of the service production process and trading as separated tasks has been followed by the expansion of cross-border trade in services. The emergence of service GVCs has increased the opportunities for developing countries to participate in GVCs, not only in manufacturing GVCs but also in services GVCs, and to specialize internationally in services tasks.

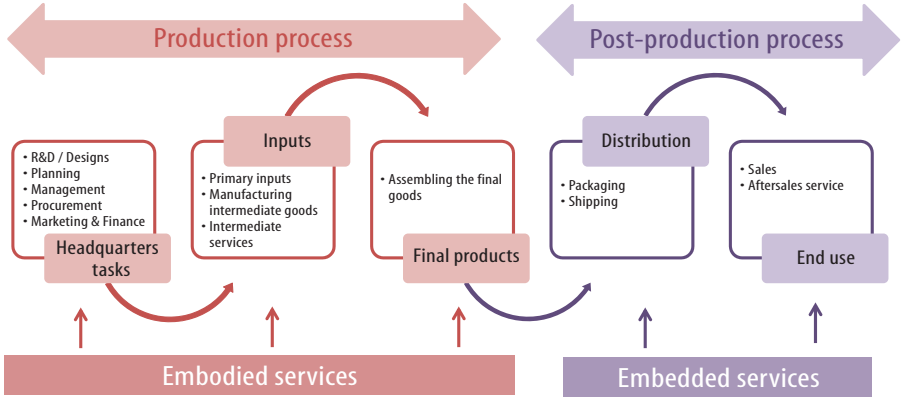
1.2.1. Services are an important input in Global Value Chains

The numerous services are involved in the production and sale of products, whether the final product is a good or a service. Managing international supply chains require services such as communication services, transport and logistic services to link geographically dispersed activities. The increased internationalization of production has intensified reliance on

services input. The intense competition in GVCs requires the cost efficiency, just-in-time-delivery, quality assurance, and quick adjustment in respond to short product life cycles. Manufacturers increasingly provide post-sale services to build brand royalty and differentiate their products from those of competitors. Services are also critical for upgrading the quality of products. Knowledge-intensive services such as designs, engineering and R&D services, are intangible assets which enhance productivity and value-added by a firm who owns the assets. Thus, these knowledge-intensive services tend to be core business functions of multinational firms owning GVCs in high-technology and high-quality products.

Demand for service input occurs at every stage of a value chain. Figure 1.1 illustrates where the embodied and embedded services take place in a simplified value chain of goods. Embodied services such as transport and communications services are used as an input to production. Embedded services such as maintenance, repairs, training, and recycling services inputs are used in the post-production process. For many consumption goods, the combination of goods and embedded services has become a method of differentiating goods in the market and a key method for reaching a generally higher value-added. In Asia and the Pacific, services input added 30 per cent to the value of industrial exports by the region in 2011 (Anukoonwattaka and others, 2015). Adding services to manufacturing products has become an important strategy for manufacturing firms to differentiate their products in the presence of fierce foreign competition (Lodefalk, 2013).

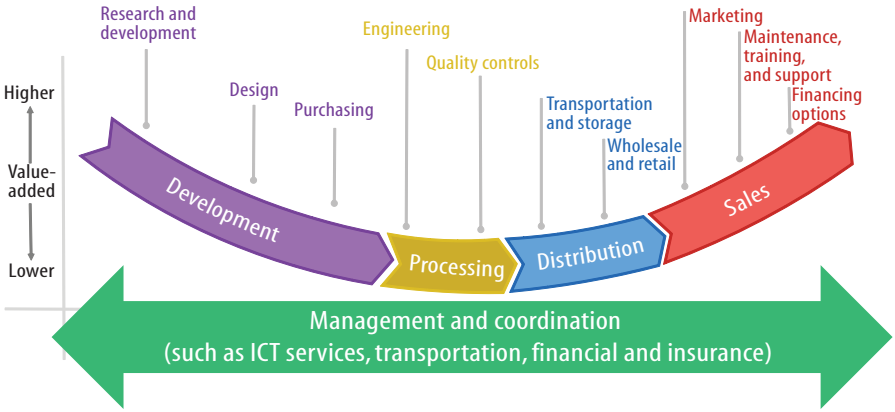
Figure 1.1. Embodied and embedded services in a simplified representation of a value chain



Source: ESCAP.

Looking closer at services required in different stages of production shows that the four major stages of value addition, including development, processing, distribution and sales, require different services with different value-added levels (figure 1.2). The development stage generally requires high value-added services such as R&D, and design to generate product conception and innovation. They may help decrease the cost of production, reduce the risks of business failure, generate new business opportunities, and shorten the product development cycle. Thus, these services activities are strategic tasks within a GVC and are often operated by a GVC-lead firm itself.

Figure 1.2. Service inputs in the value addition process



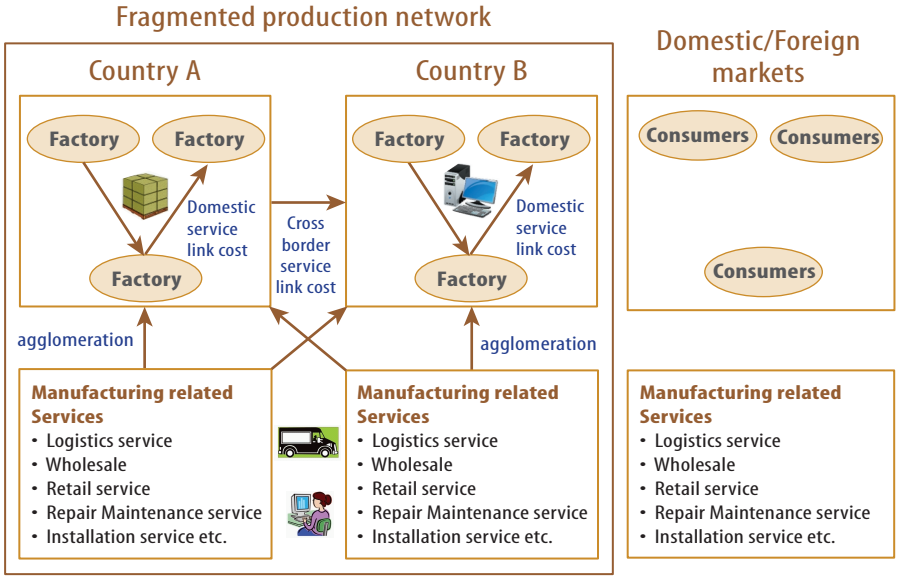
Source: ESCAP adaptation from the Conference Board of Canada, 2015.

Services associated with the processing and distribution stages tend to be lower value-added than services in the development stage. Examples include purchasing services, logistics and transport services facilitating the international sourcing of intermediate inputs. Value-added by these services tend to be lower than value-added by services upstream of the value chains.

At the sales stage, a variety of services add significant value to the final products. Services associated with bringing products to markets (e.g., trading and marketing), taking aftersales care of customers (e.g., customer support and maintenance) and, increasingly, even after use of the final products (e.g., waste and recycling). Some services are required at many stages to coordinate and link activities along the value chain. Examples include communications, financial, IT and legal services.

Although infrastructure services, such as transport, communications and logistics appear to be low value-added inputs in the production process, they are critical to the existence of GVCs. Such services have made it possible to fragment and coordinate production globally. The increasing geographic dispersion of supply chains with specialization, and the need to cut costs and improve efficiency of the whole supply chain have resulted in efficient logistics and distribution services becoming more in demand than ever (figure 1.3). Efficiency of logistics and distribution services determine service link costs, which are the cost of connecting production activities in different countries.

Figure 1.3. Manufacturing-related services in Global Value Chains



Source: Shino, 2015.

Therefore, the quality and availability of low cost services such as finance, communications, transport, and professional and other business services are critical for firms and countries participating in the GVCs of goods and services. Evidence suggests that the quality of these services can increase total factor productivity and can cause shifts in the pattern of comparative advantage (Hauser and Mattoo, 2017). These services enable firms to invest in new business opportunities and better production technology, exploit economies of scale by concentrating production in fewer locations, efficiently manage inventories, and make coordinated decisions with their suppliers and customers.

1.2.2. Services as a creator of Global Value Chains

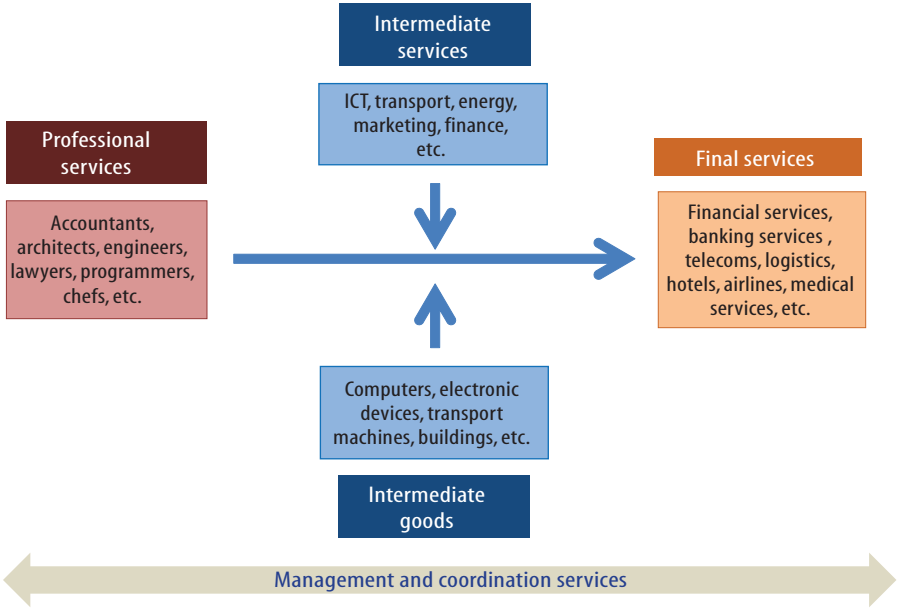
Although there is evidence that the services sector is made up of domestic service inputs more than foreign inputs, it would be wrong to assume that services do not have GVCs. The offshoring of the business services sector is an example of the international fragmentation of production that takes place in the services sector.

In services value chains the service providers source some of their inputs internationally. For example, financial services providers can outsource and offshore their back-office data-management and analytical tasks. Offshoring is increasingly common due to the advancement of IT technology and application. The offshore services mainly include information technology services, knowledge process services and business process services. In Asia and the Pacific, computer services, information services and telecommunications services doubled their shares in total service exports from 2006 to 2016 (ESCAP, 2017). Global operation has also occurred in health services, legal services, financial services and tourism services during the past two decades.

In service GVCs, services are the final product that integrate inputs from other services or manufacturing inputs. For example, in the production of banking services; professional services such as accountancy services and legal services; these services are inputs while computers and other electronic devices are non-service inputs. While the production processes of goods are often demonstrated as a linear value chain, value creation in services value chains often occurs as a network of activities. In such cases, inputs come together to add value simultaneously while forming a final product.

A simplified description of this process is shown in figure 1.4. Skilled workers from different professional services are primary inputs of services value chains. Intermediate inputs are the use of telecommunications and transport services and equipment during the services delivery. Management and coordination services coordinate activities throughout the value chains. At the end of the process, users consume final products, such as banking services, hotel and hospitality services, which combine all the value-added by primary and intermediate inputs from services and non-services sectors.

Figure 1.4. A generic illustration of services value chains



Source: ESCAP.

1.3. Factors behind the evolution of services in Global Value Chains

Because the increasing role of services and the expansion of GVCs are interlinked, it is not possible to separate the drivers of GVCs in general from those with a specific impact on services employed in GVCs. Factors behind the development of GVCs are generally those that contribute to a decline in trade costs, i.e., trade liberalization and the technological advancement of communications, logistics, shipping and transport. Declining trade costs allow a GVC-lead firm to fragment production internationally. By locating different functions in the value chain in different countries, the firm can maximize cost efficiency. This section discusses how services correspond to three important factors behind the evolution of service role in GVCs – geographical dispersion of value chains, technological changes, and economic liberalization.

1.3.1. Geographical dispersion of value chains

The operation of GVCs is highly dependent on the availability of efficient services at low cost. In GVCs, tasks in value chains are internationally fragmented. Services such as ICT and logistics, to link different functions in different locations are vital (ESCAP, 2011). Additionally, the just-in-time supply chain management, which has become a core element of manufacturing GVC operation, is highly dependent on the increased speed

and reliability of transportation services because time is a relevant competitive factor for doing business in GVCs. Similarly, effective logistics and trade facilitation services have a positive effect on trade and the probability of entering an international supply chain (Nordås, 2006). While the availability of efficient services is always beneficial for trade in general, the rapid growing of GVC-related trade during the past two decades has made the availability of efficient services more vital than before.

1.3.2. Technological changes

Among many factors responsible for driving up the role of services in GVCs, technological change is instrumental. The advancement of information and communications technology (ICT) is particularly important. The Internet as well as telecommunications technology are changing business models of services from the face-to-face model to operating and transmitting via the Internet and satellite networks. As a result, some tasks of financial, computer and information services and other commercial and business services have increasingly moved offshore, and in turn, are being traded internationally. One example is the steady increase of business process outsourcing (BPO) from advanced economies to emerging economies such as India and the Philippines. In the context of GVCs, the increasing possibility for offshoring contributed by ICT progress helps in shifting the scope of services value chains from domestic to international domains.

In addition to ICT progress, the technological revolutions in fields such as nanotechnology, material science, 3-D printing, robotics, automation and the "Internet of Things" have necessitated global manufacturing firms to demand more services inputs. First, there is greater demand for scientific, engineering and technical services to perform skilled-intensive tasks, including R&D, software development, machine maintenance and training. Second, adopting the "lean manufacturing" paradigm requires manufacturing companies to spend their resources in the development of software and ICT services for tracking parts and inventories, coordinating with suppliers, tracking orders etc. Third, digitized commerce has become a major platform of global trade and an important element of global sourcing. The rapid growth of digitized commerce increases demand for ICT, logistics, and financial services. Fourth, using "Big Data" technologies is becoming increasingly common for managing GVCs. Utilizing Big Data technologies requires a range of information services for gathering and interpreting large information datasets such as software programming, data processing, mathematical modelling, and data storage and retrieval. Although services in GVCs have already been significantly affected by these technological developments, it seems certain the impacts will become even more pronounced as these technologies mature.

1.3.3. Economic and trade liberalization

The fall of political and economic barriers has been an important driver of GVCs. Currently, the GVC phenomenon is organized around three major regional blocs (Europe, Asia and North America). The political and economic liberalization in those regions has provided a supportive environment for the growth of regional value chains that are nested within the global production network. GVC-related trade appears to be supported by a combination of deep regional trade agreements (RTAs), bilateral investment treaties (BITs) and unilateral reforms by developing countries (Baldwin, 2012). In Europe, following the accession of Central and Eastern European countries to the European Union, both the volume and of intra-European Union trade and the complexity of regional value chains increased (Behar and Freund, 2011). In North America, there was a substantial increase in cross-border trade and foreign direct investment (FDI) flows and a deepening of production sharing after the North American Free Trade Area (NAFTA) (Gruben, 2001). In Asia, the production and trade networks in East Asia grew rapidly after the accession of China to WTO in 2001 (Escaith and Inomata, 2011). In addition, several regional trading agreements among Asian countries have facilitated regional integration and the development of GVCs in the region. One of the more important trade agreements in the region is the Association of Southeast Asian Nations Free Trade Area (ASEAN/AFTA) (ESCAP, 2013). This agreement has boosted the number of United States firms investing in AFTA members as well as the size and sales of the affiliates within AFTA markets (Antràs and Foley, 2011). While this does not indicate a direct connection between RTAs and GVCs, it does illustrate that decreasing political and economic barriers help to enhance FDI and contribute to accentuate GVCs.

However, the past four decades of trade liberalization negotiations have tended to focus on lowering or eliminating border tariffs. The challenge of identifying, measuring and lowering barriers to trade in services has barely begun (Amador and Cabral, 2014). Identifying barriers to cross-border flows of services is much harder than it is for goods. This is because these barriers can take various forms and are often related to domestic regulations. For example, various restrictions can affect cross-border flows of services. These include: (a) restrictions on the Internet and data flows can form barriers to mode 1; (b) restrictions on purchases that residents can make when travelling offshore can affect mode 2; (c) licensing regimes can impede commercial presence (mode 3); and (d) occupational licences can block inwards movement of natural persons (mode 4).

In addition, domestic governance such as discretionary authority and non-transparency can also become “behind-the-border” barriers. Departure from

commonly accepted international or regional regulatory practices can also constitute barriers to doing international business in services. The lack of intellectual property protection may also discourage firms from investing in research and development that can contribute to innovation, productivity and the competitiveness of services in GVCs. Liberalizing services trade would allow further development of manufacturing and services GVCs. To facilitate services trade, investment and the operation of GVCs, liberalization should include domestic and regulatory reforms.

1.4. Measuring the role of services in Global Value Chains

While trade in services is an important element of GVCs and global trade in general, trade in services receives less attribution than trade in goods. A possible explanation may be that trade in goods accounts for a much larger share than trade in services. The share of services trade seems to be less than a quarter of global trade. There was a perception that services were non-tradable, because services in general demand face-to-face interaction between providers and users.

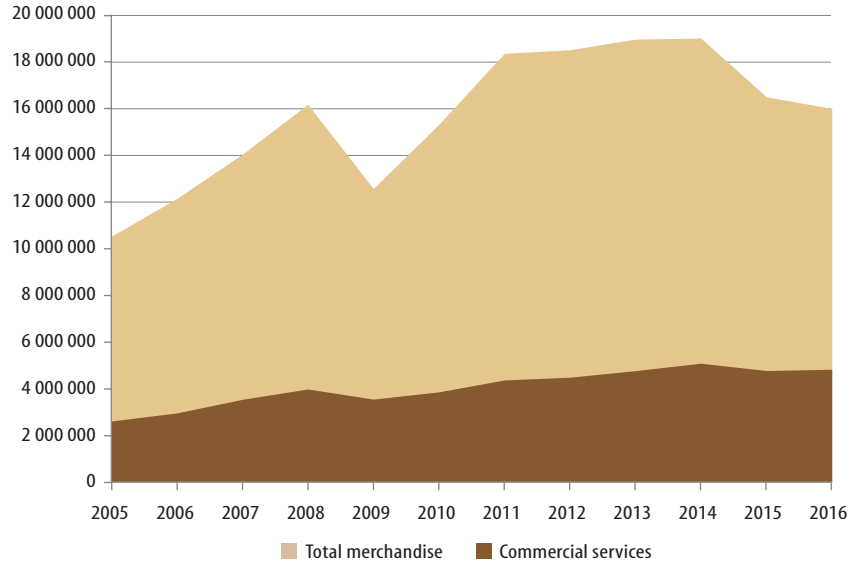
However, the old concept that services are non-tradable and not relevant to GVCs is now obsolete. The technological advancements in telecommunications, the Internet and transportation have increased the tradability of some services in recent years (Jensen and others, 2005). The number of services that can be transported digitally is expanding. Examples include: (a) processing insurance claims; (b) call centres; (c) compiling audits; (d) completing tax returns; and (e) transcribing medical records.

As a result of the growing number of tradable services, services trade is tending to grow more resilient than trade in goods. The growth of global services exports has outpaced the growth of goods exports since 2005. The share of services in global exports then increased from 19 per cent in 2005 to 23 per cent in 2016. Figure 1.5 illustrates that services trade volume is relatively small but growing constantly. From 2005 to 2016, commercial services exports grew by an annual rate of about 6 per cent, whereas merchandise exports expanded by only 4 per cent per annum.

Trade in services in the Asia-Pacific region grew faster than that of the world. The world annual growth rates were 6.3 per cent for exports and 6.5 per cent for imports from 2005 to 2016. Meanwhile, the region's exports of commercial services expanded by 8.2 per cent per year while the imports increased by 8.5 per cent. The dynamic growth of services trade has led to the rising shares of services in the region's total trade from 14 per cent to 17 per cent of exports and from 17 per cent to 21 per cent of imports.

Figure 1.5. Global export value of goods and services from 2005 to 2016

(million United States dollars)



Source: ESCAP based on WTO data.

In addition, the value of trade in services remains underestimated due to measurement problems in services trade statistics. For example, service trade data (figure 1.5) based on the Balance of Payments (BOP) system do not fully capture the total value of services trade.[1] While WTO defines the four modes of services trade (box 1.1), the BOP system of services trade statistics captures mainly services trade under mode 1 (Cernat and Kutlina-Dimitrova, 2014). Mode 2 service trade is captured only partly in the balance of payments statistics category "travel" but with limited disaggregation into sectors. Sales of services by foreign natural persons are largely covered in BOP statistics but are not identified separately from cross-border trade (Hauser and Mattoo, 2017). Mode 3 trade in services is not part of balance of payments statistics but is collected separately in so-called Foreign Affiliates Statistics (FATS) by some countries, such as the United States and the European Union. Empirical research suggests that mode 3 transactions may account for at least 50 per cent of the total cross-border services supply (Drake-Brockman and Stephenson, 2011). Therefore, the value of global services exports may be biased downward by 50 per cent.[2] Such problems matter for measuring GVCs involving imported

[1] Chapter 2 discusses the issues related to measuring value of services trade.

[2] A pilot study on extra-European Union trade found that mode 3 accounted for 69 per cent of services trade between European Union and the rest of the world in 2013, followed by mode 1 (cross-border trade) at 21 per cent while mode 2 (consumption abroad) and mode 4 (presence of natural persons) accounted only 6 per cent and 4 per cent, respectively (Eurostat, 2016).

Box 1.1. WTO's four modes of services trade supply

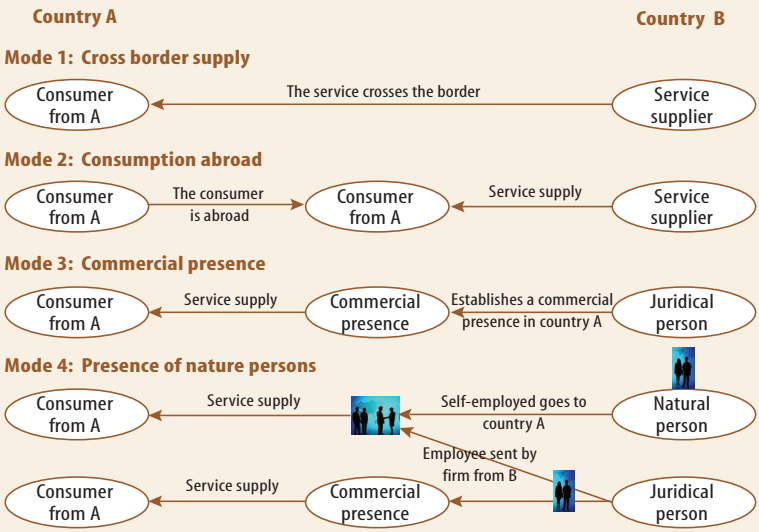
The General Agreement on Trade in Services (GATS) defines four modes of delivery as illustrated in the figure below:

Mode 1 is cross-border supply. It covers the flows of services that are produced in one country and delivered to a consumer in another country, using a telecommunications or postal infrastructure. The supplier and consumer remain in their respective countries, while the service crosses the border. Examples include films and music mailed as CDs or streamed online, architectural designs send by e-mail or by post; tele-medical advice or distance training.

Mode 2 is consumption abroad. It refers to situations where a service consumer travels to another country to obtain a service. Examples include a student travelling to another country to attend training, a tourist from one country staying in a hotel in another country or a ship sent for a repair in another country.

Mode 3 is commercial presence. It implies that a service supplier of one country establishes a subsidiary or authorized agency (a representative office) in another country to provide a service. For example, a foreign bank establishes a subsidiary to sell services to clients in a host country, or a construction firm in one country establishes a subsidiary in another country to sell construction services to local clients.

Mode 4 is the temporary presence of natural persons. It refers to foreign nationals providing a service within one country as an independent supplier (e.g., a consultant) or an employee of a service supplier (e.g., consultancy firm). The presence should be of a temporary duration, which is not well-defined. Examples include a computer programmer from one country travelling to another country to provide training.



Source: ESCAP based on GATS text and WTO Secretariat training materials.

services inputs because imported services are not only transactions crossing borders, but also transactions within countries between national and foreign entities.

In addition, a problem in measuring the contribution of services in a country's trade comes from the interdependencies between manufacturing and services. Services input to manufacturing production can come either from domestic sourcing or international sourcing. In the case of domestic sourcing, there will be no cross-border services trade. However, there might still be services trade in the form of mode 3, if the manufacturing firm sources the required services inputs locally from a commercial presence of a foreign company. There is also a problem when the firm imports services from abroad to use in its manufacturing process and subsequently export the goods failing to record re-exportation of embedded services. Thus, the domestic or imported services inputs embodied in the exported good are exported indirectly only.

Merchandise trade statistics which is based on gross value of traded goods and does not attribute export value to the services inputs, cannot capture this indirect trade in intermediate services. Because these services are indirectly traded, services trade statistics also do not register these transactions. Unless researchers use new statistics based on input-output analysis such as the OECD-WTO Trade in Value-added (TiVA) database, they will not be able to account for the indirect trade of services.[3] Taking into account the value of services inputs causes the share of services to increase from 22 per cent of gross exports to at least 40 per cent of value-added exports (Low, 2013; Lanz and Maurer, 2015). However, problems remain when services inputs are supplied in-house, because value-added analysis does not capture their contribution to GVCs.

To better capture the international services fragmentation, advances in statistics by enterprise characteristics and by mode of supply, i.e., taking into account the movement of labour and capital, are required. The

[3] The latest version of OECD-WTO TiVA database released in October 2015 includes data for 1995, 2000, 2005, 2008, 2009 and 2015. The database covers 61 individual economies and a group representing the rest of the world. Seventeen economies are taken as a representative sample of Asia-Pacific region in this study. These include Australia, Brunei Darussalam, Cambodia, China, India, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, the Philippines, Russian Federation, Singapore, Thailand, Viet Nam, Hong Kong, China, and Taiwan Province of China. All these economies, except Taiwan Province of China, are ESCAP member States. In 2015, these economies accounted for 97 per cent of total merchandise exports and 94 per cent of service exports by the whole Asia-Pacific region. The current version of the OECD-WTO TiVA database covers 34 industries classified according to OECD's Inter-Country Input-Output (ICIO). The service sector in this study includes the 16 ICIO industries – construction, wholesale and retail trade, repairs, hotels and restaurants, transport and storage, post and telecommunications, finance and insurance, real estate activities, renting of machinery and equipment, computer and related activities, R&D, public administration, education, health and social work, other community services and private households with employed persons.

separation between final and intermediate services is also difficult, because the measuring requires firm-level data on services sales by type of user. For example, financial services are a final service if the buyer is a consumer, but they are intermediate services for corporate buyers. Such data are not available, especially at the cross-country level.

While services appear to be an area with high potential for trade growth, trade in services remains below its potential because of extensive trade restrictions in various forms. For example, licensing, foreign equity limitations and lack of internet security may impede trade in financial services. Discriminations in access to government procurement is an important barrier for trade in construction services. National treatment in relation to taxes and subsidies can affect trade in transport services. Restrictions on the movement of natural persons can hinder trade in professional services. The lack of intellectual property rights protection may discourage trade in knowledge-based services such as design, innovation and R&D.

1.5. Key points of the chapter

The neglect of empirical research on services trade is remarkable despite the fact that services clearly constitute a large share of GDP and are now a robust growth component of global trade. Part of the problem is the quality of services-related statistics. The balance of payment system, which gives official statistics on cross-border movements of services, does not capture every mode of service traded. In addition, the importance of services is also underestimated because official trade statistics only report the gross value of traded products. The value includes the contribution of all inputs including services. However, merchandise trade statistics do not attribute services contribution to the value of traded goods.

Despite these statistical limitations, services have received considerable public attention in the twenty-first century trade environment. This chapter highlights the two important roles played by services in GVCs. One is the role of inputs to GVCs, and the other is the role of creating GVCs in their own right. Services have contributed significantly to the growth of global trade through direct and/or indirect effects, depending on the services industry. In the future, three major factors will shape the pattern of service trade and the globalized production scenario. These include the future of GVC phenomenon, the improvement of information and communications technology, and the development of economic liberalization disciplines.

While the direct contribution of services to global trade is about 20 per cent, research results based on trade in value-added show that the contribution

may be as high as 40 per cent when indirect contribution is also included. This large difference highlights the significant contribution of services to merchandise export value. The estimation also shows that services attribute about 30 per cent of the value of merchandise exports.

The important roles of services imply that policy restrictions that inhibit the efficiency of service sectors can have detrimental impacts on GVCs in goods. Restrictions on services can either block the emergence of GVCs involving services or increase the associated transaction costs. The interdependence between the production of goods and services means that enabling international fragmentation of production in goods and services need an integrated regulatory framework. Any policy formulation corresponding to the new trade environment should not neglect the linkages among sectors.

The integrated policy approach requires better understanding about the roles of services in the new trade environment. Research needs to revisit the manufacturing services distinction, and to re-examine the link between services and other sectors in a more disaggregated manner. By understanding the roles of services in GVCs, countries can seize the opportunity to participate in GVCs and reap the benefits of integration into the global production networks.

References

Amador, J. and S. Cabral (2014). Global value chains surveying drivers and measures. European Central Bank Working Paper No. 1739, October.

Amiti, M. and S-J. Wei (2005). Fear of service outsourcing: Is it justified? *Economic Policy* 20, (42), pp. 308-347.

Anukoonwattaka, W. M. Scagliusi and M. Mikic (2015). Servicification and industrial exports from Asia and the Pacific. Trade Insights, No.10, May, Bangkok, ESCAP.

Antràs, P., D. Chor, T. Fally and R. Hillberry (2012). Measuring the upstreamness of production and trade flows, *American Economic Review*, 102(3), pp. 412-416.

Antràs, P. and F. Foley (2011), Regional Trade Integration and Multinational Firm Strategies, in R. Barro and J.-W. Lee (eds.), *Costs and Benefits of Economic Integration in Asia,* Cambridge University Press, Cambridge, UK.

Baldwin, R. (2012). WTO 2.0: Global governance of supply-chain trade, CEPR Policy Insight 64. Centre for Economic Policy Research. London.

Behar, A. and C. Freund (2011). Factory Europe? Brainier but not brawnier, FREIT Working Paper No. 312. Forum for Research in Empirical International Trade.

Cernat, L. and Z. Kutlina-Dimitrova (2014). Thinking in a box: A 'Mode 5' approach to service trade, EUROPA Chief Economist Note, 1/2014. European Commission, Brussels and Luxembourg.

Conference Board of Canada (2015). Good service is good business: How services add value to Canadian goods exports. September. Conference Board of Canada, Ottawa.

Drake-Brockman, J. (2011). The importance of measuring the delivery of services via commercial presence of offshore foreign affiliates: Some case studies from Australian business experience, ADBI Working Paper No. 295, Asian Development Bank Institute, Tokyo.

Escaith, H. and S. Inomata (eds.) (2011). Trade Patterns and Global Value Chains in East Asia: From Trade in Goods to Trade in Tasks, World Trade Organization, Geneva, and Institute of Developing Economies, Chiba, Japan.

ESCAP (2017). Commercial services trade: a mild rebound, in *Asia-Pacific Trade and Investment Report 2017: Channeling trade and investment into sustainable development*, Bangkok: United Nations Economic and Social Commission for Asia and the Pacific.

_____ (2015). *Asia-Pacific Trade and Investment Report 2015: Supporting participation in value chains*, chapter 8, Bangkok: United Nations Economic and Social Commission for Asia and the Pacific.

_____ (2013). *Expansion of Global Value Chains in Asian Developing Countries: Automotive Case Study in the Mekong Subregion*, chapter 2, Bangkok: United Nations Economic and Social Commission for Asia and the Pacific.

_____ (2011). *Enabling Environment for the Successful Integration of Small and Medium-sized Enterprises in Global Value Chains: Country Studies of Bangladesh, Nepal and Sri Lanka*, chapter 1, Bangkok: United Nations Economic and Social Commission for Asia and the Pacific.

Eurostat (2016). Services trade statistics by modes of supply. European Statistics, European Commission.

Ghani, E., A. Grover and H. Kharas (2011). Can services be the next growth escalator? Vox, 12 December 2011. Available at http://www.voxeu.org/article/can-services-be-next-growth-escalator.

Gruben, W.C. (2001). Was NAFTA behind Mexico's high maquiladora growth? *Federal Reserve Bank of Dallas Economic and Financial Policy Review*, third quarter, pp. 11-21.

Hauser, C. and A. Mattoo (2017). Services trade and global value chains, *Global Value Chain Development Report 2017* (chapter 6), pp.141-158.

Jensen, J.B., L.G. Kletzer, J. Bernstein and R.C. Feenstra (2005). Tradable services: Understanding the scope and impact of services offshoring. *Brookings Trade Forum*, pp. 75-133.

Kommerskollegium (2012). Everybody is in Services – The Impact of Servicification in Manufacturing on Trade and Trade Policy. Stockholm, National Board of Trade.

Lodefalk, M. (2013), Servicification of Manufacturing—Evidence from Sweden, *International Journal of Economics and Business Research*, 6(1), 87-113.

Nordås, H. K. (2006), Time as a trade barrier: Implications for low-income countries, *OECD Economic Studies 2006,* pp.137-167.

Shino, K. (2015). How manufacturing-related services contribute to trade in goods? Focusing on distribution/logistics services. Presentation at PECC-ABAC-APEC PPD on Services, Boracay. Available at https://www.pecc.org/resources/trade-and-investment-1/2222-how-manufacturing-related-services-contribute-to-trade-in-goods/file.

Stephenson, S. (2012). Emergence of services, Global Value Chains (GVCs) and resulting implications for Latin America. II Inter-American dialogue of high-level MSME authorities' public policies to enhance the competitiveness, innovation and internationalization of MSMEs. 10-11 September 2012. New Orleans, The Organization of American States (OAS).

Stephenson, S. and J. Drake-Brockman (2014). The services trade dimension of global value chains: Policy implications for Commonwealth developing countries and small States. Commonwealth Trade Policy Discussion Papers, 2014/04.

Chapter 2
Services in Global Value Chains: Evidence from the Asia-Pacific region

2.1. Asia and the Pacific in global services trade: General trends and patterns

Services are the dynamic trading sector of Asia and the Pacific as well as the rest of the world. The services sector represents an increasing share of global and regional exports. The share of commercial services in global exports increased from 15 per cent in 1980 to 23 per cent in 2016. The Asia-Pacific region followed the same pattern of the rising share of services in total exports, up from 13 per cent to 17 per cent during the same period. However, as mentioned in chapter 1, statistical limitations tend to cause the underestimation of the actual contribution of services in international trade.

The dynamic growth of trade in services by Asia and the Pacific is an important reason for the growing role of the services sector. Although the share of the Asia-Pacific services sector in global exports is still less than the share of Europe, the gap is slowly decreasing (figure 2.1). From 2005 to 2016, the Asia-Pacific region was the only region whose shares in global exports of commercial services increased steadily from 20 per cent to 26.5 per cent. The rise was due to services exports by the region growing faster than exports by other economic regions.

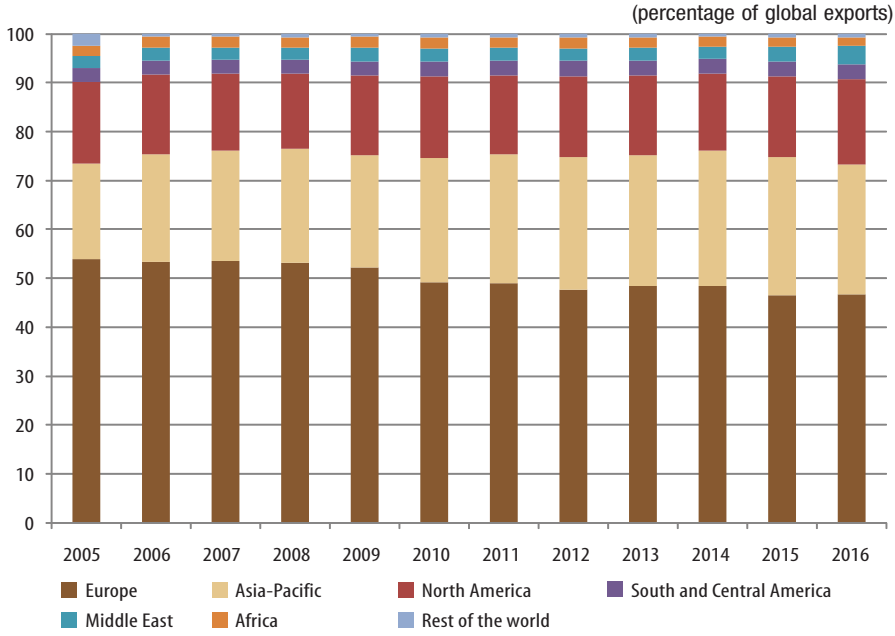
Although the Asia-Pacific region has increased its importance in world services exports, the region is still a net importer of services. In 2016, the region registered net imports of $234 billion. The region's services imports represented 32 per cent of world imports. China alone represents more than 30 per cent of the region's total imports.

2.1.1. Sectoral trends

The Asia-Pacific region increased its global presence in all services during the past 10 years.[4] The relatively dynamic services exports include financial, travel and ICT services (figure 2.2). The regional share of financial services in world exports more than doubled from 7 per cent in 2005 to 16 per cent in 2016. For travel services, the region increased its share in

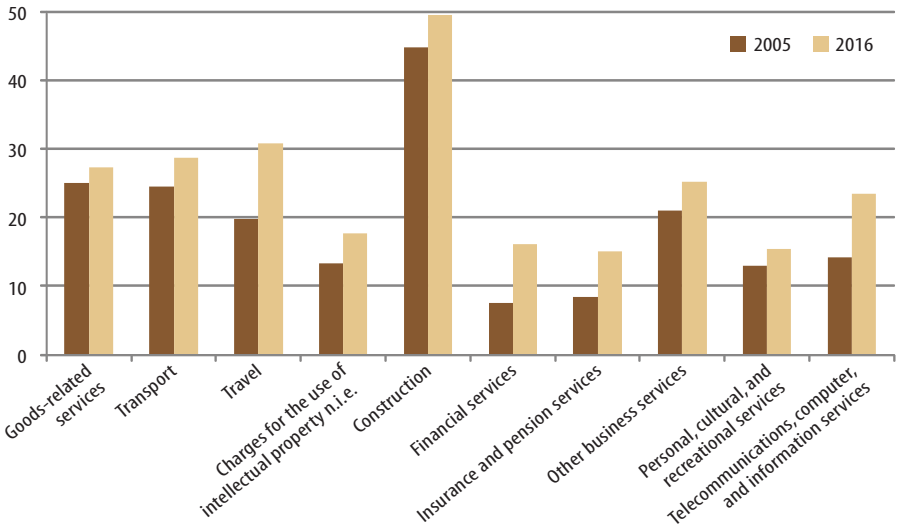
[4] The sectoral breakdown of commercial services, based on the sixth edition of the IMF Balance of Payments and International Investment Position Manual, BPM6, is provided in box 2.1.

Figure 2.1. Shares in global service exports by region, 2005-2016



Source: ESCAP calculation based on the WTO International Trade Statistics Database.

Figure 2.2. Share of the Asia-Pacific region in global exports by services subsector, 2005 and 2016

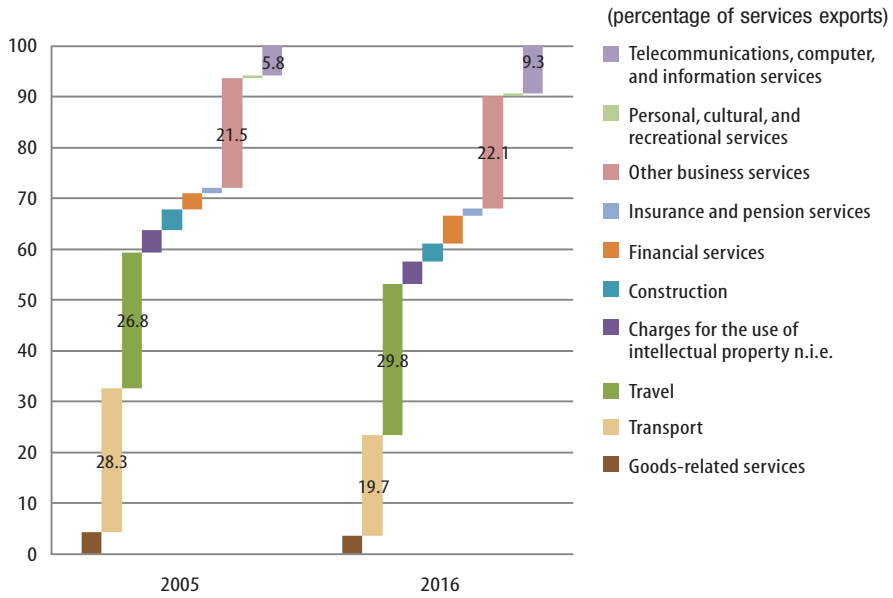


Source: ESCAP calculation based on the WTO International Trade Statistics Database.

global exports from 20 per cent to 31 per cent during the same period. Similarly, the region's share in global ICT services exports rose from 14 per cent to 24 per cent during 2005-2016. In addition, the labour abundance in Asia and the Pacific gives the region strength in construction services. The region dominates global exports of construction services, with its share increasing from 45 per cent in 2005 to 50 per cent in 2016 of world exports in 2005 and 2016.

Travel services are still the most important export component of the region. The share of travel services in regional exports increased substantially from about 27 per cent of total services exports in 2005 to almost one-third of total exports in 2016 (figure 2.3). Another important export sector comprises the other business services. This group includes (a) research and development, (b) professional and management consulting services, and (c) technical, trade-related and other business services. Together, these services accounted for about 21 per cent of total services exports throughout the decade.

Figure 2.3. Export structure of Asia-Pacific commercial services, 2005 and 2016



Source: ESCAP calculation based on the WTO International Trade Statistics Database.

Box 2.1. Commercial services – sectoral breakdown

According to the new methodology applied in the datasets of WTO and other international organizations – which is based on the sixth edition of the IMF Balance of Payments and International Investment Position Manual (BPM6) as well as the 2010 edition of the Manual on Statistics of International Trade in Services (MSITS 2010) – there are 12 standard services components. However, they can be grouped into four major categories as presented in the following table.

Services	Description
Goods-related services:	
a. Manufacturing services on physical inputs owned by others	Processing, assembly, labelling, packing and similar activities
b. Maintenance and repair, n.i.e.	Maintenance and repair work by residents on goods that are owned by non-residents (and vice-versa).
Transport:	
	Can be classified by mode of transport (sea, air or other) and by what is carried – passengers or freight. Also included are postal and courier services.
Travel:	
	Lodging, food and beverages, entertainment and transportation (within the economy visited), gifts and souvenirs. Travel is further subdivided into: (a) personal travel and (b) business travel.
Other commercial services:	
Construction	Creation, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature, and other similar engineering constructions such as roads, bridges, dams and so forth. Construction also covers the acquisition of goods and services by the enterprises undertaking construction work from the economy of location of the construction work. Construction can be divided into (a) construction abroad and (b) construction in the compiling economy.
Insurance and pension services	Services providing life insurance and annuities, non-life insurance, reinsurance, freight insurance, pensions, standardized guarantees, and auxiliary services to insurance, pension schemes, and standardized guarantee schemes.
Financial services	Financial intermediary and auxiliary services, except insurance and pension fund services, provided by banks and other financial corporations.
Charges for use of intellectual property, n.i.e.	Charges for the use of proprietary rights (such as patents, trademarks, copyrights, industrial processes and designs including trade secrets, franchises); charges for licences to reproduce or distribute (or both) intellectual property embodied in produced originals or prototypes (such as copyrights on books and manuscripts, computer software, cinematographic works and sound recordings) and related rights (such as for live performances and television, cable or satellite broadcasts).

Box 2.1. (continued)

Telecommunications, computer and information services	Telecommunications services encompassing the broadcasting or transmission of sound, images, data, or other information by telephone, telex, telegram, radio and television cable transmission, radio and television satellite, electronic mail, facsimile and so forth, including business network services, teleconferencing and support services; computer services consisting of hardware- and software-related services and data-processing services; information services including news agency services, such as the provision of news, photographs and feature articles to the media as well as database services.
Other business services	Research and development services, professional and management consulting services and technical, trade-related and other business services.
Personal cultural and recreational services	Audio-visual and related services and other personal, cultural and recreational services.

Source: ESCAP, 2015, based on information from the WTO International Trade Statistics Database. Available at http://webservices.wto.org/resources/meta/def_method_e.pdf.

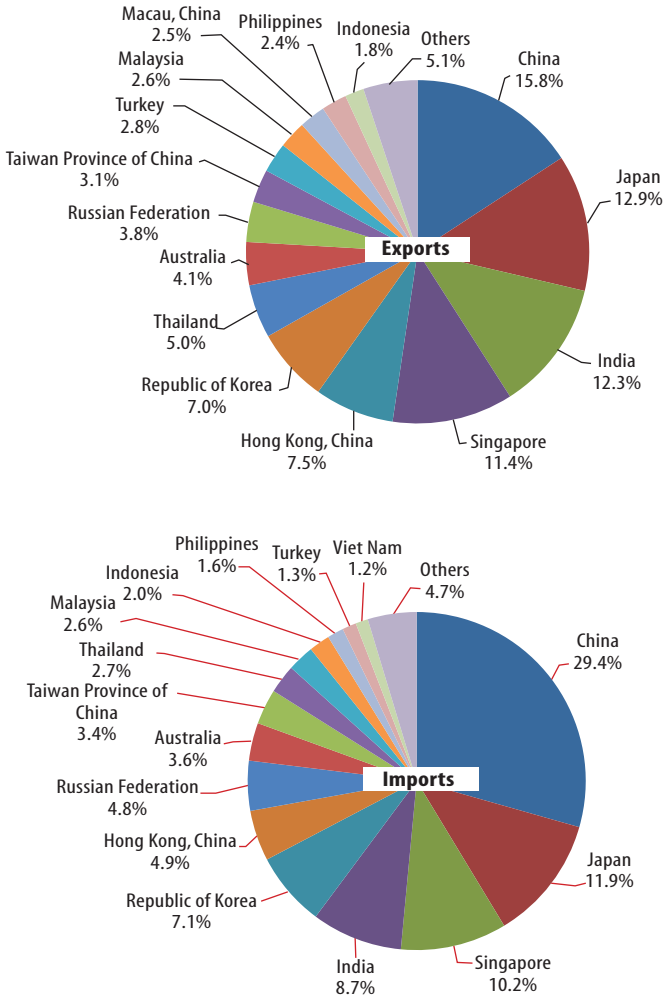
In addition, information, computer and telecommunications services are becoming an important export sector. The share of ICT services in total exports increased from 6 per cent in 2005 to 10 per cent in 2016. In contrast, transport services accounted for a substantial but decreasing export share during that period. The opposite trends of ICT services and transport services reflect the changing nature of global trade, with the flow of digital information growing more rapidly than the physical flow of goods.

2.1.2. Regional trends

The services trade by the Asia-Pacific region is concentrated in the large economies of the region. China, India, Japan and Singapore represent more than 50 per cent of total services exports and nearly 60 per cent of imports (figure 2.4). Most of other major services exporters and importers are located in East and North-East Asia as well as South-East Asia, which represented nearly 46 per cent and 24 per cent of regional exports in 2016. For other subregions, services trade is dominated by a few dominant economies in the respective subregions including Australia (the Pacific), Russian Federation (North and Central Asia), and India and Turkey (South and South-West Asia).

China is the largest services exporter in Asia and the Pacific. The country accounted for 15.8 per cent of regional services exports in 2016. As a global assembly hub for multinational manufacturing companies, China has a strong advantage in goods-related services, which include

Figure 2.4. Share of commercial services exports and imports by Asia-Pacific economies, 2016



Source: ESCAP calculation based on available data from WTO International Trade Statistics Database.
Note: "Others" is an aggregate of remaining Asia-Pacific economies with an individual share of less than 1 per cent of total Asia-Pacific trade.

manufacturing services, and maintenance and repair services.[5] The country accounted for 52 per cent of regional exports of goods-related services in 2016 (table 2.1). China also plays a leading role in regional exports of construction, insurance, other business services, and travel services.

[5] Manufacturing services are activities such as processing, assembly, labelling and packing that are undertaken by enterprises that do not own the goods (DESA, 2012).

Table 2.1. Top five exporters in the Asia-Pacific region, by services subsector, 2016

(percentage of total exports by Asia-Pacific region)

Services	Top-5 exporters					Total for top-5
Goods-related services	China	Singapore	Russian Federation	Republic of Korea	Taiwan Province of China	
Share	52.4	15.5	7.0	6.3	6.3	87.5
Transport services	Singapore	China	Japan	Hong Kong, China	Republic of Korea	
Share	19.7	13.8	12.9	11.4	10.8	68.6
Travel services	Thailand	China	Australia	Hong Kong, China	Japan	
Share	13.4	12.0	8.9	8.8	8.3	51.4
Charges for the use of IP	Japan	Republic of Korea	Singapore	Taiwan Province of China	China	
Share	69.9	11.9	9.6	2.2	2.1	95.7
Construction services	China	Republic of Korea	Japan	Russian Federation	India	
Share	29.2	25.2	21.6	8.2	4.8	88.8
Financial services	Singapore	Hong Kong, China	Japan	India	China	
Share	27.7	26.6	17.1	7.5	4.7	83.6
Insurance services	Singapore	China	India	Japan	Hong Kong, China	
Share	34.7	22.1	11.7	9.3	7.6	85.3
Other business services	China	India	Japan	Singapore	Republic of Korea	
Share	21.0	19.3	14.0	13.5	7.5	75.3
Personal, cultural and recreational services	India	Republic of Korea	Japan	China	Australia	
Share	20.0	16.2	11.6	10.7	9.0	67.5
Telecommunications, computers and information	India	China	Singapore	Philippines	Russian Federation	
Share	47.8	22.0	5.6	4.7	3.4	83.4

Source: ESCAP calculation based on the WTO International Trade Statistics Database.

However, relatively advanced economies play a more important role in the regional exports of highly-skilled and high-tech services, including charges for the use of intellectual property, and financial services. Being a world leader of technology and innovation explains why Japan is a dominant exporter of charges for the use of intellectual property. Similarly, the leading role of Singapore and Hong Kong, China in financial services reflects the strong position of the two economies as the hub of global and regional of financial services.

In addition, India plays an important role in the regional exports of ICT services and personal, cultural and recreational services. India is globally competitive in computer and information services. The country contributes nearly one-half of the exports of ICT services from Asia and the Pacific, and represents 20 per cent of regional exports of personal, cultural and recreational services. The leading role of India in these services reflects the country's strength in computer and information services as well as the Indian film industry.

2.2. The roles of services in Global Value Chains: Statistical evidence

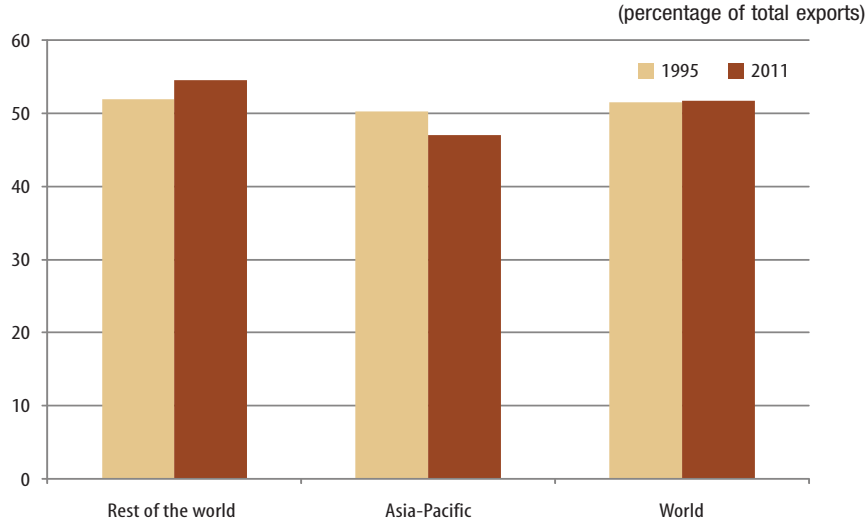
This subsection measures the significance of the services input in the manufacturing GVCs by showing the services value-added content of exports from manufacturing industries of Asian and Pacific economies. The calculations are based on international input-output tables and respective trade in value-added statistics available from the OECD-WTO Trade in Value-added (TiVA) database. The following facts are worth highlighting.

The significant contribution of services to global exports is not a new phenomenon. The services value-added has contributed about one half of global export value since the 1990s. The contribution of services to world exports has not changed much overtime because manufacturing and service value-added have grown proportionately. Currently, services value-added accounts for about 51.7 per cent of global exports of goods and services.

In Asia and the Pacific, however, manufacturing value-added grew more rapidly than services value-added. From 1995 to 2011, multinational companies from different regions relocated their manufacturing activities to developing Asia-Pacific economies, while high-value-added services activities remained in their home countries. Therefore, services value-added in regional exports decreased from 50.3 per cent in 1995 to 47 per cent in 2011 (figure 2.5). In contrast, the share of services value-added in total exports from the rest of the world increased from 51.9 per cent in 1995 to 54.5 per cent in 2011. These opposite trends were caused by international production sharing between the Asia-Pacific region and non-Asia-Pacific economies, which are predominated by exports from the United States and countries in the European Union, such that the advanced economies have been moving towards services and innovative tasks in GVCs.

The contribution of the Asia-Pacific region's global services value-added increased rapidly during the past two decades. The region accounted for only 26.6 per cent of global services value-added in 1995. In 2011, the

Figure 2.5. Share of services in total exports



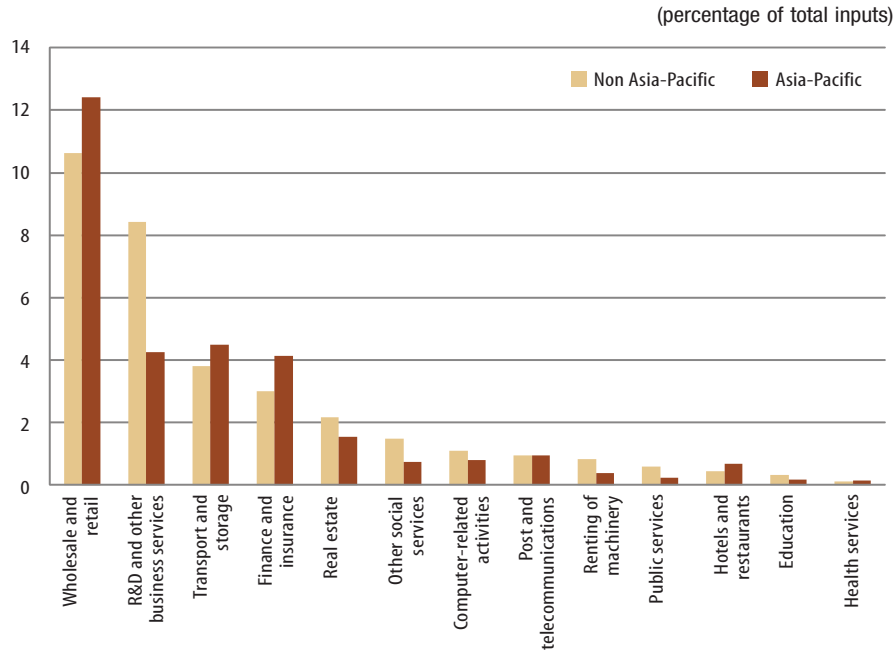
Source: ESCAP calculation based on the OECT-WTO TiVA Database.

regional share increased to 33.6 per cent. The increasing importance of the region in global service exports indicates that it is an emerging global exporter of services.

Distribution, logistics, R&D, finance and insurance are important services for GVCs of manufacturing and services. Distribution services, including wholesale and retail, contributed 12.4 per cent of the total inputs used in industrial exports from Asia and the Pacific in 2011 (figure 2.6). In addition, logistic services, including transport and storage, R&D and other business services, and finance and insurance, are the major service inputs to industrial exports from the region and the rest of the world.

A major difference between manufacturing exports from Asia-Pacific and exports from the rest of the world is the share of R&D services in total inputs. The R&D exports from countries outside the Asia-Pacific region are substantially higher. Because exports from the rest of the world are dominated by those from the United States and countries in the European Union, the difference reflects the diverse positions of developing countries in the Asia-Pacific region and advanced economies (European countries and the United States). The high contribution level of R&D services in the latter group shows that they participate in the technology and innovation activities of GVCs. In contrast, the GVC participation by Asia and the Pacific relies more on distribution and logistics, because the GVC activities in the region are centred on processing, assembling and re-exporting final or semi-final products.

Figure 2.6. Service inputs to industrial exports

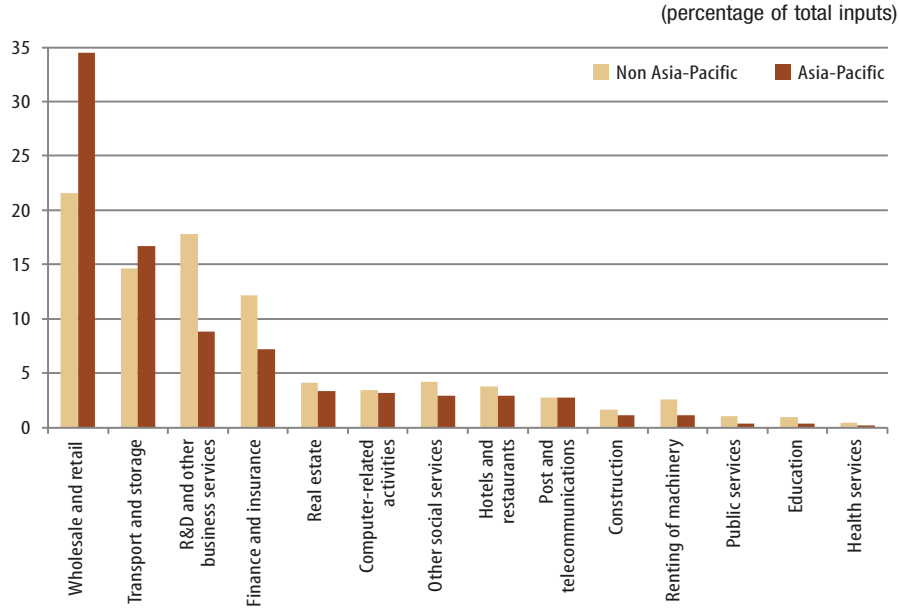


Source: ESCAP calculation based on the OECD-WTO TiVA Database.

In addition to being an important intermediate input, distribution, logistics, R&D, finance and insurance are also important service exports both globally and regionally. They account for about 66-67 per cent of total value-added in service exports by the region and the world. Distribution and logistics services are especially important service exports from Asia-Pacific region (figure 2.7). R&D and financial services are important inputs to service exports from non-Asia-Pacific countries. Therefore, the importance of distribution, logistics, R&D, finance and insurance are not only because they are significantly embedded in the value of other services, but also because they are important service export item on their own.

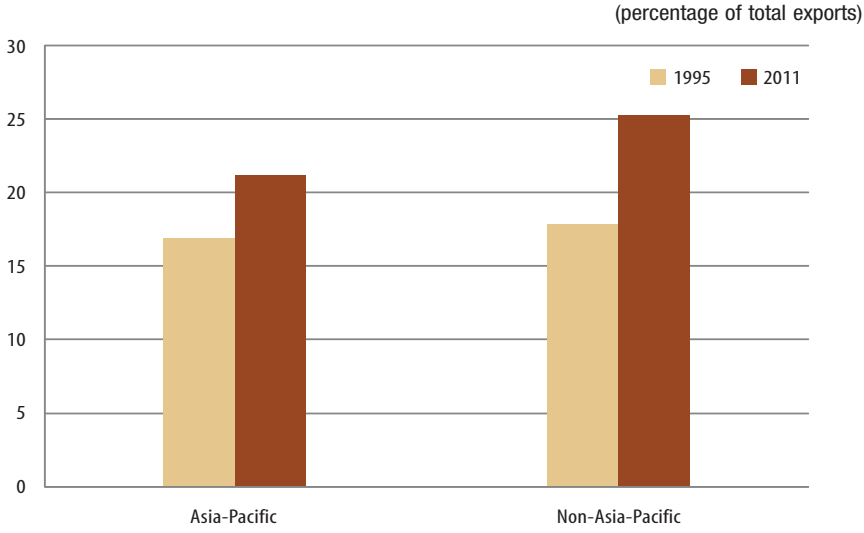
Due to international production sharing, imported inputs have become an increasingly important component in the process of value addition. Import content grew rapidly in Asia-Pacific economies from 17.8 per cent of total exports in 1995 to more than 25 per cent of total exports in 2011 (figure 2.8). The increase of imported input follows from the rapid growth of assembly and processing exports by the region during the past two decades. This is also the reason why import contribution grew more rapidly in the Asia-Pacific region than in the rest of the world.

Figure 2.7. Service inputs to service exports



Source: ESCAP calculation based on the OECD-WTO TiVA Database.

Figure 2.8. Total import content of exports, 1995 and 2011



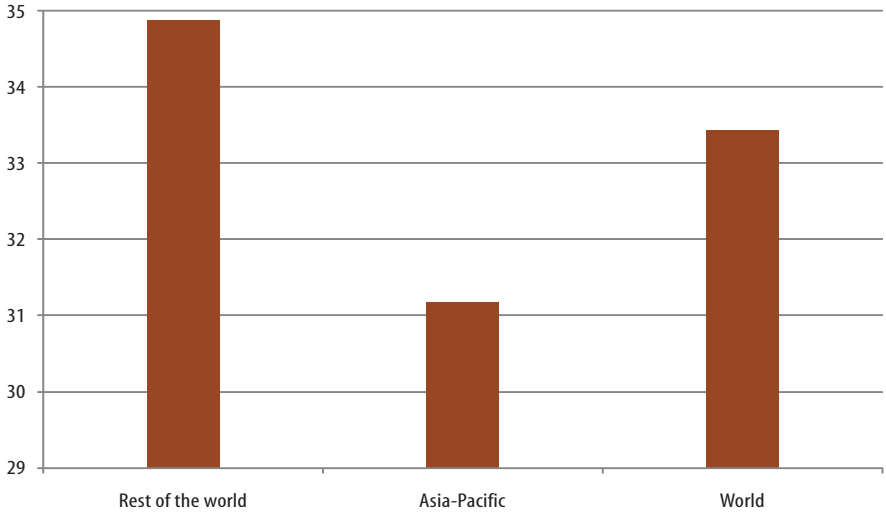
Source: ESCAP calculation based on the OECD-WTO TiVA Database.

2.2.1. Services in manufacturing Global Value Chains

The contribution of services to manufacturing production is substantial. Globally, services contribute about one-third of the manufacturing exports. In the Asia-Pacific region, the services sector contributes about 31.2 per cent of the total value of regional manufacturing exports (figure 2.9). Manufacturing exports from the rest of the world have a somewhat higher service content. This may be because the service input from the rest of the world largely comprises high-value-added services from the United States and countries in Europe.

Figure 2.9. Service content in manufacturing exports, 2011

(percentage of manufacturing exports)

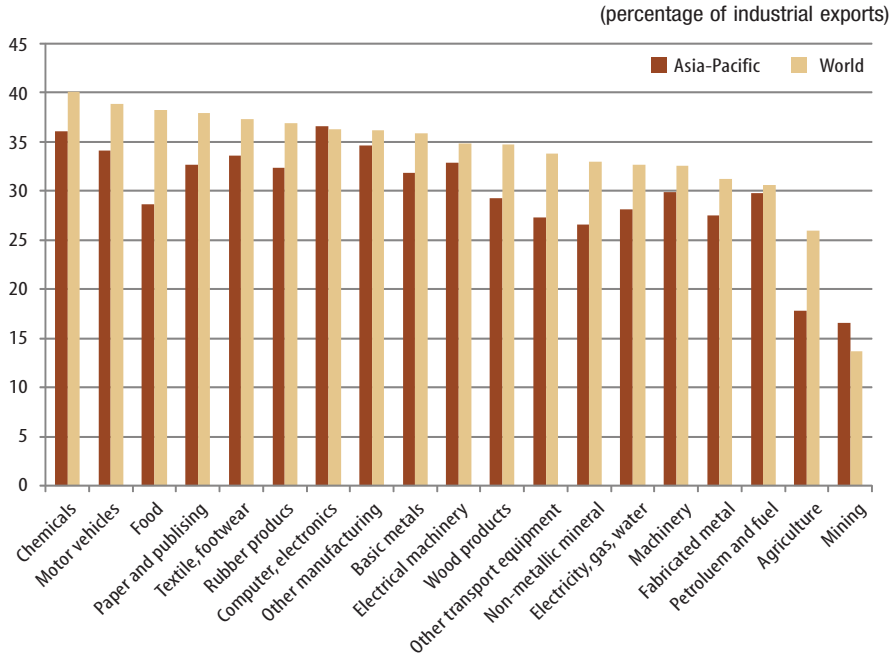


Source: ESCAP calculation based on the OECD-WTO TiVA Database.

Differences between regions in terms of technology and product differentiation may also explain the lower service intensity in manufacturing exports from the Asia-Pacific region. For example, services contribute 33.6 per cent of the textile exports from the Asia-Pacific region, while they account for 42.4 per cent of the exports from the rest of the world. The value-added by design and marketing activities for high-fashion exports from advanced countries may be a factor behind the higher service intensity in textile products from the United States and European countries. In contrast, standard textile exports from the Asia-Pacific region do not require such high value-added service input.

Service content also differs across industries. Services contribute substantially to the export production of high-tech industries, such as chemical products, motor vehicles, computers and electronics. In contrast, mining and quarrying exports have small service content (figure 2.10).

Figure 2.10. Service content in industrial exports from Asia-Pacific region and world, 2011

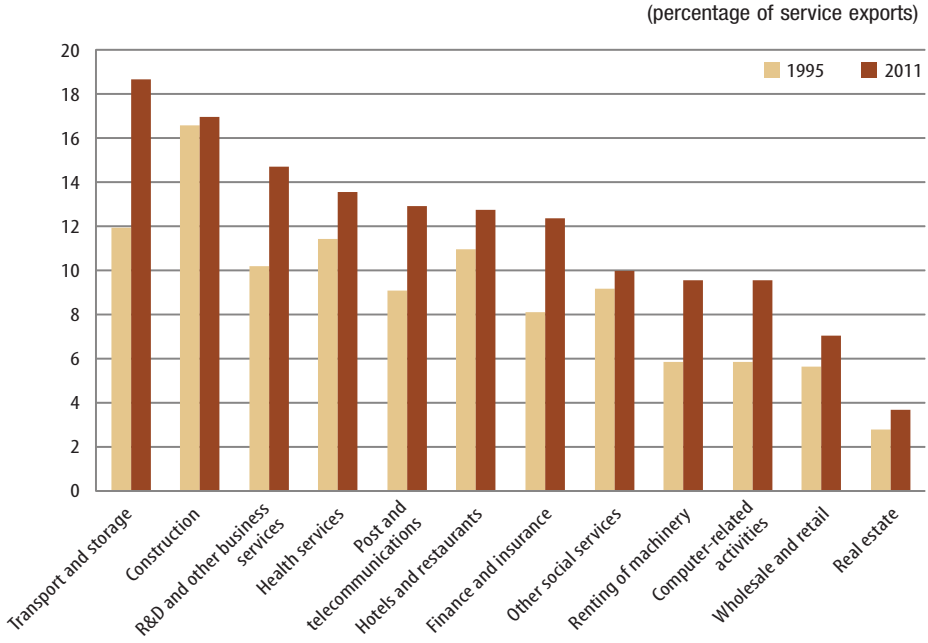


Source: ESCAP calculation based on the OECD-WTO TiVA Database.

In the Asia-Pacific region, the contribution by services is highest in the exports of computers and electronics. Services account for 36.6 per cent of the export value of the respective industry. The large service content reflects the strong demand for efficient services to facilitate the global operation of computer and electronics GVCs in the Asia-Pacific region.

Transport and storage, in particular, use more imported inputs than other service industries (figure 2.11). The import content of R&D is also significantly higher than in other services. Because logistics and R&D are among the most important service inputs to manufacturing GVCs, the high import content of these services implies that efficient access to imports of these services is a key factor in the competitiveness of manufacturing GVCs. Construction services also have a high import content because those services require imports of heavy machines and construction equipment.

Figure 2.11. Import content in service exports from the Asia-Pacific region, 1995 and 2011



Source: ESCAP calculation based on the OECD-WTO TiVA Database.

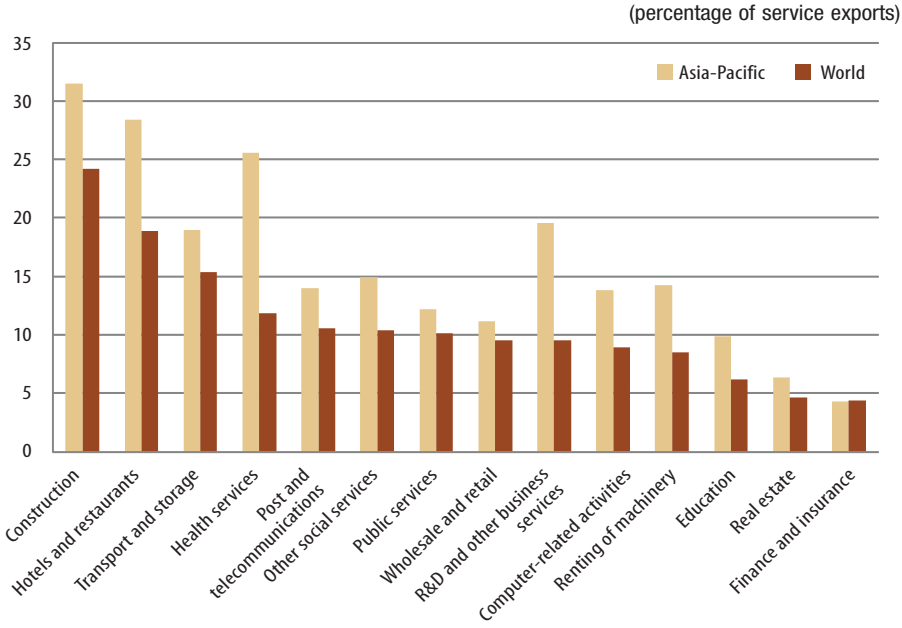
2.2.2. Services Global Value Chains

While services provide substantial contribution to the production of manufacturing exports, service production and exports do not require much of inputs from manufacturing industries. Manufacturing input contribute about 11 per cent to global services exports.

However, service exports by Asia-Pacific region contain manufacturing input more than the world on average. For Asia-Pacific region as a whole, the manufacturing content accounts for about 15 per cent of total services exports. The difference of manufacturing intensity in the regional and global services exports is particularly large in the cases of healthcare and R&D services. It may be a result of the international fragmentation in the production of healthcare and R&D services. For example, part of the healthcare-service value chain that require proximity to customers remains in the United States while work that can be done with machine from somewhere can be offshored to Asia-Pacific economies such as India for cost-saving purposes.

In addition, the difference may also reflect the less sophistication in service exports from Asia-Pacific economies. Construction, hotels and restaurants are among the most manufacturing-intensive services. The shares of industrial input in exports of Asia-Pacific construction, hospitality services are about 32.5 and 28.4 per cent, respectively. In contrast, inputs from manufacturing sector contribute less than 5 per cent of the exports of financial services (figure 2.12). The difference confirms that relatively low skilled-intensive services tend to demand more inputs from industrial sector than skilled-intensive services.

Figure 2.12. Industrial inputs in Asia-Pacific services exports

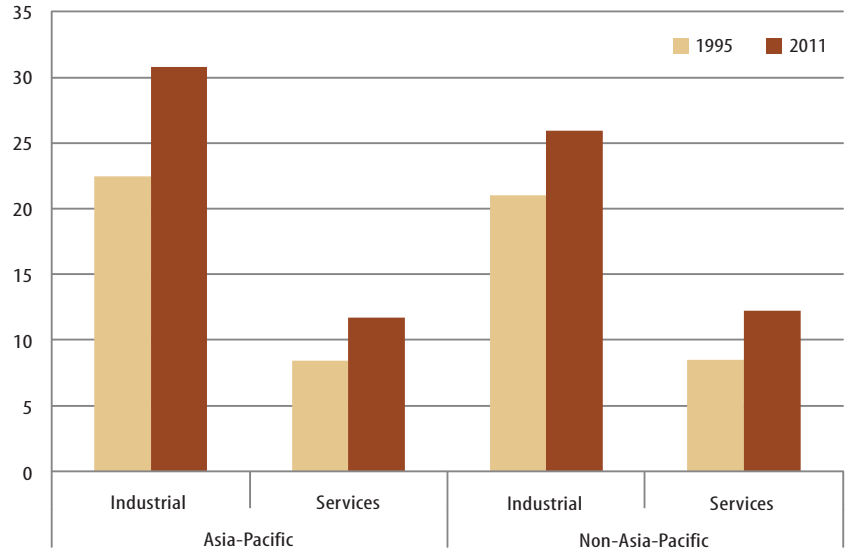


Source: ESCAP calculation based on the OECD-WTO TiVA Database.

The international sharing of production grew faster in the manufacturing sector than in services because the close proximity to buyers remains the requirement of many services. Therefore, import content in service exports is quite small when compared with import content in industrial exports (figure 2.13). Imports accounted for 11.7 per cent of services exports in 2011, while they contributed 30.8 per cent of total industrial exports. Due to globalization of production, import shares have been rising overtime, both for manufacturing and for services. Exceptions are in manufacturing-related services and construction, as mentioned above.

Figure 2.13. Import content in industrial and service exports, 1995 and 2011

(percentage of industrial and service exports)



Source: ESCAP calculation based on the OECD-WTO TiVA Database.

2.3. Key points of the chapter

This chapter analyses the role of services in international trade by Asia and the Pacific. It looks at the importance of services from the standpoint of the international fragmentation of production in manufacturing and services. Services play important roles in GVCs, either as exported products or as inputs in production of goods and other services. The input role of domestic services has been a hidden part of trade value, which is measured only as the gross value of the cross-border flows of products. With the lack of high-quality data to track the flows of value-added by each service activity of each country, the roles of services are surely underestimated both in terms of the share of services in international trade and the contribution of services as inputs in the production in GVCs. With particular attention being given to the roles of services in international trade and GVCs in the Asia-Pacific region, the analysis in this chapter is based on OECD-WTO data on trade in value-added to supplement official service-trade statistics in order to confirm the important roles of services in the modern trade environment, which is governed by the globalization of production.

The findings confirm that services play an important role in adding value as well as coordination and in linking production units in different locations.

The global competitiveness of manufacturing GVCs in Asia and the Pacific rely heavily on distribution, logistics, R&D, and financial and insurance services. These services are essential inputs in the production of exported manufacturing goods, especially relatively high-tech products such as computers and electronics, and chemical products. In addition, distribution, logistics, R&D, and financial and insurance services are important inputs to the production of exports of major Asia-Pacific services, which include travel and tourism, transport services and other business services.

Both manufacturing value chains and service value chains increasingly rely on the international sourcing of services or imports of intermediate services. Efficient access to essential intermediate services provided by the most competitive service providers is a key to promoting participation by Asia-Pacific economies both in manufacturing GVCs and in service GVCs. In contrast, heightening service trade restrictions and rigid regulation could have negative consequences for the export competitiveness of manufacturing industries and service industries themselves.

However, the increasing imports of intermediate services create pressure on domestic service providers. There may also be the issue of limited development benefits from participation in GVCs when that participation relies heavily on foreign value-added.

The general direction of service trade policy should thus focus on creating competitive market conditions and developing a well-functioning domestic service sector that meets high regulatory standards. Measures will have to vary from sector to sector. For example, ensuring competition is the key to enhancing efficiency in transport services such as airlines, road and rail transport, and maritime services. The openness of financial services together with a good regulatory framework could enhance competition and stability of the financial sector as well as contribute to macro-stability. In addition, it is important to have a comprehensive set of policies in place in order to encourage spillovers and technological diffusion from foreign to domestic providers. This may include, for example, public investment in upgrading and improving domestic absorptive capacity such as investment in education and training, ICT readiness and networks. In addition, greater domestic and international labour mobility will enable domestic firms as well as individuals to take advantage of service-export opportunities.

References

ESCAP (2015). *Asia-Pacific Trade and Investment Report 2015: Supporting Participation in value chains.* United Nations Economic and Social Commission for Asia and the Pacific, Bangkok. Available at http://www.unescap.org/publications/asia-pacific-trade-and-investment-report-2015-supporting-participation-value-chains.

DESA (2012). *Manual on Statistics of International Trade in Services 2010* (MSITS 2010), sales No. E.10.XVII.14 ISBN 978-92-1-161542-5. United Nations Department of Economic and Social Affairs, New York.

Chapter 3
Services in Global Value Chains: A case study approach[6]

The construction of trade in value-added statistics is an important milestone for services research because it has unveiled the actual importance of services in trade and global value chains activities. Taking into account services inputs in manufacturing exports, export share of services has increased from 23 per cent to 45 per cent (OECD and WTO, 2013).

Outsourcing activities by firms have helped to shed light on the importance of services. Prior to the unbundling of activities by firms, many service activities – for example, accounting services – were mostly carried out in-house and were therefore unmeasured in official statistics. However, when these services became outsourced activities, their economic importance came to the fore. The contribution of services to activities of firms not only became more transparent, their importance was also shown to be substantial.

However, the fact that many services remain internal to the firm or are fulfilled in-house implies that, progress in TiVA measurement notwithstanding, their importance remains undervalued (Lodefalk, 2014). The TiVA statistics show the direct and indirect economic contributions of services, but not those that are rendered within the firm.

The case studies presented in this chapter shed light on the importance of services in GVC activities of interviewed firms and show, in particular, the large number of service activities that remain within the firm. In this regard, this chapter contributes to further understanding the importance of services and complements the statistical analysis using TiVA in chapter 2 of this report.

The first case study is on two global firms in the construction equipment manufacturing industry. It highlights the fact that while TiVA data revealed the higher value contribution of services in manufacturing sector value-added, the data are still underestimated, considering that the case study shows that a significant number of services are provided in-house. The

[6] This chapter was contributed by Gloria O. Pasadilla, Senior Analysts and Andre Wirjo, Analyst of APEC Policy Support Unit. The chapter has drawn extensively from the APEC Policy Support Unit project on "Services in Global Value Chains: Manufacturing-Related Services". The report can be accessed at: https://www.apec.org/Publications/2015/11/Services-in-Global-Value-Chains-Manufacturing-Related-Services.

second study is on a company engaged in water treatment services. The case study shows that although the company manufactures the chemical product needed for water treatment, its main source of value is not from the product itself but from the services component of its business. The third case study is on a global wine exporter and the type of services it uses in its value chain, which illustrates that even in agribusiness, services play a key role.

3.1. Case study 1: Construction equipment manufacturing

3.1.1. Description of interviewed firms

The two firms covered in this case study are arguably competitors in the construction equipment industry. Firm A, which is based in Japan but operates in more than 150 economies, is a key global manufacturer of mining, construction and utility equipment. The firm has global sales of more than $17 billion, accounting for approximately 10 per cent of the estimated $170 billion global market (Businessvibes, 2013). Japan, North America, Latin America and Asia (including China) made up close to 70 per cent of the firm's market. Firm A engages in numerous activities across all stages of its value chain, including design, manufacturing, assembly, distribution, remanufacturing, and aftersales support services to customers.

Firm B began as a tractor company in San Leandro, California in 1925. While its competitors were focusing on agricultural equipment for the domestic market in 1950s, the firm decided to focus on construction equipment manufacturing for the global market. In 1972, the firm became one of the first major original equipment manufacturers (OEMs) in the heavy-duty truck and off-roading equipment sector to involve itself in remanufacturing. Today, firm B is a global leader in the manufacture of construction and mining equipment, diesel and natural gas engines, industrial gas turbines, diesel-electric locomotives, and mobile electricity-generating equipment including drilling rigs and electricity for cruise ships. Its sales and revenue in 2014 totalled $55.2 billion and it employs more than 110,000 full-time staff globally (company source 2015a).

3.1.2. Sector overview using TiVA data

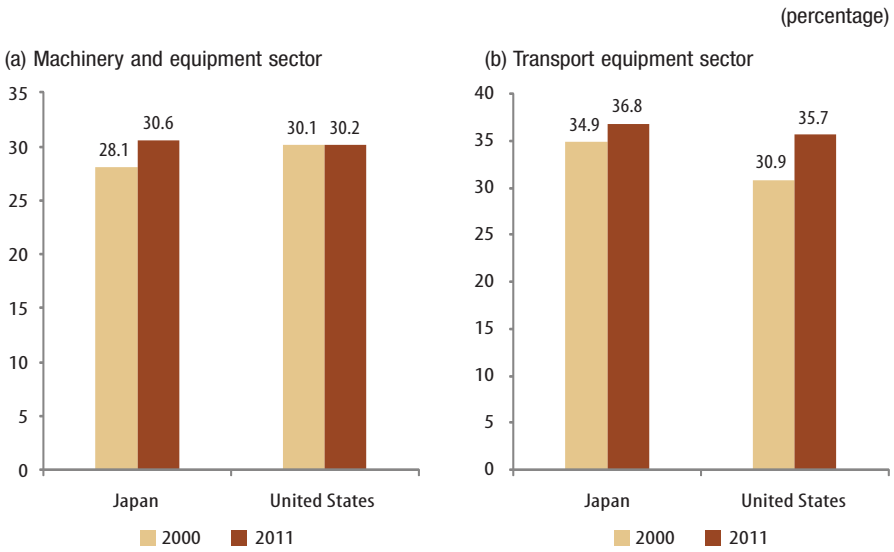
This section reviews firm A and firm B as part of the machinery and equipment (C29) and transport equipment (C34T35) sectors, as categorized by the OECD-WTO TiVA database.[7] Analysis of the machinery and

[7] OECD-WTO TiVA database classification is based on ISIC Rev. 3 code (available at http://www.oecd.org/sti/ind/49894138.pdf).

equipment sector in Japan and the United States shows that gross exports from these two economies have generally increased over the years. Exports of machinery and equipment by Japan increased by 84 per cent from $54 billion in 2000 to $100 billion in 2011. Similarly, exports from the same sector by the United States increased by 76 per cent between 2000 and 2011. The story is similar for the transport equipment sector. Exports of transport equipment by Japan increased by more than 70 per cent between 2000 and 2011, while exports by the United States increased by 51 per cent from $120 billion in 2000 to $182 billion in 2011.

TiVA data show that services make up a significant share of exports from these sectors and that their shares increased from 2000 to 2011. In Japan, 28.1 per cent of the exports in machinery and equipment sector originated from the services sector in 2000, and this share increased to 30.6 per cent in 2011 (figure 1). In the United States, 30.9 per cent of exports value in transport equipment sector originated from the services sector in 2000, and this share increased to 35.7 per cent in 2011. Relative to total manufacturing (33.3 per cent and 31.8 per cent in Japan and the United States, respectively, in 2011), the machinery and equipment sector in both economies is relatively less services-intensive, while the transport equipment sector is more services-intensive.

Figure 3.1. Share of services in exports in Japan and United States



Source: Authors calculation based on the WTO-TiVA database, 2016.

Of the services sector categories, the top five contributors to exports of machinery and equipment in terms of value-added are services grouped under wholesale and retail trade; repairs, R&D and other business activities, transport and storage, financial intermediation, and computer and related activities (table 3.1). These service sectors' importance and ranking are the same in both economies, reflecting perhaps the similarity in structure of the sector regardless of location. The same can be said of the top five services inputs for the transport equipment exports by Japan and the United States.

Table 3.1. Top five services sectors in Japan and United States in the machinery and equipment sector and the transport equipment sector, 2011

(percentage)

	First	Second	Third	Fourth	Fifth
	Wholesale and retail trade; repairs	R&D and other business activities	Transport and storage	Financial intermediation	Computer and related activities
Machinery and equipment sector					
Japan	43.3	16.4	11.6	7.2	5.0
United States	36.3	24.1	9.6	8.9	4.4
Transport equipment sector					
Japan	52.1	14.0	11.3	6.0	3.5
United States	37.8	26.3	9.4	7.5	4.3

Source: Authors calculation based on the WTO-TiVA database, 2016.

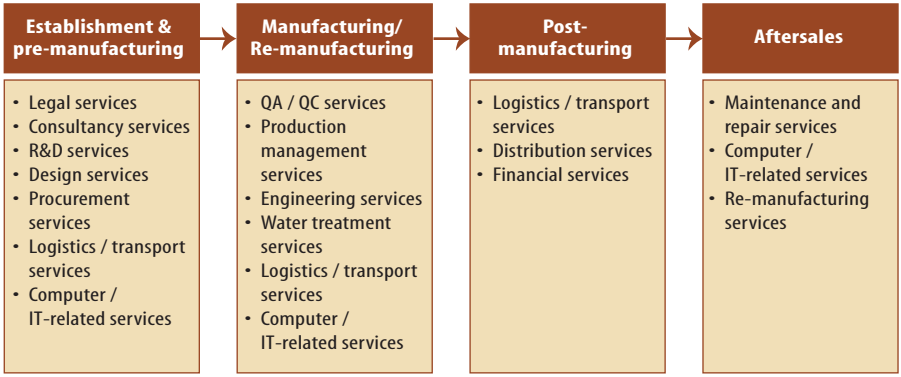
Note: Per cent refers to share of the specific services sector as a percentage of total services value-added.

How do these top service sectors identified from TiVA data square with what companies reveal about services they use in their operations? The next section first discusses the typical value chain in manufacturing one of its products – for example, a hydraulic excavator – and the services used at each stage. It then compares these services with the broad service categories from TiVA.

3.1.3. Services in the firms' value chain

The typical value chain for the manufacturing of construction equipment involves four main stages. In addition, based on information provided by firm A and firm B, various services are needed to ensure the smooth functioning of the value chain (see figure 3.2 for some examples of these services).

Figure 3.2. Typical value chain for construction equipment and examples of services



Source: Authors adaptation from Sit and Low, 2015, and Tait and Gereffi, 2015.

(a) Establishment and pre-manufacturing

When firms are not yet established in an economy, they begin with setting up facilities such as assembly plants, distribution centres and sales centres. In many economies, they establish their own subsidiaries or joint ventures in partnerships with local businesses. At this stage, firms need the support of professional services such as legal and business consultancy.

When firms are already present in an economy, the value chain begins with product research and development, which may or may not take place in the developing economy but is usually sited in more advanced locations. This includes services such as R&D, design and engineering services, and can be packaged as part of headquarter services from the point of view of a subsidiary in a developing economy location. Through activities such as new product innovation and lifecycle extension of existing products, the firms are able to maintain their dominance in their industry. Firm A, for example, spends more than $500 million annually on improving existing products and developing new models.

A critical component of modern value chains is the ability to source raw materials and parts from different regions of the world. For this, firms require procurement services to ensure that sufficient amounts of raw materials and parts are readily available or timely delivered in different manufacturing locations. Other key services include transport/logistics services to deliver raw materials and parts, and warehousing services for storage purposes. Computer and related services are also used for inventory management of raw materials and parts.

(b) Manufacturing

During the manufacturing stage, several key services are employed. For example, quality assessment and quality control (QA/QC) services ensure that raw materials, parts, and intermediate and finished products meet the stringent company and industry standards. Production management services enable proper planning of tasks and outputs, and efficient manufacturing process. Engineering services are definitely required at this stage. Since the production of different components and parts take place in different shop floors, both domestic and abroad, logistics services are again important as well as computer services to accurately time the intermediate products delivery in different locations.

(c) Post-manufacturing

Following assembly and QA/QC inspection, products are sent to distributors or directly to buyers using logistics services. Different firms have different distribution arrangements, depending on market size and the nature of customers. Firm A, for example, owns and operates distributorships, works with third-party regional distributors overseen by its regional headquarters, or appoints local firms as distributors and sells products to them directly. Similarly, Firm B acknowledged the vital role of distributors/dealers, noting that its strong relationship with its dealers and customers had led to a high level of customer loyalty in many aspects of their business, including not only sales of new products and parts but also rental of equipment (financial services) as well as maintenance and repairs of products, among others.

Both firms also offer different sales arrangements to customers. For example, customers can enter into different financial arrangements, including outright purchase as well as long-term leasing contracts. In this regard, firms require financial services to help structure arrangements for their customers.

(d) Aftersales

Aftersales services such as maintenance and repair services play a very important role in the construction machinery sector. Typically, the products of both firms' products could last up to 30 years. This means that while manufacturing a machine could only take approximately three years, the finished product remains under its "care" and continues to add value for up to three decades. Indeed, firm A revealed that the value of aftersales services for products during the 20 to 30 years of its life may sometimes be higher than the purchase price of the products themselves. A report by the Boston Consulting Group (2014) supports this with the finding that sales of services usually perform better than sales of machinery, because they

have faster growth rates, higher profitability, greater predictability and more resilience during economic downturns. While the value of services varies depending on the type of machinery and regulatory conditions, services quality is highly associated with market competitiveness.

Computer/IT-related services have also become an integral part of aftersales services as an increasing number of products manufactured by these firms are remotely monitored. By tracking information, such as load factors, fuel consumption and the status of certain parts and components, the firms are able to make timely intervention for maintenance and repair, thus minimizing unplanned downtime of machines. Remote monitoring also enables firms to collect useful data for improving future product designs.

(e) Re-manufacturing

Re-manufacturing is a process whereby products that have reached the end of their lifecycle are restored to OEM specifications. It is different from refurbishment, rebuilding, recycling and reuse. Re-manufacturing benefits firms because it allows them to retain the value of their products and stabilize demand for replacement components. It also benefits customers because the re-manufactured product has essentially the same functionalities as well as firm warranties as a new product but for approximately half the cost (Company source, 2015b). In addition, re-manufacturing benefits the environment via savings in raw materials and energy as well as reduced waste from industrial production.

When products are being considered for re-manufacturing, inspection services are used to assess if retrieved core components qualify for re-manufacturing. If they do, logistics services are then needed to transport the products to the re-manufacturing facility for re-inspection, disassembly and cleaning. Following that, design and engineering services are required to restore parts to OEM specifications. Subsequently, parts would have to be re-assembled, tested and prepared for re-sale. Once sold, aftersales services similar to that for new products would be provided.

3.1.4. Convergence of information from TiVA and firm interviews[8]

From the above value chain discussion, services identified at each stage accord with the top service sectors that contribute to sector value-added identified from TiVA. Table 3.2 summarizes the convergence of information from TiVA data and the firm interviews. For example, just as services under the ‘wholesale and retail trade; repairs’ ISIC category are collectively the top

[8] Comparing information from OECD-WTO TiVA database and those provided by firms A and B, this section makes a simple assumption that these firms are representative of the machinery and equipment as well as the transport equipment sectors in Japan and the United States.

Table 3.2. Services category in the OECD-WTO TiVA database and corresponding examples identified from firm interviews

Top services category in OECD-WTO TiVA database	Examples of services identified from firm interviews
Wholesale and retail trade; repairs	• Maintenance and repair services • Distribution services
R&D and other business activities	• Consultancy services • Legal services • R&D services • Engineering services
Transport and storage	• Freight transport services • Warehousing services
Financial intermediation	• Banking and financial services • Financial leasing services • Insurance services
Computer and related activities	• IT infrastructure and network management services • Global positioning system (GPS) services
Real estate activities	• Rental or leasing services/estate management services

Source: Authors adaptation from Sit and Low, 2015 and Tait and Gereffi, 2015, by using product classification under United Nations Central Product Classification, available at https://unstats.un.org/unsd/cr/registry/cpc-21.asp.

contributor to the exports of machinery and equipment as well as transport equipment by Japan and the United States, both firm A and firm B disclosed that maintenance and repair as well as distribution services play important roles in their business models. Likewise, in line with observations in the TiVA that services under the "R&D and other business activities" category contribute significantly to exports in these sectors, interviews with both firms underscored the importance of services, such as legal and consultancy services, which are collectively considered part of the "R&D and other business activities" services category. Both the TiVA database and firm interviews also noted the importance of services under "transport and storage", "financial intermediation", "computer and related activities", and "real estate activities".

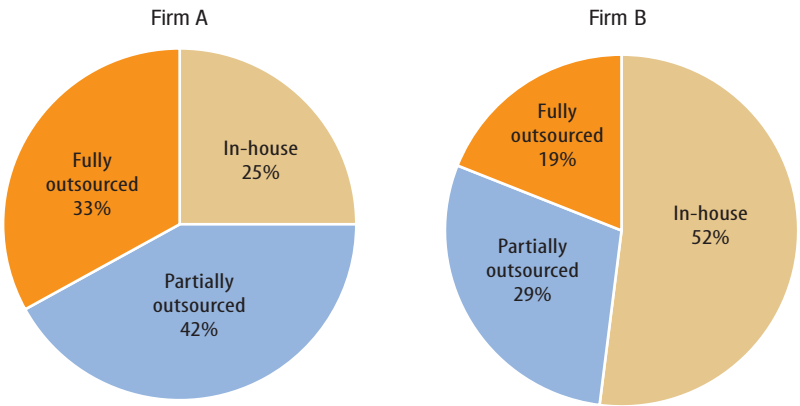
However, TiVA data rely on transactions data that are recorded in the economy. The interviews, however, revealed that many services used in the value chain were provided in-house rather than outsourced (figure 3.3). If this is true for all firms in the sector, and because the value of many services provided in-house are not reflected in statistics, then the TiVA data that disclosed the importance of services in manufacturing activities still understate the real economic importance of services. Critical services that are mainly provided in-house, such as R&D, production management,

QA/QC services and engineering, have no transactions record for purposes of data compilation and thus are unlikely to be captured in TiVA data.

In addition, the fact that some services, such as legal, financial and logistics/transport services are usually partially outsourced and partially provided in-house, implies that the TiVA values underestimate the true value-added contribution from these services. In classifying services depending on whether they are provided in-house or fully- or partially-outsourced, figure 3.3 shows that only 33 per cent and 19 per cent of services used by firm A and firm B, respectively, are fully outsourced.[9] The remaining services are either provided in-house or only partially outsourced, thus leading to the likely underestimation of services' value-added contribution.

Figure 3.3. Share of services supplied in-house or outsourced

(percentage)



Source: Authors adaptation from Sit and Low, 2015; Tait and Gereffi, 2015; and Low and Pasadilla, 2015.

3.2. Case study 2: Wastewater treatment

The second case study highlights how the services segment of the business model of a chemical manufacturer is its major source of value.

3.2.1. Overview of firm

The firm in this case study is a provider of end-to-end wastewater treatment and management services, which include data gathering and analysis, design and construction of water treatment plants, and manufacturing and sales of water treatment products and chemicals. It is headquartered in

[9] The figure shown is based on the number of services, not their value contribution which firms did not disclose and likely unknown even to the firms themselves.

Japan and currently has operations in different economies such as China, Taiwan Province of China, Thailand and Viet Nam. It plans to expand to Indonesia as well as other economies in South-East Asia.

Its client base is mainly in the automotive and food and beverage industries. Its business value proposition starts with the firm determining the optimum processing conditions and proposing the use of its proprietary treatment procedures in order to meet its clients' wastewater treatment needs. The firm can propose the establishment of new water treatment plants, or the modification and enhancement of existing plants. It can also offer wastewater treatment services at a centralized location for clients who prefer not to build their own on-site treatment facilities.

The core of the firm's business model is its proprietary biochemical product that has been developed in-house and used in virtually all of the firm's recommended treatment procedures. It contains living microbes that can decompose various kinds of organic matter commonly found in wastewater discharges from manufacturing plants. It is more environmentally-friendly compared to other treatment procedures, with water and carbon dioxide comprising the two main by-products generated by its treatment procedures.

The firm's technology can reduce the cost of wastewater treatment process to between 1/25 and 1/3 of the original cost, depending on the industry and type of wastewater. The firm is continuing to expand its customer base in economies such as Thailand where sludge treatment has remained relatively affordable. Other advantages of the firm over competitors include its use of automation and remote monitoring as well as its more compact designs of treatment facilities (table 3.3).

Table 3.3. Comparison between firm's and other physicochemical treatment process

Firm's treatment process	Other physiochemical treatment process
Automated operation (requires fewer staff)	Manual operation (requires more staff)
Minimal sludge and other by-products	Abundant sludge and other by-products
Utilize less chemicals	Utilize more chemicals
Treatment plants occupy a smaller area	Treatment plants occupy larger area
Treatment cost for different industries and type of wastewater ranges between 1 million and 20 million yen.	Treatment cost for different industries and type of wastewater ranges between 18 million and 80 million yen.

Source: Authors adaptation from Hassani and Wirjo, 2015.

3.2.2. Sector overview

Issues pertaining to water have gained prominence in recent years, together with issues such as sustainability, urbanization and population growth. The 2015 United Nations World Water Development Report indicated that the planet is expected to face a 40 per cent shortfall in water supply by 2030 unless management of this resource is dramatically improved. In response, the water design, build and operate (DBO) market has been projected to grow at a compound annual growth rate (CAGR) of 8.6 per cent between 2010 and 2020 (Royan, 2012).

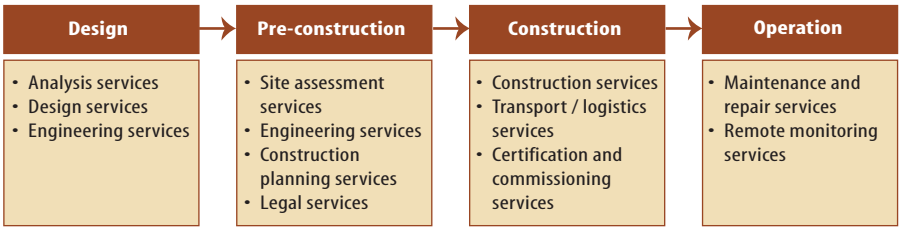
A critical component of the sector is the chemicals that are used in the treatment process. Analysis of the chemicals and chemical products (C24) sector in Japan, where the firm manufactures its chemicals, showed that gross exports increased by more than 125 per cent, from $29 billion in 2000 to $65 billion in 2011.

The technological, logistical and regulatory complexities associated with water treatment make bundled DBO services highly desirable. In fact, as the next subsection shows, the key to positioning the firm competitively in the water DBO market is to provide a "plug-and-play" component, with chemicals manufacturing being just a part of the entire value chain.

3.2.3. Services in firm's value chain

This subsection focuses on a particular water DBO value chain that the firm's subsidiary provides to its automotive client in Thailand. The value chain can be divided into four main stages, and numerous services are required at each step to operate efficiently (see figure 3.4 for some examples of these services). Despite the focus on a specific client industry (automotive in this case), a similar value chain usually applies to clients from various other industries. If any, variations are normally seen in the type of biochemical used to treat the wastewater, since different types of wastewater are made up of different chemical components.

Figure 3.4. Typical value chain for wastewater treatment, and examples of services



Source: Authors adaptation from Hassani and Wirjo, 2015.

(a) Design

The value chain begins when the firm receives a request from a client to provide water DBO services to its automotive manufacturing facility (this case study: Thailand). The firm flies in engineers from its headquarters in Japan to undertake several activities, including waste sample collection, analysis and running tests on samples from client's existing water treatment plant. The entire process is conducted in Thailand. Based on the test outcomes, the firm's engineers will design and suggest a customized treatment solution, in some cases including building prototypes or mock-up models of suggested treatment facilities.

(b) Pre-construction

When the client is satisfied with the proposed solution, the firm will proceed to the pre-construction stage where it assesses the prospective site for the plant and fine-tunes the design of bespoke equipment. The firm will also need to obtain construction permits from the relevant government agencies and identify contractors to outsource construction activities, such as welding and piping work.

(c) Construction

Treatment plant construction usually takes at least approximately six months. In parallel, firm will be importing core equipment and chemicals from Japan so that they can be installed as soon as the plant is ready. Therefore, services required include customs clearance, transport/logistics and warehousing services. Firm also takes care of certifying and commissioning the equipment.

(d) Actual operation

The firm essentially undertakes all operational activities of the treatment plant, including regular testing of treated water, remote monitoring of plant, maintenance and repair of installed equipment, and further R&D, in order to identify new chemicals that need to be removed from the wastewater prior to discharge into public areas. The firm also arranges the necessary logistics to collect by-products generated by the treatment process for disposal elsewhere.

3.2.4. Bundling and value contribution of services

The firm realized that it could not depend on its proprietary biochemical alone to ensure the sustainability of its business. Although currently protected by patents, the chemical itself is not difficult to replicate and produce; therefore, the firm expects fierce competition once its patents run

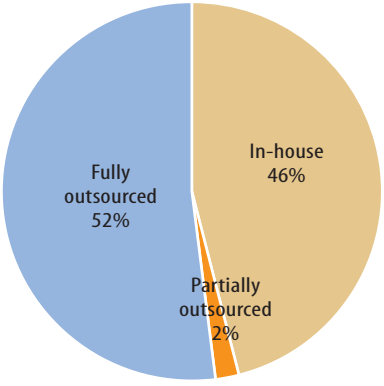
out. Thus, its strategy is to never supply the chemicals on their own. Instead, its use is packaged with the entire services associated with wastewater treatment procedures in order to obtain more business value for the firm.

From the value chain descriptions, the firm captures more value from the water DBO model where various wastewater treatment and related services are bundled together with the chemical use. Bundling also ensures that the proprietary technology of the firm is protected and, therefore, more difficult to reproduce. In the process, firm and clients enter into a long-term contractual (service) agreement.

The critical role of services in the firm's value chain can also be seen in the number of staff involved. All five staff in its Thailand subsidiary generally provide services to client; none of them are directly involved in the manufacturing of chemicals and equipment. The latter products are directly supplied by its headquarters in Japan. It is thus arguable whether the firm belongs to the chemical manufacturing sector or it is, in fact, an environmental service provider. In any case, the fact that almost half of the services that the firm uses in the value chain are provided in-house, or are only partially outsourced, points to the plausible conclusion that the services value contribution in the firm, if data are obtainable, is higher than what data statistics would show (figure 3.5).

Figure 3.5. Share of services supplied in-house or outsourced

(percentage)



Source: Authors adaptation from Hassani and Wirjo, 2015; and Low and Pasadilla, 2015.

3.3. Case study 3: Wine manufacturing

The third case study shows that even in agriculture-related business, services play a critical role.

3.3.1. Overview of firm

The firm described in this case study is a traditional, family-owned wine company with operations in both Chile and Argentina. It exports mainly bottled and boxed wine as well as a small quantity of bulk wine that is bottled or packaged in the destination economy. Between 2003 and 2013, sales more than tripled in terms of volume and value, and the firm managed to enter new markets in Asia including China, Japan and Singapore. Wines that are exported can be categorized into whether they are varietal, premium, super premium or ultra-premium, and are usually based on grape varieties that Chile is famous for, such as Cabernet Sauvignon, Carmenere, Merlot, Chardonnay and Sauvignon Blanc. Some of these wines have received awards in international competitions.

The firm has its own grape production and wine-making facilities. Its vineyard consists of several hundred hectares, and grapes produced from these vines are used for finer wines, while grapes sourced from outgrowers are used for its lower-priced wines. Driven by modernization and the quest for sustainability, the firm's operations have been transformed during the past two decades. For example, new technologies were added to the cellar to optimize quality control and production efficiencies.

The firm also obtained the different certifications that are required by key global markets, such as ISO9000, ISO14000, Hazard Analysis and Critical Control Points (HACCP) and British Retail Consortium (BRC) certifications. Other efforts include the adoption of a code of conduct for labour measures as well as the introduction of water recycling and the use of lighter bottles to reduce the firm's carbon footprint.

3.3.2. Sector overview

The wine industry has undergone significant changes during the past 20 years. Increased demand from a broader consumer base, together with the advent of new producers and sales channels, have shifted the focus to one driven by demand instead of supply, and particularly for low- to mid-end markets (Cusmano and others, 2010). Although natural conditions such as climate, soil and topography are still critical factors in determining the quality of wine products, firms now need to complement them with other factors such as innovation and marketing strategies in order to remain competitive.

Data from the food products, beverages and tobacco (C15T16) sector in the OECD-WTO TiVA database (of which the wine industry is part) show that gross exports from Chile have increased by more than 200 per cent, from $2.5 billion in 2000 to $7.6 billion in 2011. Specifically, data from UN Comtrade (2015) for wine show that exports from Chile increased by more than 10 times, from $182 million in 1995 to $2 billion in 2013.

Services contribute significantly to the manufacture of these products. In 2000, 31.1 per cent of Chile's export value in the food products, beverages and tobacco sector has its origin from the services sector. In 2011, this share increased to 34.9 per cent. TiVA data show that the top contributor to exports of food products, beverages and tobacco in terms of value-added are those grouped under "wholesale and retail trade", "R&D and other business activities", "transport and storage", "financial intermediation" and "real estate activities" (table 3.4).

Table 3.4. Top five services sectors in Chile in the food products, beverages and tobacco sector, 2011

	First	Second	Third	Fourth	Fifth
Chile	Wholesale and retail trade; repairs (30.0%)	R&D and other business activities (29.0%)	Transport and storage (14.1%)	Financial intermediation (10.5%)	Real estate activities (5.6%)

Source: Authors calculation based on the OECD-WTO TiVA database, 2016.
Note: Per cent refers to the share of the specific services sector as a percentage of total services.

This case study asks if the firm-level use of services is consistent with the observation from TiVA data. How does a wine-producing firm use services in their value chain?

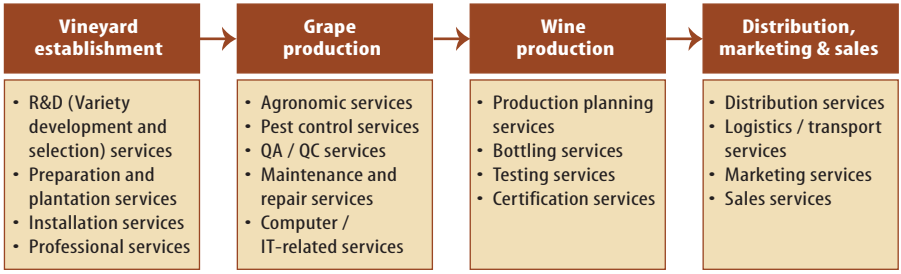
3.3.3. Services in firm's value chain

The case study focuses on the firm's operations in Chile and divides the wine value chain into four main stages. Information gleaned from the interview shows that many services are required at every stage of the value chain (figure 3.6 provides some examples of these services).

(a) Vineyard establishment

This stage of the value chain focuses on vineyard construction or preparation and on choosing the right variety of grapes to be planted (i.e., based on climate, soil and topography). In this stage, required services include R&D, testing and other real estate management services. R&D services by local and international research institutions allow the growth of

Figure 3.6. Typical value chain in the wine industry, and examples of services



Source: Authors adaptation from Fernandez-Stark and Bamber, 2015.

new grape varieties. Testing services are also required to determine soil conditions. In addition, construction and installation services are needed to ensure that all the necessary components are in place before the vineyard becomes operational. These include wells, drip irrigation systems and electrical circuits. The firm also hires technical/agriculture experts to provide more information about the varieties to be planted as well as cultivation techniques.

(b) Grape farming

As described above, the firm produces its own grapes from its own vineyard for its high-quality wine, while it outsources grape growing to independent outgrowers for lower-quality wine. Even in the latter case, however, the firm's own production team, which includes an agronomist and technicians, is involved in the cultivation process to control grape quality. Several services (tasks) are utilized at this stage, including canopy management, pruning, irrigation control and spraying, many of which have either been mechanized or outsourced. Training services via a combination of on-the-job training and specialized external courses are also provided for personnel and outgrowers. As with any industry, its equipment needs to be regularly maintained; for that purpose, the firm also utilizes maintenance and repair services. Computer/IT-related services are also needed to develop customized software for precision agriculture, including monitoring and production tracking. During peak periods, the firm supplements the activities carried out by its production team with services provided by external parties.

(c) Wine production

Several processes, including grinding, fermentation, pressing, storage and bottling, constitute the wine production stage. This essentially means that the firm uses production management services to ensure the smooth

functioning of the entire production phase. The firm has an internal team of employee that include an operations manager who is supported by oenologists (wine production experts), technicians and other workers. In addition to employing testing services to verify product quality, the firm works with external laboratories to obtain certificates for various standards, including certificates of origin.

(d) Distribution, marketing and sales

Distribution is an integral part of the wine industry. The firm deals directly with wine importers who sell their products to local wholesalers or retailers. In some cases, the importer is its own subsidiary and thus the firm directly transacts with local distributors. Branding and marketing activities, such as promotions, special discounts, training of sommeliers, participation in trade fairs and exclusive wine ranking as well as tasting at point of sales, are important service activities.

3.4. In-house vs. outsourcing

Analysing information gleaned from OECD-WTO TiVA data as well as data provided by firms show, as in the above case studies, the convergence of service activities that are important to the wine value chain or the food and beverage industry. For example, the TiVA data indicate that services under the "wholesale and retail trade; repairs" group are the top value-added contributors to Chile's exports of food, beverages and tobacco; the case study firm likewise points to the same critical role of wholesale and retail trade as well as maintenance and repair services in their value chain. Furthermore, services under the "R&D and other business activities" group contribute significantly to exports, while the firm likewise mentioned the importance of services such as genetic development, variety selection, engineering advisory and marketing, which are collectively considered part of the "R&D and other business activities" services category. Findings from the interview are also in accordance with the TiVA data that indicate the importance of services under "transport and storage", "financial intermediation" and "real estate activities" groups (table 3.5).

As in above case studies, the TiVA data present only partially the vital role of services in the food manufacturing industry, including wine. Services that are mostly provided in-house, such as bottling, management and headquarter services, are not captured in the data. In addition, the value of services that are only partially outsourced, such as computer/IT, training and agronomic services, are likely to be undervalued. Categorizing services identified by the firm into whether they are provided in-house, partially outsourced or fully outsourced shows that up to 55 per cent of the identified

Table 3.5. Services category in OECD-WTO TiVA database and corresponding examples identified from firm interviews

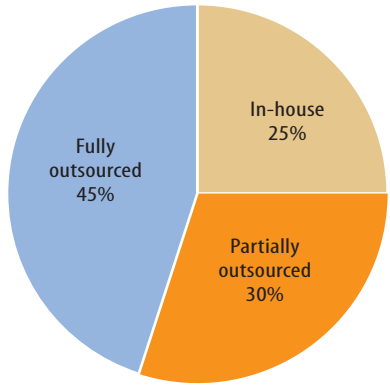
Top services category in OECD-WTO TiVA database	Examples of services identified from interviews
Wholesale and retail trade; repairs	• Wholesale trade services • Maintenance and repair services
R&D and other business activities	• Genetic development services • Variety selection services • Engineering advisory services • Marketing services
Transport and storage	• Freight and passenger transport services • Storage and warehousing services
Financial intermediation	• Insurance services
Real estate activities	• Land preparation services • Estate management services

Source: Authors adaptation from Fernandez-Stark and Bamber, 2015; and United Nations Central Product Classification, available at https://unstats.un.org/unsd/cr/registry/cpc-21.asp.

number of services (in-house and partially outsourced) may either be underestimated or not captured by available statistics on services (figure 3.7).

Figure 3.7. Share of services supplied in-house or outsourced

(percentage)



Source: Authors adaptation from Fernandez-Stark and Bamber, 2015; and Low and Pasadilla, 2015.

3.5. Policy biases[10]

Services have been shown to be widely used in the value chain of many sectors, and to have a significant impact on the competitiveness of firms. Economic policies regulating services affect manufacturing activities and firms' decisions. The case study interviews revealed some of these concerns.

3.5.1. Investment policies are less favourable to services than manufacturing

Although most economies welcome investments in the manufacturing sectors because of the perceived benefits to domestic employment, they have generally more restrictive investment policies on services. For example, Regulation No. 39 of 2014 in Indonesia restricts foreign ownership in the wholesale and distribution sectors to 33 per cent equity. In Thailand, foreign equity ownership in services is capped at 40 per cent. In some cases, the local partners of foreign companies add value to the operations of those firms due to their local expert had proved difficult and the business partnership was akin to a "shot-gun marriage" that was difficult to keep intact. It also led to a chopping up of an otherwise efficient integrated business model whereby, for example, the foreign firm owned 100 per cent of the manufacturing operation but had to maintain only a minority stake in the distribution activity or in the installation, maintenance and services part of the business.

3.5.2. Labour-related restrictions

Labour restrictions, such as quotas, economic needs test, complex entry requirements and discretionary decisions on recognition of qualification, also affect business activities. The firms mentioned that in one economy they had to employ four locals for every foreign employee. For a large manufacturing firm, this constraint is non-binding but not for a small service firms of five employees. Sometimes the work permit for foreign employees may also be conditioned on the amount of tax paid or in minimum capitalization. In Thailand, unless the firm has paid baht 3 million or more in corporation tax in the previous fiscal year, operates an export business and has brought in more than baht 30 million in previous years, or has 100 or more Thai employees, it cannot employ more than 10 foreigners (Mayer Brown JSM, 2008). In other economies, labour-market tests for intra corporate transferees are required for the provision of engineering services. Permitted length of stay may also be too short for a firm's purposes, particularly when a machine installation or repair needs to be made.

[10] This section draws heavily from Low and Pasadilla, 2015.

It is worth noting that, in fact, foreign firms prefer to hire locals because hiring expatriates is expensive. The challenge, however, is finding a sufficient number of people with the right skills in the local labour market. To augment local skills, the interviewed firms disclosed that they have internal training programmes or they cooperate with local training centres to develop a curriculum for the skills requirement for their local operations. In Chile, the Ministry of Education and the private sector created a certification system for labour competencies for the wine industry, which facilitates outsourcing and temporary contracting during peak periods.

3.5.3. Localization and mandatory technology transfer

Some Governments require firms to engage local service providers for certain service activities by reserving the conducting of such activities only to domestic firms. For example, the Foreign Business Act, B.E. 2542 (1999) of Thailand limits the rights of foreigners to undertake certain business activities. "Controlled" activities include the transportation/logistics industry (Schedule 2 of the Act). For example, this means that, the water treatment services company in the case study has to utilize locally-licensed transport firms to bring chemicals or sludge in and out of its client's water treatment facilities. This arrangement not only increases the cost for the firm, due to lack of competition, it also poses potential liabilities in a case of mishandling the chemicals or waste products. Finding reliable service providers is challenging for some sensitive tasks.

Technology policies of some Governments require the transfer of technology by foreign firms. In some cases, foreign firms comply with the policy by licensing their intellectual property to a local joint venture partner with an exclusive market agreement, i.e., products produced under the licence are strictly only for a designated market. This, however, depends on having a satisfactory intellectual property law that is strictly enforced. Firm interviews provided anecdotal evidence whereby market "leakage" had taken place and they found themselves competing with their own licensed product for sales in a third market.

Other technology policies apply to mandatory disclosure of source codes, for example, for operating machines or equipment. If companies are unsure of intellectual property protection, they end up selling machines to the economy that use an old technology instead of products that use state-of-the-art technology. The inadvertent effect of the policy thus deprives that economy of the technology and knowledge transfer it wanted.

3.5.4. Government services and domestic regulations

An efficient Government lowers the cost of doing business while, conversely, inefficiencies in regulations, and duplicative or inconsistent procedures increase cost both in terms of time and money. For example, in the case of the construction machinery and equipment manufacturers, the burdensome registration system for remanufacturing businesses and products, or cumbersome customs regulations, essentially limit the sales of re-manufactured products to fewer economies. In particular, complicated and inefficient customs clearance procedures in some economies mean that spare parts required for maintenance of machines take longer to reach the facility.

Government agencies often conduct inspection visits to manufacturing facilities to ensure compliance with health or safety regulations. Often, these visits are a mere procedural burden rather than real occasions for firms to improve. In other cases, however, government enforcement of regulations is useful. In Chile, for example, the Government undertakes many activities to help marketing and ensuring the quality of wines produced in that country. Government officials visit wineries periodically to quantify the wine stock in order to support the credibility of the certificate of origin that the Government issues, thus facilitating the customs requirements in its many preferential trade agreements.

References

Boston Consulting Group (2014). *Creating Value for Machinery Companies through Services*, BCG Perspectives Report on Industrial Products and Processes and Operations by Victor Du, Kelly Howe, Rahul Jain, Rafael Rilo, Patrick Staudacher, Pekka Vanne and Francisco Salmerón (eds.), 6 May 2014. (accessed 7 June 2015). Electronic access: https://goo.gl/xcLj7F.

Businessvibes (2013). *Global Construction Machinery Industry Overview*. Available at https://www.businessvibes.com/blog/global-construction-machinery-industry-overview.

Company source (2015a). First Quarter Fact Sheet. Accessed 23 June 2015.

_____ (2015b). Executive interview at firm headquarters, June 12, 2015.

Cusmano, L., A. Morrison and R. Rabellotti (2010). Catching up trajectories in the wine sector: A comparative study of Chile, Italy, and South Africa, *World Development*, 38(11), pp. 1588-1602.

Fernandez-Stark, K and P Bamber (2015). Wine industry in Chile, in *Services in Global Value Chains: Manufacturing-Related Services*, chapter 17. APEC Policy Support Unit, Singapore.

Hassani, A and A Wirjo (2015). Wastewater treatment services in GVCs, chapter 6 in *Services in Global Value Chains: Manufacturing-Related Services*, APEC Policy Support Unit, Singapore.

Low, P. and G.O. Pasadilla (2015). Manufacturing-related services, chapter 1 in *Services in Global Value Chains*. APEC Policy Support Unit, Singapore.

Lodefalk, M. (2014). The role of services for manufacturing firm exports, *Review of World Economics, 150(1), pp. 59-82,* 14 February 2014. SpringerLink.

Mayer Brown JSM. (2008). Guide to Employment Law in Thailand. Available at http://www.mayerbrown.com/files/Publication/1ed36ca3-a467-4da1-8a05-9264088c9334/Presentation/PublicationAttachment/f1805434-c19c-465e-8a5d-555c2bec7ad1/jsm_thailand_employment_may2008.PDF.

OECD-WTO (2013). *Measuring Trade in Value-Added*, OECD-WTO joint initiative. Available at http://www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm.

OECD-WTO (2016). Trade in Value-Added Database. Accessed 12 November 2017. https://stats.oecd.org/index.aspx?queryid=75537

Royal Thai Embassy. General restrictions on foreign participation: The Foreign Business Act. Business Information Centre, Royal Thai Embassy, Singapore. Available at http://bic.thaiembassy.sg/node/104.

Royan, F. (2012). Sustainable Water Treatment Technologies in the 2020 Global Water Market, Mountain View: Frost & Sullivan, May 2012.

Sit, D. and P. Low (2015). Manufacturing of mining and construction equipment, chapter 4 in *Services in Global Value Chains: Manufacturing-Related Services*, APEC Policy Support Unit, Singapore.

Tait, K. and G. Gereffi (2015). Remanufacturing services in the construction machinery value chain, chapter 19 in *Services in Global Value Chains: Manufacturing-Related Services*, APEC Policy Support Unit, Singapore.

UN Comtrade (2015). United Nations Commodity Trade Statistics Database. United Nations Statistics Division, Washington, D.C.

UN-Water (2015). The *United Nations World Water Development Report 2015 – Water for a Sustainable World*. United Nations Educational, Scientific and Cultural Organization, Paris. Available at http://unesdoc.unesco.org/images/0023/002318/231823E.pdf.

Chapter 4
Barriers and liberalization of trade in services

As discussed in the previous chapters, global and regional trade landscapes blend flows in goods, services, investment and intellectual property. Trade in services stands out for its intangibility, non-storability, diversity as well as the important role it plays as an input in the production of goods and as intermediation for trade in goods. In contrast to the more transparent, direct rules and regulations for trade in goods, trade in services faces a much more complex and often less transparent policy environment.

This chapter provides an overview of policy issues related to trade in services. It starts by looking at the specificity of services trade (compared to goods trade). This differentiation is useful in framing a discussion of the features of barriers used in services trade. The latter half of the chapter is devoted to discussing how to manage these restrictions on services trade. The chapter provides a review of services trade liberalization efforts at the multilateral, plurilateral, and unilateral levels. The final section offers some key messages from the discussions and empirical data presented in the chapter. Wherever possible, empirical evidence relevant to the circumstances of the Asian and Pacific economies is provided.

4.1. Features of trade in services

Trade in services differs from trade in goods in various ways, but there are four main differences:

1. A driver of growth – services trade is largely driven by technological progress;
2. Stability/resilience to shocks – services trade tends to be more stable during an economic crisis;
3. The impact on economic efficiency and competitiveness – services have a closer association with economic competitiveness;
4. A contributor to sustainable development – services are one of the leading sectors ushering in the fourth industrial revolution.

Unlike the trend of subdued growth of trade in goods, the growth of trade in services – both globally and in the Asia-Pacific region – has remained positive and less volatile since 2010. The reason is that technological

progress and regulatory reforms prior to the financial crisis of 2007-2008 have increased the tradability of services, and enabled emergence of new and improved services exports. Historically, trade in services was deemed to require the proximity of suppliers and consumers, but technological change has significantly weakened this conditionality. In addition, delivery of trade in services has become increasingly and more substantially bundled with goods, as specialization was increasingly fostered along the global value chains. The process of embodying and embedding services with goods (see chapter 1) has strengthened the relationship between trade in goods and trade in services, as evidenced by value-added statistics.

The capacity to produce and trade services plays a critical role in economic development. Services themselves offer new opportunities for expanding trade both in goods and in services, and for building a healthier economic structure through export diversification. As already noted, services exports are significantly less volatile than goods exports if measured in gross terms (OECD, 2017). This is because services rely less on external finance, and hence are less prone to protectionist measures associated with economic crises; also, demand for services is generally less cyclical. This resilient nature of services makes them an important anchor for the economy during the recovery – as evidenced by the International Monetary Fund, modern services (such as Business, Computer and Information, Finance and Intellectual Property services) continued to grow since the global financial crisis, especially in developing countries (IMF, 2017).

Trade in services has a close link with the competitiveness of the domestic economy (ABAC, 2011). As global value chains develop, an efficient services market helps to attract more foreign direct investment (FDI) and create new job opportunities and technology transfers. An in-depth analysis of global value chains identified that about three-quarters of trade in services goes to intermediate inputs for the production of goods and other types of services (De Backer and Miroudot, 2013). Therefore, reduced barriers to services trade would enhance the competitiveness of existing firms, both in services and other industries, along the value chain. Interaction between local and foreign service providers as well as existing and new providers would strengthen competition, nurture more innovative business ideas and models, and increase efficiency and productivity in domestic economy.

Last, and very importantly for sustainable development, open and well-regulated services markets are critical for ensuring access to cutting-edge information, skills, technology, funding and markets in a growing digital economy; therefore, services trade liberalization builds a gateway to join the

fourth industrial revolution. According to OECD (2017), the fourth industrial revolution features "computer-based manufacturing, additive manufacturing, automation and advanced analytics of Big Data, and the flow of information over the Internet of Things (IoT). All of these aspects require high-capacity networks as well as transformation from conventional services towards knowledge-intensive services, which are only possible if liberalization and pro-competition reforms are made in domestic services markets. In addition, sustainable development intersects with trade in services across a spectrum of non-economic issues, including social development, environmental sustainability and natural resource concerns. The realization of many of the Sustainable Development Goals rely on bolstering the performance of domestic services sectors and ensuring inclusive access to good quality services, both in developed and developing countries.

4.2. Barriers to trade in services

It is widely recognized that services trade restrictions affect not only trade in services, but also trade in goods (Nordås and Rouzet, 2015). Unlike trade in goods, which is governed by tariffs and largely well-defined, non-tariff measures, barriers to trade in services tend to be subtler and diffuse, and are characterized as being complex and lacking transparency. Although studies have proposed different approaches to considering and grouping these regulations, studying the restrictiveness of various barriers associated with trade in services is not straightforward.

4.2.1. Characteristics of services trade barriers

The diversity of services entails the diversity of services trade barriers. Various empirical studies have attempted to classify services trade barriers and to derive common characteristics. However, a major constraint has been inadequate data on policies affecting services trade, especially in developing countries (Borchert and others, 2013). Services barriers are more akin to non-tariff measures on trade in goods, where the impact is largely associated with the design and implementation of government regulations that are often applicable to both domestic and foreign providers of a service.

The World Trade Organization (WTO) classifies the barriers to trade in services into three categories: market access impediments; national treatment impediments; and most-favoured-nation (MFN) impediments. This approach is aligned with the structure of the General Agreement on Trade in Services, which is discussed in the next section. Market access impediments include whether a foreign services provider can access and operate in domestic market; such limitations are, among others, on: (a) the

number of service suppliers; (b) the value of transactions or the assets in the form of numerical quotas; (c) the number of operations or total quantity of services output. National treatment impediments focus on barriers that differentiate nationals from foreigners with regard to taxation, local content requirements or other performance requirements. Dissimilar to the local and foreign distinction under both market access and national treatment impediments, MFN impediments are the differentiation towards services providers by different trading partners (WTO, 2012).

Another approach to the classification of services trade barriers was presented by the APEC Business Advisory Council (ABAC) in its report titled *Understanding Services at the Heart of a Competitive Economy* in 2011. The report divides barriers on trade in services into two groups – "at the border" and "behind the border". At the border barriers usually involve restrictions on commercial presence (mode 3) and visa restrictions on the movement of natural persons (mode 4), and are less restrictive of cross-border trade (via Internet transfer of information) (mode 1) and consumption abroad (mode 2). Behind the border barriers are much greater in number and diversity, and are often linked to over-regulation, absence of regulation, discretionary authority, and significant divergence from commonly accepted international and regional regulatory practices. According to ABAC (2011), at the border barriers are usually not specific to a sector, and tend to be horizontal or cross-cutting. Sector-specific barriers mostly occur behind the border, such as licensing, service standards, and technical regulations for example, and they are less transparent and harder to detect.

Yet another and a more detailed classification of service trade barriers is given by Deardorff and Stern (2008), using a matrix approach interlinking two dimensions – regulations that apply to entry or establishment of firms versus their operations, and regulations that are non-discriminatory versus discriminatory. Table 4.1 provides examples of the four major categories. Regulations in Area I restrict or impede the establishment of service providers, and hence the quantity of services supplied. Regulations in Area II restrict the operation of services businesses, which increase costs e.g., various safety, quality, environmental standards). Regulations in Area III restrict entry of foreign providers and reduce competition by favouring a domestic incumbent. Regulations in Area IV restrict operations of foreign services providers, and hence give advantage to domestic firms.

In terms of measuring the impact of services barriers, the OECD Services Trade Restrictiveness Index (STRI) is the most recent and comprehensive approach. STRI adopts a detailed approach to examining domestic policies affecting trade in services and is not restricted to just trade policies.

Table 4.1. Classification of services trade regulations

Classification example	Entry/establishment	Operations
Non-discriminatory	**Area I:** Licensing procedures	**Area II:** Safety, quality, environmental standards, prudential measures in banking
Discriminatory	**Area III:** Nationality or residency requirements	**Area IV:** Limitations on operation applicable to foreigners

Source: Deardorff and Stern, 2008; Saez, 2010.

Covering 22 sectors[11] across 44 countries, it represents more than 80 per cent of the global services trade. OECD uses the following categories for policies that hinder trade: (a) restrictions on foreign ownership and other market entry conditions; (b) restrictions on the movement of people; (c) other discriminatory measures and international standards; (d) barriers to competition and public ownership; and (e) regulatory transparency and administrative requirements. These measures principally correspond to restrictions under GATS, but include additional restrictions on public procurement, the adoption of international standards, market competition and regulatory efficiency (Nordås, 2012).

Parallel with the ongoing work by OECD, the World Bank has also been conducting an assessment of services trade barriers and compiling the World Bank STRI. The World Bank STRI covers 103 countries and five sectors, i.e., telecommunications, transportation, financial services, retail and professional services. The policy barriers under the World Bank STRI focus on four dimensions: barriers to foreign entry and ownership, licensing requirements, restrictions on operations, and provisions of Bilateral Air Service Agreements. Using a more targeted approach, the World Bank has covered different modes of delivery for different sectors: (a) for mode 1 (cross-border supply), financial services, transportation and professional services; (b) for mode 3 (commercial presence), all sectors are covered; and (c) for mode 4, only professional services. The World Bank STRI does not include mode 2 (Borchert and others, 2013).

It is important to note that not all regulations are put in place to hinder the entry or operation of service providers; there are regulations that aim to achieve legitimate objectives, such as protection of public order and morals,

[11] The sectors covered by the OECD STRI: (a) computer services; (b) construction; (c) professional services (legal, accounting, engineering and architecture); (d) telecommunications; (e) distribution; (f) audio-visual services (broadcasting, motion pictures and sound recording); (g) transport (air, maritime, road freight and rail freight); (h) courier services; (i) financial services (commercial banking and insurance); and (j) logistics services (cargo-handling, storage and warehouse, freight forwarding and customs brokerage).

human life and health, safety and sustainability of environment as well as to guarantee healthy competition and consumer protection. These regulations should not be viewed as protectionist, even though they may also reduce trade in services.

4.2.2. Services trade barriers by sector

Comparing services trade measures in various countries is beyond the scope of this report. However, to understand a character of intervention and protectionism in services trade, it is necessary to provide a sector-level description of frequently used services trade measures. According to the WTO Services Sectoral Classification List (see Annex 4.1), the services classification used when GATS was negotiated as well as for many preferential trade agreements, there are 12 major services sectors, and 55 subsectors that can be further broken down into much finer classifications comprising 160 sub-subsectors (WTO, 1991). Studies typically include analyses on the subsector level. This report provides some examples of barriers and measures at the sectoral level, starting with a higher level of restrictiveness and moving towards more open subsectors.

The barriers on provision of professional services across borders depend on the mode of supply in which they are provided. When supplied by mode 4 (temporary movement of natural persons), professional services face the highest barriers, both in developed and developing countries. There are two distinct types of restrictions. First, countries usually use immigration restrictions to block the entry of foreign service providers even when the movement of such providers is not linked to migration. Second, even after entry, foreign-trained providers need to comply with licensing and qualification restrictions to be able to practice their professions, which is a bigger barrier than the former. However, the difficulties in providing professional services are not only linked to movements of natural persons; they also exist in cross-border delivery and commercial presence alike, which tend to be plagued by barriers (Borchert and others, 2013). Technological advances enable more and more of the professional services to be provided via mode 1, therefore bypassing some of the restrictions (imposed on the movements of natural persons). However, there is still an issue of qualifications and “legality” of services provided online in many of the professional services.

Under professional services, two subsectors facing the highest level of restrictions are legal and accounting services. In many countries, legal representation in courts must be performed by a local law firm; the same goes for conformity with domestic accounting regulations by a local accounting firm. The restrictiveness in both subsectors reflects market

power that arises from the highly customized nature of these services (Rouzet and Spinelli, 2016).

Another highly protected sector is transportation services, especially in high-income countries. Air transportation generally is governed by bilateral air services agreements, and investment in air passenger service subjects to stringent restrictions. Maritime transportation is more liberal, but only for international shipping service, cabotage and auxiliary services are largely restricted. Road freight transportation shows a mixed picture, and a container still faces a longer time to make the domestic leg of an export or import journey in many countries (Nordås and Rouzet, 2015).

Telecommunication services (mostly mode 3 and mode 1) are featured with public monopolies and lack of competition. Foreign ownership is very limited or not permitted at all. Under the consideration of being a strategic industry, barriers to competition are prevalent in the telecommunications sector. This is also a network industry with huge upfront investment, which further enhances the market power of domestic telecom providers (OECD, 2014). As the fourth industrial revolution unfolds, liberalization and reform in telecommunications services would be a determining factor in economic competitiveness.

At the other end of the spectrum, distribution and sometimes even financial services are less protected. Distribution services – despite being relatively open and competitive in many countries – are still subject to a variety of regulations, either discriminatory or non-discriminatory. The discriminatory measures include the ones favouring local incumbents while non-discriminatory measures are to meet, for example, social objectives. In many countries, foreign investment is only allowed through joint ventures, and they need to pass the economic needs test or quotas (Ueno and others, 2014).

Financial services play a crucial role in the functioning of a modern economy. Domination by state-owned banks and insurance companies has gradually given way to increased openness to foreign institutions. However, the overall number of regulations in this sector has been increasing to ever height, with more international standards and practices putting in place. Recognizing the role of prudential regulations to maintain financial stability, many countries reserve the right to impose such measures (Rouzet and others, 2014). Although foreign entry is permitted through commercial presence or trade across borders, the issues lie in allocation of new licenses, control and legal forms, and operational freedom. On the subsector level, banking and reinsurance services are more open than life and automobile insurance services (Borchert and others, 2013).

4.3. Measurement of the restrictiveness of services trade barriers

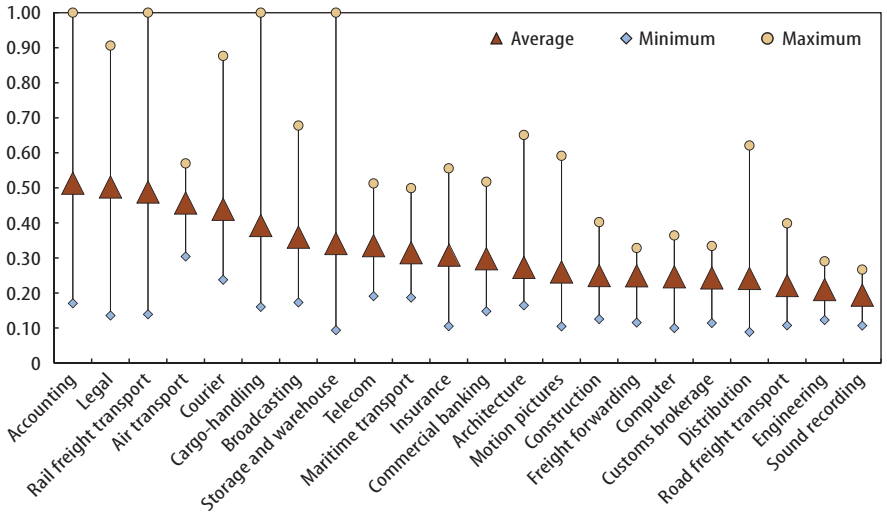
Given their qualitative and opaque nature, measuring the restrictiveness of services trade barriers is a daunting task, although – as noted above – various attempts have been made. There are both direct and indirect ways to measure the impact of services trade barriers (Deardorff and Stern, 2008). Direct measurement is coding qualitative information on a quantitative scale, and deriving a set of "frequencies" of the measures. Frequency is not exactly quantitative; it shows little if anything about how restrictive a measure is and to what extent it affects trade in services. Nonetheless, if compiled across countries, frequency measurement gives a good sense of which country is potentially more restrictive. A common further step is to identify the restrictiveness of each services trade barrier, based on expert assessment. This may well be a better approach if the expert knowledge to assign the weights on restrictiveness is reliable, and the results are comparable across the services industries and time as well as across the countries and even regions.

Indirect measurement follows a more complex procedure, and can be further divided into two types – price and/or costs-based measurement and trade and/or production quantity-based measurement.[12] If one can identify an appropriate elasticity of the response of quantity to price, the two indirect measurements can easily be converted from one to the other. The indirect measurement uses an econometric model – for example, gravity modelling or computable general equilibrium modeling – to establish a benchmark quantity or price under free trade, and the effect of the barrier can be derived after adding the restrictive element(s). In many cases, given that the restrictions are numerous, an index of restrictiveness needs to be constructed in order to measure the overall effect; this would be a combination of direct and indirect measurement approaches. One big problem with indirect measurement is that it may incorporate unrecognized frictions other than policy impediments.[13]

The OECD STRI is, in principle, a direct measurement and it has been the foundation of various studies of the indirect measurement. It establishes a systemic database of restrictiveness scores, spanning the years 2014 to 2017; therefore, it makes it possible to track and compare the liberalization of trade in services across sectors, time and countries. Figure 4.1 presents

[12] In the *World Trade Report, 2012*, price gap and quantity impact are used to term the methodology of indirect measurement of effects of non-tariff measures and services measures (WTO, 2012).
[13] In econometric terms, various issues need to be addressed before conducting indirect measurement, including omitted variable bias, endogenous regressors and unobserved heterogeneity (fixed or random effects).

Figure 4.1. STRI average, minimum and maximum scores of Asia-Pacific economies by sector, 2017



Source: ESCAP based on OECD 2017 data.
Note: Due to limitations in data availability, the data only include Australia, China, India, Indonesia, Japan, the Republic of Korea, New Zealand, Russian Federation and Turkey.

the latest STRI by sector for nine Asia-Pacific countries. It shows, on average, that restrictiveness diverges across services sectors, with accounting being most restrictive and sound recording being most open. Within each sector, the restrictiveness also diverges greatly (difference between the maximum and minimum scores), particularly for accounting services, rail freight transport, and storage and warehousing. The different levels of restrictiveness across countries reflect different regulatory requirements; this constitutes an indirect barrier to trade across borders.

Using indirect measurement, the restrictiveness of barriers on trade in services often follows price and/or costs-based measurement, and is presented either in monetary terms or as tariff equivalents or tax equivalents. Tariff equivalents are usually expressed as a percentage of the value of services imported abroad, making comparison possible in reference to trade in goods. Tax equivalents are commonly expressed as an overall tax on foreign service providers, making comparison possible in reference to domestic suppliers.

Studies have confirmed the significant and sizable detrimental effect of service trade barriers. Borchert and others (2013) noted that restrictions on foreign acquisition, discrimination in licensing and restrictions on capital repatriation suppressed sectoral foreign investment by $2.2 billion over

seven years, the benchmark to an open policy regime. Particularly for banking service, they found that credit as a share of gross domestic product was, on average, 3.3 percentage points lower in countries with major restrictions on foreign establishments in comparison to the countries with operational restrictions only. Focusing on trade in services only, Schwellnus (2007) found that a 10 per cent decrease in OECD product market regulation indicators would yield an increase in trade in services by 12 to 23 per cent.

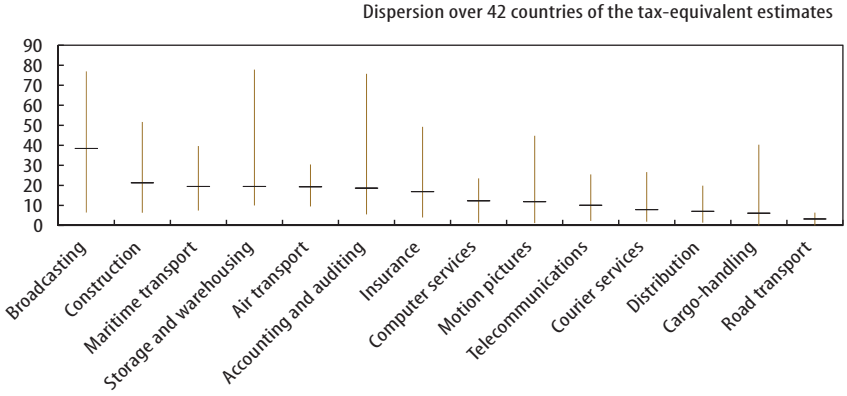
Using the tariff equivalents approach, OECD (2017) revealed that the "tariffs" on foreign services and investment largely exceeded the average tariffs on imported goods, and these "tariffs" affected all modes of services trade. Measured against the ad valorem trade cost equivalent for cross-border services export, the average STRI represents about 142 to 1,800 per cent trade costs for courier service, about 115 to 1,191 per cent for commercial banking services, about 31 to 149 per cent for telecommunications services, and about 32 to 154 per cent for construction services.

OECD also assessed the final cost of a policy environment, factoring in all the potential restrictions on trade in services as well as their effect of reduced competition, and presented the price premium for domestic users of services as a sales tax equivalent on their purchases. This differs from the aforementioned tax equivalent for foreign service traders; nevertheless, it is also an effective way to show severity of barriers on trade in services. Figure 4.2 shows the effect of services trade restrictions across different sectors as an estimated tax for consumers and downstream business customers. Across the board, the sales tax equivalent ranges from 3 per cent in road freight transport to close to 40 per cent in broadcasting. For construction, maritime transport, storage and warehousing, air transport, accounting and auditing, and insurance, the tax equivalent is around 20 per cent; for the rest of the studied sectors, it records about 10 per cent. It is worth noting that in some countries, the tax equivalent can reach as high as 80 per cent.

OECD also analysed the tax equivalent of different restrictive categories shown in figure 4.3. Clearly, different sectors are affected by each restrictive category differently. For example, restrictions on foreign entry and on the movement of people incur more than a 30 per cent tax-equivalent cost for the broadcasting sector, while barriers to competition and regulatory transparency are the only two categories that have an impact on storage and warehousing most (about 18 per cent tax equivalent). Among the five categories, other discriminatory measures and regulatory transparency appear to be less severe for all sectors.

Figure 4.2. Average estimated tax-equivalents of services trade restrictions by sector, 2016

(per cent)

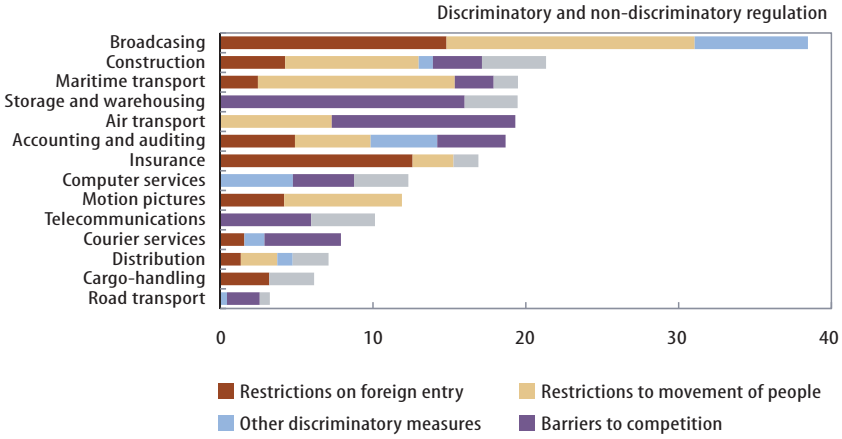


Source: OECD 2017.

Note: The estimates are simply averages of the tax equivalents in 42 countries contained in the STRI database.

Figure 4.3. Average estimated tax-equivalents of services trade restrictions by category, 2016

(per cent)



Source: OECD 2017.

Note: The estimates are simply averages of the tax equivalents observed in 42 countries. Restrictions on foreign entry, the movement of people and other discriminatory measures mostly reflect discriminatory policies, while barriers to competition and lack of regulatory transparency are mainly associated with domestic regulations.

Box 4.1. Implication of services trade barriers on Global Value Chains

GVCs have integrated services and non-service sectors in different countries, and hence service restrictiveness affects the business activities along the whole value chain. Therefore, barriers to trade in services also hinder development of GVCs, and harm the competitiveness of domestic enterprises. In addition, services in GVCs are usually delivered together with goods; thus, trade in services is also sensitive to tariffs and non-tariff measures on goods as well as cumbersome customs procedures and inefficient infrastructure at ports.

Services barriers may occur at different stages along the value chain, so ideally one should map the impact of a barrier according to its corresponding stage(s). For example, a joint venture requirement in retail service is less likely to affect the production of the distributed goods as well as other upstream services. However, it requires huge input of time and resources to measure and compare the barriers along the value chain. In particular, when services are embodied in intermediate goods, which cross borders multiple times before becoming final goods, the effects of service trade barriers may be compounded. This further complicates studies on restrictiveness of service trade barriers.

This section has examined the complexity and diversity of barriers on trade in services. Although analysing service trade barriers is quite difficult due to their multiple dimensions, it is undeniable that barriers have a significant trade-contracting effect. It is imperative for policymakers to address such barriers and to tap the potential of trade in services. The next section presents a review of existing liberalization efforts carried out at the multilateral, plurilateral and national levels.

4.4. Liberalization of trade in services

Services industries in many countries face an opaque, complex, uncoordinated, overlapping and burdensome regulatory regime. Restrictiveness of service trade barriers creates enormous costs for business and for the economy as a whole[14]; conversely, liberalization of services trade brings substantial and multifold benefits – cheaper imports of

[14] Given the qualitative nature of services trade barriers, many studies face difficulties in quantifying their effects. Dincer and Tekin-Koru (2017) used the World Input-Output Database to identify the impact of policy-induced services trade barriers in five sectors, i.e. finance, knowledge intensive producer services, telecom, transport, and wholesale and retail. Based on data from 2000 to 2014, they found significant and robust adverse effects of services trade barriers on goods trade. Counterfactually, removing barriers in telecom, transport, and wholesale and retail would increase goods trade between advanced countries by 32 to 229 per cent; removing barriers in finance, transport and wholesale and retail, could increase goods trade between advanced and emerging countries by 8 to 122 per cent; and removing barriers in knowledge intensive producer services, transport, and wholesale and retail could increase good trade between emerging countries by 100 to 227 per cent.

services would increase economies of scale and scope, improve productivity of domestic enterprises, facilitate transfer of knowledge, and enhance consumer welfare and overall economic competitiveness. Because of the characteristics of services trade barriers, both liberalization and deregulations have to take place to produce freer and more efficient trade in services.

4.4.1. Services liberalization vs. deregulation

Before taking stock of existing liberalization efforts, it is essential to clarify what services liberalization means and how it is different from services deregulation. According to Francois and Hoekman (2010), services liberalization is "a reduction in discrimination against foreign suppliers, taking as given (assuming) that the realization of regulatory objectives is not affected". Saez (2010) interpreted liberalization at three levels: first, it means allowing private suppliers to provide services (instead of state-owned enterprises only); second, it means allowing foreign suppliers to provide services (instead of domestic enterprises only); third, it means allowing foreign suppliers to provide services through different modes of services supply. In general, services liberalization implies removing restrictions that lead to inefficient and non-optimal services supply and instead to creating a competitive or contestable market.

Unlike liberalization, services deregulation has a different focus; it emphasizes the transformation towards or the establishment of "a new regulatory environment that ensures the provision of services in a market-oriented framework" (Saez, 2010). According to OECD (2003), deregulation is a subset of regulatory reform and refers to complete or partial elimination of regulations in a sector to improve economic performance. Complete deregulation is never recommendable, because market failure often arises due to externalities, imperfect and asymmetric information as well as monopolistic market structure, which necessitates regulation. Deregulation suggests a "decrease" in government intervention (Ospina, 2002), but does not necessarily involve the opening of domestic markets as prescribed under liberalization.

Although different, liberalization and deregulation are not de-linked. As liberalization progresses, complementary regulations need to be introduced in company to address market failures, in order to ensure liberalization yields the expected benefits to consumers and to the overall economy.

4.4.2. General Agreement on Trade in Services

At the multilateral level, GATS provides rules governing international trade in services under eight principles (box 4.1). Negotiated in Uruguay Round, the scope of GATS is broad enough to cover all the commercial services,[15] except for air transportation services and those directly related to air traffic. GATS has three components: (a) the main text, which specifies the general obligations and disciplines; (b) the annexes that lay out sector-specific rules; and (c) the individual schedule of commitments that detail market access and areas temporarily not applying MFN treatment,[16] also called "MFN exemptions" (WTO, 2017d).

Box 4.2. Basic principles of the General Agreement on Trade in Services

1. All services are covered by GATS.
2. MFN treatment applies to all services, except the one-off temporary exceptions.
3. National treatment applies in the areas where commitments are made.
4. Transparency in regulations, inquiry points.
5. Regulations have to be objective and reasonable.
6. International payments: normally unrestricted.
7. Individual countries' commitments: negotiated and bound.
8. Progressive liberalization: through further negotiations.

Source: WTO, 2017.

Under the individual country schedule of commitment, WTO members decide their own commitments on sectors and modes that are open to competition from foreign suppliers, following a "positive list" approach. Under this approach, the commitments include only sectors that are open to trading partners and the extent of market access being offered in those sectors.[17] This means there is no unified standard on openness of services sectors, and there is no information about restrictions in the non-committed sectors. Countries have the discretion to impose new rules and restrictions in the non-committed sector, which induces huge uncertainty and unpredictability for business that intend to trade or invest in services (ABAC, 2011).

[15] GATS does not cover services offered by government authorities.
[16] MFN means treating all the trading partners equally on the principle of non-discrimination – "favour one, favour all" in short.
[17] This is in contrast to a negative list approach, where the commitments include only sectors that are not open to trading partners, implying sectors not included are completely open.

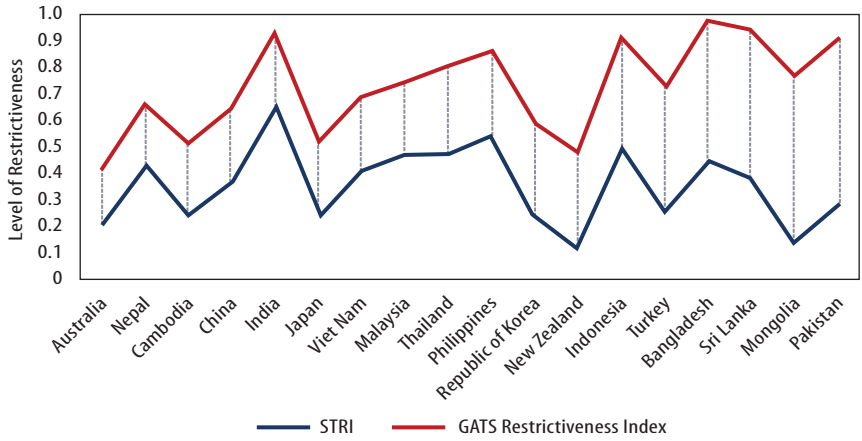
In nearly all schedules, commitments are split into two sections – horizontal commitments that apply to all the sectors, and commitments by sector and by mode. Each mode of a service has two different commitments – market access and national treatment. GATS defines six types of limiting free market access – four quantitative restrictions on service suppliers, the value of transactions, service operations or employees in the sector, and two additional ones on types of legal entity and on foreign equity participation (Viilup, 2015; WTO, 2017b). National treatment under GATS is, in a way, conditional on market access commitment and concerns whether some rights are granted to local companies only. For example, if foreign banks are only permitted to operate one branch while there is no such limitation on domestic banks, then it needs to be put under commitment on national treatment. The GATS commitments have a legal effect similar to a tariff binding,[18] however, and withdrawals or modifications could have been made three years after GATS entry into force.

From the very beginning, GATS has been criticized for its limited level of liberalization. GATS, in practice, "locked in" only a small subset of services trade policies that WTO members implemented on a unilateral basis (Adlung and Roy, 2005), leaving plenty of space for appearance of water in their GATS commitments. Countries in fact have had put in place more liberal trade policies. Hoekman and Mattoo (2013) assessed the bindings (policy commitments) under GATS and the level of openness of prevailing services policy regimes, and they found that commitments under GATS were on average 2.3 times more restrictive than enforced policies. This indicates that countries could easily double their services trade barriers without violating their commitments under GATS.

Using the World Bank STRI, the ESCAP has compared the level of restrictiveness according to existing laws and regulations of some Asia-Pacific economies (given data availability) with their current commitments under GATS, and presented the difference (figure 4.4). As the actual level of trade restrictiveness is often far lower than the level of trade restrictiveness permitted by GATS commitments, the band between two lines is graphically depicted as "water in the countries' GATS commitments". Among these Asia-Pacific economies, Australia, Nepal, and Cambodia have less 'water' in their GATS commitments, while for Sri Lanka, Mongolia, and Pakistan, the level of 'water' is quite substantial.

[18] A parallel to tariff bindings can be interpreted as meaning that once the GATS commitment is made, a country cannot impose new measures on foreign services/foreign service providers that would restrict their market access below the level specified in GATS.

Figure 4.4. Water in the GATS' commitments for selected countries – Average for 12 sectors, 2014



Source: Figure of Box 5.2 in Chapter 5 Liberalization or Protection: Trade Policy at a Crossroads in ESCAP, 2014.
Note: ESCAP calculation based on the World Bank STRI and World Bank World Trade Indicators. The World Bank STRI scores are based on the World Bank assessment of openness across five sectors: finance, transport, telecoms, professional services and retailing. The degree of restrictiveness of GATS commitments is based on the World Bank Trade Indicators that cross the 12 standard service sectors in GATS. Scores have been adjusted to put them in the same range (0-1) as STRI scores.

From sector perspective, taking average of the STRI across covered countries, Miroudot and Pertel (2015) identified the sources of the 'water' in GATS commitments. As many countries have not made commitments in broadcasting, motion pictures, sound recording, transportation and courier services under GATS, there is no limitations on countries to impose any type of restrictions, including bans, on transactions in those sectors meaning that these sectors have the highest level of "water". Legal services also face a high level of "water", because commitments made under GATS are mostly partial. In addition, for computer, construction, accounting, architecture, engineering, telecommunications and distribution services, "water" mainly comes from low commitments. This exercise further confirms that GATS commitments are not good references for conducting trade in services – with substantial "water" in GATS, Governments can easily roll back service trade barriers, as illustrated in the wake of the global financial crisis (Lodefalk, 2015).

Article XIX of GATS mandates a progressive liberalization of trade in services through successive rounds of negotiations, beginning not later than five years from its date of entry into force. Accordingly, the negotiations began in January 2000. In March 2001, the Guidelines and Procedures for

the Negotiations on Trade in Services were adopted by the Council for Trade in Services. At the Doha Ministerial Conference in November 2001 the services negotiations became part of the "single undertaking" under the Doha Development Agenda, whereby all subjects under the negotiations are to be concluded at the same time.

WTO has attempted to achieve further trade in services liberalization through "improved" offers on commitment under the Doha Round of negotiations, which was launched in 2001 and initially aimed at conclusion by 1 January 2005. For the Doha Round, around one-third of WTO members have submitted a Doha Development Agenda Services Offer,[19] but some of these countries have not declassified their offers. Borchert and others (2011) found that the Doha Round offers did not add much substance in terms of liberalization, and that even if these offers were implemented, they would still be 1.9 times more restrictive than the actual applied regimes. From 2008 onwards, the Doha negotiators have been "caught between a rock and a hard place",[20] due to the traditional mercantilist paradigm as well as technical, economic and political frictions (WTO, 2017c).

During the past decade, GATS has increasingly been viewed as lacking progress and usage. WTO (2017c) has announced that "there has been virtually no liberalization under GATS to date". According to ABAC (2011), the nature of a multilateral "Round" and the WTO concept of a single undertaking are two major factors eroded the prospects of GATS. In practice, the modalities and technicality of GATS work against its application. For example, GATS schedules appear to be overly complex and the texts are hardly intelligible to business people; the uncertainty associated with non-committed sectors and "water" in committed sectors involves a huge cost in interpreting the real openness.

In addition, GATS has been poorly used in notifying and discussing trade issues and resolving disputes (Lodefalk, 2015). As of December 2017, only in 28 cases of consultations to resolve disputes on trade in services have the parties referred to GATS, while the corresponding registered number that used the General Agreement on Tariffs and Trade (GATT) for trade in goods is 435 cases (WTO, 2017a). Although GATS has set out some general guidelines and principles on trade in services, it appears to have no prospects, which leaves the fine print to be filled in by plurilateral or bilateral free trade agreements.

[19] The Hong Kong Declaration expressly exempted least developed countries from submitting offers, so more than 80 per cent of the members that are supposed to submit an offer have done so.
[20] Negotiations for the Doha Round of trade liberalization have been suspended indefinitely.

Box 4.3. Services Waiver for least developed countries under GATS

Under WTO, another multilateral mechanism for trade in services is for the least developed countries. As early as in 2005, at the sixth WTO Ministerial Conference in Hong Kong, China, WTO had already adopted a decision on duty-free and quota-free market access for least developed countries' trade in merchandise (WTO, 2015), but there was no equivalent non-reciprocal preferential access arranged for least developed countries on trade in services. Only in 2011, least developed countries had been finally granted preferential access on trade in services – under a Services Waiver mechanism to GATS MFN provisions for 15 years until 2026 (Arbis and Heal, 2015). At the WTO Ministerial Conference in Nairobi in 2015, the Services Waiver was extended for four additional years until 31 December 2030.

At the beginning, the progress on implementation of the Waiver was very slow, so during the 2013 WTO Ministerial Conference in Bali, WTO members decided to adopt a plan to make it operational. Following the plan, least developed country members of WTO identified that services trade barriers they faced were in the forms of "obstacles to recognition of least developed country educational institutions, diplomas, and professional skills; imposition of transit taxes and other fees on tourists travelling to least developed countries; and onerous application fees for visas, licences, and residence and work permits (WTO, 2014). Based on these barriers, in July 2014, the least developed countries submitted a collective request containing sectors and modes of particular export interest to them, covering three groups of preferential treatment:

a) Market access, and national treatment restrictions;
b) Visas, work permits, and residence permits; and
c) Recognition of qualifications of least developed country professions and accreditation of least developed country institutions.

At the WTO Services Council in February 2015, 25 WTO members indicated their intentions to provide preferential treatment to least developed country services and suppliers as well as targeted and coordinated technical assistance to strengthen the domestic and export services capacity of the least developed countries. As of December 2017, 24 WTO members had submitted notification of preferential access offers: Australia; Brazil; Canada; Chile; China; European Union; Hong Kong, China; Iceland; India; Japan; Liechtenstein; the Republic of Korea; Mexico; New Zealand; Norway; Panama; Singapore; South Africa; Switzerland; Taiwan Province of China; Thailand; Turkey; the United States; and Uruguay.

A quick assessment of these preferential offers shows that although concessions have been made by a significant number of economies, these offers fall short of the requests made by least developed countries, especially concerning mode 4 movement of natural persons. According to the table below, full liberalization on mode 1 and mode 2 is provided by the majority, i.e., 17 and 20 economies, respectively, while on mode 4, only 10 economies are partially liberalized for least developed countries.

Box 4.3. (continued)

Number of economies providing preferences to least developed countries under Services Waiver

Liberalization	Mode 1	Mode 2	Mode 3	Mode 4
Fully	17	20	13	0
Partially	3	1	9	10

Source: ESCAP based on WTO S/C/N Notifications, accessed December 2017.

On the sector level, transportation, travel and other commercial services account for a substantial share in exports by least developed countries, but not all the notifications under the Services Waiver contain concessions for least developed countries – 19 economies offer preferences on transportation, 15 economies on travel, and 23 economies on other commercial services. A detailed list of preferences offered under the Service Waiver is given in Annex 4.2.

Special preferential treatment in services trade for the least developed countries was intended to assist them in achieving some of the targets under the Sustainable Development Goals (SDGs), i.e. targets under the SDG 9 on economic diversification and 17.11 of SDG 17 on doubling their share in world exports. UNCTAD (2017) estimated that the least developed countries' share in global services exports rose from 0.6 per cent in 2010 to 0.7 per cent in 2016 (in contrast to their share in manufacturing exports which fell from 1.1 per cent to 0.9 per cent in the same period).

4.4.3. Trade in Services Agreement

WTO Doha Round negotiations reached a deadlock, and yet a post-Doha agenda on the multilateral level has not been put on the negotiation table. In the meantime, new challenges and regulatory barriers to trade in services have been emerging, so the pressure and urgency for liberalizing trade in services keep on rising. Some WTO members have explored a way forward, which is for a subset of WTO membership to negotiate a plurilateral agreement, which might be more effective than multilateral efforts (Hoekman and Mattoo, 2013).

In March 2013, a group of like-minded countries launched the negotiation on the Trade in Services Agreement (TiSA), to further liberalize services trade by developing new and enhanced disciplines. Building upon GATS, negotiators of TiSA wish to update the rules to reflect the new trading landscape, so TiSA aims not only to reach a higher level of liberalization, but also to go beyond GATS' scope to cover new areas of trade in services

(Stephenson and others, 2016).[21] TiSA is designed to unlock the vast economic potential of liberalized trade in services.

Currently, there are 23 participants in the TiSA negotiation and all are WTO members. They are: Australia; Canada; Iceland; Chile; Colombia; Costa Rica; the European Union (of 28 members); Hong Kong, China; Iceland; Israel; Japan; the Republic of Korea; Liechtenstein; Mauritius; Mexico; New Zealand; Norway; Pakistan; Panama; Peru; the Separate Customs Territory of Taiwan Province of China, Penghu, Kinmen and Matsu (Taiwan Province of China); Switzerland; Turkey; and the United States. Collectively, they represent more than 70 per cent of global trade in services. In 2015, Uruguay and Paraguay dropped out of the TiSA negotiations, due to domestic opposition. China expressed its interest in joining the TiSA negotiations from the beginning in 2013; however, its application is still pending, because of opposition from the United States and Japan, who worry China will water down the overall commitment level (Stephenson and others, 2016).

TiSA is a services-only agreement; if concluded, it will have deeper commitments than GATS. TiSA adopts a "hybrid approach" to the listing of commitments, where market access commitments are subject to a positive list (showing only sectors open to foreign competition), while national treatment commitments are based on a negative list (showing only exceptions to national treatment). It is also agreed that under TiSA, standstill and ratchet clauses[22] only apply to national treatment, and not to market access in terms of liberalization. This hybrid listing represents a significant step forward from GATS, which has a positive list for both market access and national treatment (Viilup, 2015). Additionally, "TiSA would include several sector-specific and/or horizontal thematic chapters that would consist of significant regulatory disciplines" (Stephenson and others, 2016).

The TiSA negotiations have, so far, been conducted outside the WTO framework, but the ultimate goal is to transform it into a WTO agreement by broadening participation to all WTO members. However, there has already been opposition by a few members on incorporation of a plurilateral

[21] Negotiating parties have proposed new areas of services to be included under TiSA: delivery service; direct selling service; domestic regulation; electronic commerce; energy-related services; environmental service; export subsidies; facilitation of patient mobility; financial services, government procurement; localization; movement of natural persons; professional services; state-owned enterprises; telecommunications; transparency; and transport services (air, maritime, road). As the negotiation is still ongoing, it is possible that not all the proposed new areas will be included in the final agreement.

[22] A standstill clause is a provision through which the Parties commit to keep the market at least as open as it was at the time of the agreement. A ratchet clause is a provision through which the Parties commit that, if they unilaterally decide in the future to further open up their respective markets in specific sectors, such opening would be "locked in" – i.e., there can be no step backwards (European Commission, 2016).

agreement into the WTO (Hoekman and Mattoo, 2013). Whether TiSA can eventually be multilateralized as a WTO agreement depends on two factors – first, whether the signatory parties account for a "critical mass" of world trade in services, and second, how the TiSA negotiations fit in the various multilateral and plurilateral negotiations, especially the timing of the conclusion of TiSA in relation to other negotiation processes (Stephenson and others, 2016).

Like any other trade negotiations, the TiSA talks are not carried out in public and negotiation documents are not published. Therefore, it is hard to assess the potential impact of TiSA. A 2013 study suggested that if TiSA could cut tariff-equivalent barriers for cross-border services by 50 per cent among negotiating parties, it would increase the value of European Union exports of services by $21 billion and those of the United States by $14 billion (Viilup, 2015).

As of now, negotiating members have conducted 21 rounds of TiSA negotiations, and since November 2016, the negotiations have been on hold. The members will resume the negotiations when the political context allows (European Commission, 2017). For TiSA, there is no formally agreed deadline for the negotiations.

Box 4.4. Extension of TiSA benefits to least developed countries?

Before the stalemate in late 2016, some TiSA members, for example the European Union, United States and Mexico, have expressed their willingness to extend market access granted to TiSA members to least developed countries upon the conclusion of the negotiation. If least developed countries could gain further market access through the TiSA, it would definitely give services exporters in least developed countries an advantageous position against the rest non-TiSA members; however, there may not be a huge boost to their exports, because services providers from least developed countries would then need to compete on the equal ground with the TiSA service exporters, of whom majority are bigger and stronger than least developed countries ones, and potentially enjoy better terms of trade.

Whether least developed countries can benefit concretely from an extension of TiSA depends on several factors: first, the final terms of TiSA, including market access and national treatment in various sectors; second, whether least developed countries could utilize the granted preferences to build up capacity, so they could compete effectively with TiSA and non-TiSA members. Due to the changing attitude towards globalization, the conclusion of the TiSA negotiations remains with great uncertainty, therefore, least developed countries might need to wait for quite long before the benefits of extended preferences can yield. But in the meantime, least developed countries could try to tap the potential of Services Waiver under GATS, to build up services export capacity and competitiveness.

4.4.4. Preferential liberalization of services trade

In addition to the plurilateral negotiation of TiSA, another frontier where trade in services liberalization takes place is through preferential trade agreements (PTAs).[23] The three earliest agreements that cover trade in services are the European Union, the Australia-New Zealand Closer Economic Relations Trade Agreement, and the Canada-United States Free Trade Agreement. Studies show that binding the existing regime has a direct impact on the volume of bilateral trade, which confirms that a predictable regulatory environment supports trade growth (OECD, 2017). Therefore, since the 1990s, PTAs have abounded, and as the liberalization of trade in services at the WTO entered an impasse, an increasing number of PTAs began to take in commitments on services.[24]

Given that services are more affected by the behind-the-border regulatory measures, services have been a major feature of PTAs aimed at deeper economic integration. Before 2000, only six PTAs with services commitments had been notified to WTO; by 2017, more than 140 additional agreements containing services provisions were in force. Currently, in the Asia-Pacific region, currently there are 172 enforced trade agreements, of which 77 cover services. Many agreements that initially covered only goods have been reviewed and expanded to services. Examples are the PTAs between ASEAN and its partners, the Pacific Island Countries Trade Agreement – Trade in Services Protocol, and the South Asian Association for Regional Cooperation Agreement on Trade in Services. With regard to liberalization and clarification of rules for trade in services, PTAs enjoy success in terms of binding regulations and providing disciplines on qualification, technical and licensing requirements.

Compared to the liberalization under WTO, PTAs include some additional disciplines that go beyond GATS. For example, many PTAs bring in topics such as competition policy, electronic commerce and intellectual property rights, which are applied both to goods and to services exports. More recent PTAs also tend to cover issues related to transparency, which is more important for services exporters. Moreover, a large number of new PTAs have also started to include comprehensive disciplines on investment – not only providing market access for investors but also guaranteeing national treatment for investment and investors from signatory partners. On

[23] In this chapter, a preferential trade agreement depicts a reciprocal agreement with two or more countries that grant preferential market access to each other in the form of a regional trade agreement, covering goods and services as well as other issues such as investment, IPR, trade facilitation, environment etc. Using WTO terminology, an agreement that covers preferential liberalization in services is called Economic Integration Agreement (EIA).

[24] PTAs signed with major services exporters – Japan, the United States, and the European Union – all include commitments on services (Saez, 2010). Most twenty-first century PTAs cover mode 1 and mode 3 of trade in services, while only some PTAs with Japan cover mode 4 (Baldwin, 2014).

services trade alone, some PTAs have ventured further to cover temporary movement of service providers, particularly a few new North-South PTAs that have even added new categories of workers.[25] In addition, many PTAs now consist of disciplines on government procurement both for goods and for services,[26] while the WTO Government Procurement Agreement does not have rules for services. A similar area is subsidies, which are featured with progress in a couple of PTAs but not in GATS (Stephenson and Robert, 2011).

Overall, PTA commitments significantly outperform GATS and achieve a higher level of liberalization ambition (Roy and others, 2006). This confirms the expectation that under GATS Article V on Economic Integration, PTAs are supposed to reach a deeper commitment level (Adlung and Mamdouh, 2013). In terms of liberalization approach, some PTAs adopt the GATS positive list model, such as the FTA/RTAs between European Free Trade Association (EFTA) and the Republic of Korea, Thailand and Australia, and Japan and Singapore; some adopt a negative list approach, such as the FTAs between the Republic of Korea and Singapore, Japan and Mexico, and the Republic of Korea and Chile. These PTAs generally cover all services and all modes of supply.

It is beyond the scope of this chapter to examine the depth of services commitments of each PTA. However, a reference to an in-depth evaluation of 40 PTAs by Adlung and Mamdouh (2013), could provide a good understanding of services commitments under PTAs compared to GATS. Among the 40 selected PTAs, 19 agreements are based on a positive-list approach and 21 agreements on a negative-list approach. When comparing commitments under these two approaches, it is evident that bindings under the negative-list agreements realize more GATS+ results – almost twice as high as positive-list agreements on market access, and three times as high on national treatment. In terms of cross-cutting horizontal limitations, negative-list PTAs are more restrictive than positive-list PTAs in the respective GATS schedules. Last, the MFN clause refers to the cross-reference to the parties' GATS schedules, which neutralizes any GATS minus provisions. If included in calculations, then 48 per cent of the positive-list agreements have GATS minus elements and 70 per cent of negative-list agreements have GATS minus elements (Adlung and Mamdouh, 2013).

An additional beyond-WTO liberalization of PTAs is that they sometimes include a "ratchet clause" that makes them effectively a "dynamic"

[25] Under the Canada-Colombia FTA and Canada-Peru FTA, there are no numerical limits on the movement of natural persons (mode 4), and the category of "technicians" has added for mode 4.
[26] PTAs with the United States, the European Union, Japan, Chile, Mexico and Singapore all include government procurement, both for goods and for services.

liberalization instrument (Stephenson and Robert, 2011). Based on the ratchet clause, binding liberalization provides for future PTA partners to automatically be granted to the incumbent PTA's partner. The ratchet clause cannot be reversed, so this means that all the PTA parties will effectively move to wider liberalization and there will be no backtracking. In some analyses, the ratchet clause is also called "non-party MFN clause". Without causing the "spaghetti bowl problem" by PTAs on trade in goods, the ratchet clause avoids a tangle of bilateral preferences on trade in services by automatically making the most liberal provision accessible to all parties (Baldwin, 2014).

As PTAs increasingly rule international trade, some scholars worry that the sheer number and the diversity of PTAs will undermine governance at the multilateral level. However, the slow progress of multilateral negotiations also imposes risk and uncertainty on trade in services. PTAs, as an alternative to multilateral liberalization, create a more stable policy environment for trade in goods and services. In addition, they open a path for introducing unilateral reforms in a gradual manner and provide rules that cannot be arbitrarily modified. As PTAs are a reciprocal market liberalization, they face less political opposition or pressure compared with unilateral services reform.

4.4.5. Unilateral service reforms

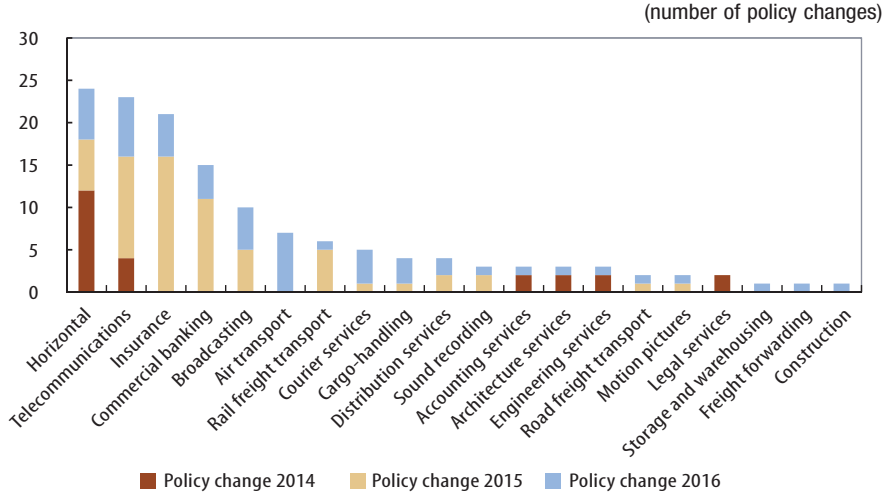
Recognizing the dampening effect of various restrictions on trade in services, countries are also scaling back discriminatory measures towards foreign providers as another channel to advance towards further services trade liberalization. Research indicates that all the modes of services supply are often complementary, in that trade in one mode stimulates or even relies on trade in others. Therefore, selective liberalization by mode and by sector at the multilateral, plurilateral, and bilateral levels may not yield the maximum benefits (Swedish National Board of Trade, 2012). This can be interpreted as showing unilateral domestic reforms are perhaps the most effective way of opening up the services sector.

Regulations take many different forms, and are designed according to the nature of the service being regulated. As discussed in the previous section, service trade barriers arise when regulations are of a discriminatory nature and without a legitimate purpose. Hence liberalization of trade in services is essentially to address these regulatory measures, and to review and improve the design and functioning of domestic regulatory and institutional frameworks. However, services liberalization and regulation need to go in tandem to ensure fair competition and consumer protection; once liberalized, remedying a market failure is more complex as the service provider may be located abroad. One common challenge to all

Governments is ensuring adequate content, pace and sequencing of liberalization-cum-regulatory processes (UNCTAD, 2016).

The diversity of services attracts the diversity of services regulations, which further translates to the diversity of services liberalization. Studies on unilateral regulatory reform show a mixture of different approaches, perspectives and depth. When comprehensively comparing the unilateral service reforms by sector across time, the OECD STRI is, so far, the only reference (figure 4.5). During 2014-2016, the largest number of policy changes that affected services trade occurred on the horizontal level, i.e., across sectors and modes. Telecommunications, insurance, commercial banking and broadcasting also saw a large number of regulation changes, ranging from 10 to 23 changes. Accumulatively, different sectors experience structural reforms in different years, for example, reform for legal services happened in 2014, reform for financial services was mainly in 2015, and reform for several transportation services took place in 2016.

Figure 4.5. Policy changes in the STRI, 2014-2016

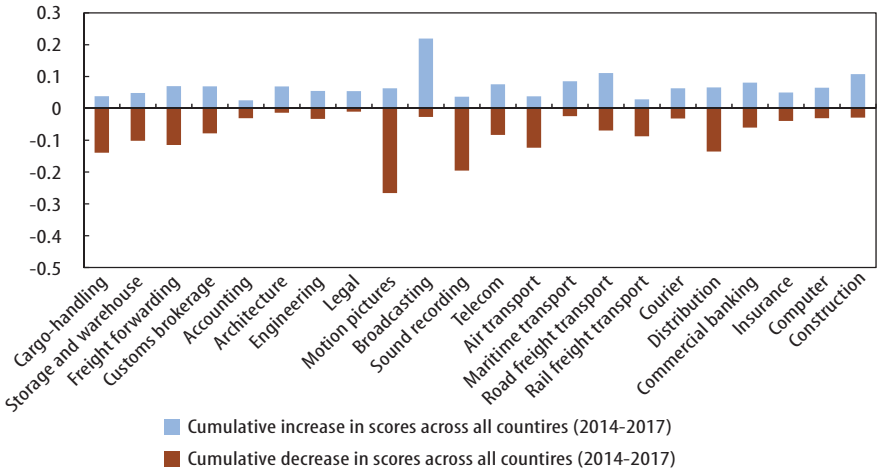


Source: OECD 2017.

Not all the policy reforms have equivalent effects on STRI. Figure 4.6 shows the cumulative effect of reforms during 2014-2016 on services restrictiveness. Overall, the reforms are more pro-liberalization, as shown by the blue bar, especially for sectors such as cargo-handling, motion pictures, sound recording, air transport and distribution. However, figure 4.6 shows that across the board, there are also reforms that make the policy regime more restrictive (gray bars); this is particularly pronounced for broadcasting and, to a lesser extent, for road freight transport and construction.

Figure 4.6. Policy changes induced changes in the STRI, Asia-Pacific economies, 2014-2017

(cumulative increase and decrease in scores)



Source: ESCAP based on OECD 2017 data.
Note: Due to limited data availability, the data only include Australia, China, India, Indonesia, Japan, the Republic of Korea, New Zealand, Russian Federation and Turkey. Data used in this figure are the simple sum of change in STRI of each country.

Regarding specific policy reforms, OECD (2017) pointed that during 2014-2016, liberalization policies were mainly the relaxation of conditions on foreign establishment and residency requirements for boards of directors as well as the removal of minimum capital requirements for registering limited liability companies and the conditions for capital transfers, among others; restrictive policies mainly covered on labour market tests and the duration of stay for service providers (mode 4). The quality of policies, regulations and institutional frameworks have a determining effect on services performance. As market conditions evolve, policymakers face the challenge of constantly adapting regulatory instruments and approaches to public policy needs (UNCTAD, 2016).

The analysis of liberalization at the multilateral, plurilateral and bilateral levels shows that, due to political, economic, and social considerations, Governments prefer to undertake reforms domestically first and then commit these within trade agreements when appropriate (Stephenson and Robert, 2011). Therefore, autonomous policy reforms are the real drive behind services trade liberalization.

This section has presented an overview on the various liberalization efforts taking place at multilateral, plurilateral and bilateral levels. GATS laid the foundation for liberalization in trade in services; however, it subsequently

failed to achieve concrete openness. While TiSA is a promising step made by a group of WTO members, it faces huge uncertainty with the emergency of protectionism globally. Therefore, one would need to see the final outcome of TiSA, especially its application.[27]. PTAs, as another platform for liberalization, have achieved deeper commitments and made liberalization beyond GATS. Last, based on examination, the unilateral regulatory reforms are the real drive for liberalization in trade in services. The fine balance between trade liberalization and the right of States to regulate is a matter for long debate, but it is certain that for trade in services, liberalization and regulation need to go hand-in-hand in order to realize the maximum economic welfare.

4.5. Key points of the chapter

This chapter has conducted an in-depth analysis of barriers on trade in services and a comprehensive overview of liberalization efforts to date. Focusing on the diversity of services trade barriers and their diverse impacts, the chapter presents a complete picture of the policy environment that governs trade in services. Barriers are detrimental to international trade and investment in services, and there is increasing evidence that liberalization is a major potential source of broader economic gains from trade in services.

Many services activities are infrastructural or “enabling” of competitiveness in other industries and other services sectors. For developing countries and least developed countries in particular, services liberalization is key to achieving regulatory reform and economic upgrading in order to realize trade diversification as well as overall economic resilience and competitiveness. Dynamic trade in services can contribute to a healthy global economy and, ultimately, to the Sustainable Development Goals.

As trade in services continues to increase in importance, liberalization of service sectors should take a high priority in national trade policy. Based on the discussion in this chapter, the following policy insights should be taken into consideration in the policy-making process:

- Given the distinct nature of service trade barriers, targeted policy reforms need to identify the main bottlenecks in the interconnected services sectors as a whole, taking into account the divergence of regulations across different sectors. Policymakers could establish an

[27] It is unclear at this stage whether TiSA will be applied on an MFN basis as a plurilateral commitment under WTO, such as the Information Technology Agreement, or will be applied as a closed-door plurilateral, like the Government Procurement Agreement.

effective and constant channel of communication- and information-sharing among different services regulators domestically, in order to ensure regulatory coherence behind the border;

- As reflected in the maximum and minimum STRI scores in each sector, regulatory divergence exists among countries and is an indirect barrier to trade in services. Regulatory cooperation is needed in order to (i) reduce compliance costs in different jurisdictions and (ii) ensure ease of doing business across borders. In this regard, Governments can consider a mechanism or platform for sharing experiences regarding services regulation and reform, and for identifying best practices that can be applied across borders;
- Nowadays, trade in services involves a combination of modes, a bundle of goods and services, and a mix of digital products and face-to-face interaction (OECD, 2017). Thus, selective liberalization will not yield the maximum benefits, especially with restrictions on mode 4. Full liberalization of trade in services could result in a rise of $1.7 trillion in global gross domestic product, which is double the gains from liberalization in industrial goods and 31 times greater than the projected gains from agriculture liberalization (ABAC, 2011). The unfolding of the fourth industrial revolution also strengthens the case for unilateral, comprehensive liberalization of trade in services, as efficient access to services is critical for hi-tech industries;
- A predictable regulatory environment supports trade in services. Although unilateral reforms are the real drive behind services liberalization, locking in the existing policy regimes under trade agreements provides assurance to service suppliers. On top of this, better market access is provided under trade agreements without causing the "spaghetti bowl" problem for trade in services. Therefore, policymakers could consider pursuing more PTAs with services liberalization concessions or reviewing existing PTAs to include services elements, keeping in mind that the "spaghetti bowl" problem for trade in goods should not be worsened;
- As in the case of goods, the development of global services value chains is making many of the current trade rules for services less relevant, because these rules are designed for services that are exported as final activities (Stephenson, 2012). The present framework does not reflect the trading activities along the global value chains, where multiple suppliers and multiple locations are interwoven to produce a final product or service. Therefore, policymakers need to review the international policy regime for trade in services and take actions to modernize the outdated rules.

Annexes

Annex 4.1. WTO services sectoral classification list

	Sectors – major categories	Subsectors
1	Business services	A. Professional services B. Computer and related services C. Research and development services D. Real estate services E. Rental/leasing services without operators F. Other business services
2	Communication services	A. Postal services B. Courier services C. Telecommunications services D. Audiovisual services E. Other
3	Construction and related engineering services	A. General construction work for buildings B. General construction work for civil engineering C. Installation and assembly work D. Building completion and finishing work E. Other
4	Distribution services	A. Commission agents' services B. Wholesale trade services C. Retailing services D. Franchising E. Other
5	Education services	A. Primary education services B. Secondary education services C. Higher education services D. Adult education E. Other education services
6	Environmental services	A. Sewage services B. Refuse disposal services C. Sanitation and similar services D. Other
7	Financial services	A. All insurance and insurance-related services B. Banking and other financial services C. Others
8	Health related and social services	A. Hospital services B. Other human health services C. Social services D. Other
9	Tourism and travel related services	A. Hotels and restaurants (incl. catering) B. Travel agencies and tour operators services C. Tourist guides services D. Other

	Sectors – major categories	Subsectors
10	Recreational, cultural and sporting services (other than audiovisual services)	A. Entertainment services (including theatre, live bands and circus services) B. News agency services C. Libraries, archives, museums and other cultural services D. Sporting and other recreational services E. Other
11	Transport services	A. Maritime transport services B. Internal waterways transport C. Air transport services D. Space transport E. Rail transport services F. Road transport services G. Pipeline transport H. Services auxiliary to all modes of transport I. Other transport services
12	Other services not included elsewhere	

Source: WTO, 1991.

Annex 4.2. Services Waiver for Least Developed Countries

4.2(a). Preferences offered under Services Waiver by mode

Liberalization	Mode 1	Mode 2	Mode 3	Mode 4
Fully	Australia; Canada; Chile; Hong Kong, China; Iceland; Japan; Republic of Korea; Liechtenstein; Mexico; New Zealand; Norway; South Africa; Switzerland; Panama; Taiwan Province of China; Turkey; United States of America	Australia; Chile; Hong Kong, China; Iceland; India; Japan; Republic of Korea; Liechtenstein; Mexico; New Zealand; Norway; Singapore; South Africa; Switzerland; Panama; Taiwan Province of China; Thailand; Turkey; United States of America; Uruguay	Canada; Chile; Iceland; Mexico; New Zealand; Norway; Singapore; South Africa; Switzerland; Panama; Taiwan Province of China; Turkey; Uruguay	
Partially	European Union; India; Uruguay	European Union	Australia; China; Brazil; Hong Kong, China; India; Japan; Republic of Korea; Liechtenstein; United States	Canada; Chile; Iceland; India; Republic of Korea; Mexico; New Zealand; Norway; Turkey; United States

4.2(b). Preferences offered under Services Waiver in major sectors

Major sectors	Economies offering concessions
Transport services	Australia; Brazil; Canada; Chile; China; European Union; Hong Kong, China; Iceland; India; Japan; Republic of Korea; Mexico; New Zealand; Norway; Panama; South Africa; Switzerland; Taiwan Province of China; United States.
Travel services	Australia; Brazil; Canada; Chile; China; European Union; Hong Kong, China; Iceland; India; Japan; Republic of Korea; Liechtenstein; Mexico; Panama; South Africa.
Other commercial services	Australia; Brazil; Canada; Chile; China; European Union; Hong Kong, China; Iceland; India; Japan; Republic of Korea; Liechtenstein; Mexico; New Zealand; Norway; Panama; Singapore; South Africa; Switzerland; Taiwan Province of China; Turkey; United States; Uruguay.

References

APEC Business Advisory Council (2011). *Understanding Services at the Heart of a Competitive Economy*. Makati City, the Philippines.

Adlung, R. and H. Mamdouh (2013). How to design trade agreements in services: top down or bottom up? Staff working Paper ERSD-2013-08. Geneva: World Trade Organization (WTO).

Adlung, R. and M. Roy (2005). Turning hills into mountains? current commitments under the GATS and prospects for change. Staff Working Paper ERSD-2005-01. Geneva: (WTO).

Arbis, N. and A. Heal (2015). Waiting for service? Progress in preferential market access for Asia-Pacific least developed countries' services exports, ESCAP Trade Insights No.13. Bangkok: United Nations, Economic and Social Commission for Asia and the Pacific.

Baldwin, R. (2014). Multilateralising 21st Century Regionalism. OECD Global Forum on Trade Reconciling Regionalism and Multilateralism in a Post-Bali World, Paris,11-12 February 2014.

Borchert, I., B. Gootiiz and A. Mattoo (2013). Policy barriers to international trade in services – evidence from a new database. *The World Bank Economic Review*, vol. 28, No. 1, pp. 162-188. Washington, D.C.: World Bank.

_____ (2011). Services in Doha: What's on the table? In *Unfinished Business? The WTO's Doha Agenda,* W. Martin and A. Mattoo, eds., pp. 115-134. London: Centre for Economic Policy Research, and Washington, D.C.: World Bank.

De Backer, K. and S. Miroudot (2013). *Mapping Global Value Chains. Paris:* Organisation for Economic Co-operation and Development (OECD).

Deardorff, A. and R. Stern (2008). Empirical analysis of barriers to international services transactions and the consequences of liberalization, in *A Handbook of International Trade in Services*, A. Mattoo, R. Stern and G. Zanini, eds., pp. 169-220. Oxford: Oxford University Press, and Washington, D.C.: World Bank.

Dincer, N. and A. Tekin-Koru (2017). The effect of bilateral services trade barriers on goods trade, FREIT Working Paper 1296. San Rafael: Forum for Research in Empirical International Trade.

United Nations, Economic and Social Commission for Asia and the Pacific (2014). *Asia-Pacific Trade and Investment Report 2014 – Recent Trends and Developments.* ESCAP. Bangkok. Sales No. E.15.II.F.2, pp. 79-80. Available from www.unescap.org/sites/default/files/APTIR%202014%20-%20Full%20Report.pdf

European Commission (2017). *Trade in Services Agreement.* Brussels. Available from http://ec.europa.eu/trade/policy/in-focus/tisa/ (accessed December 2017).

_____ (2016). Services and investment in EU trade deals Using 'Positive' and 'Negative' Lists. Brussels.

Francois, J. and B. Hoekman (2010). Services trade and policy, in *Journal of Economic Literature, vol.* 44, No. 3, pp. 642-692.

Hoekman, B. and A. Mattoo (2013). Liberalizing trade in services: lessons from regional and WTO negotiations. EUI Working Paper RSCAS 2013/34, Fiesole, Italy: European University Institute.

International Monetary Fund (2017). World trade in services: evidence from a new dataset. IMF Working Paper WP/17/77, Washington, D.C.

Lodefalk, M. (2015). Servicification of manufacturing firms makes divides in trade policy-making antiquated. *Working Paper 1/2015.* Örebro, Sweden: Research Gate and Örebro University.

Miroudot, S. and K. Pertel (2015). *Water in the GATS: Methodology and Results.* Paris: OECD.

Nordås, H. and D. Rouzet (2015). The impact of services trade restrictiveness on trade flows: first estimates. OECD Trade Policy Papers No. 178. Paris: OECD.

Nordås, H. (2012). *STRI – A Guide to the Regulatory Database: Measures, Explanatory Notes, and Examples.* Paris: OECD.

Organisation for Economic Co-operation and Development (2017). *Services Trade Policies and the Global Economy.* Paris.

_____ (2014). *Services Trade Restrictiveness Index: Policy Brief.* Paris.

_____ (2003). *Glossary of Statistical Terms – Deregulation.* Paris.

Ospina, S. (2002). Telecommunications for all: does liberalization help? LSE Working Paper Series No. 02-29, April 2002. London: London School of Economics.

Rouzet, D. and others (2014). *Services Trade Restrictiveness Index (STRI): Financial Services.* Paris: OECD.

Rouzet, D. and F. Spinelli (2016). Services trade restrictiveness, mark-ups and competition. OECD Trade Policy Papers No. 194, Paris: OECD.

Roy, M., J. Marchetti and H. Lim (2006). Services liberalization in the new generation of preferential trade agreements: how much further than the GATS? Staff Working Paper ERSD-2006-07. Geneva: World Trade Organization (WTO).

Saez, S. (2010). The strategic development role of trade in services in *Trade in Services Negotiations – A Guide for Developing Countries,* S. Saez, ed., pp. 1-18. Washington, D.C.: World Bank.

Schwellnus, C. (2007). The effect of domestic regulation on services trade revisited. CEPII Working Paper No. 2007-08, Paris: Center D'etude Prospectives et D'Informations Internationales.

Stephenson, S. (2012). Services and global value chains, in *The Shifting Geography of Global Value Chains: Implications for Developing Countries and Trade Policy,* W. E. Forum, ed., pp. 18-30. Geneva: World Economic Forum.

Stephenson, S., A. Ragoussis and J. Sotelo (2016). Implications of the trade in services agreement (TiSA) for developing countries.GDI Discussion Paper 10/2016, Bonn: German Development Institute.

Stephenson, S. and M. Robert (2011). Evaluating the contributions of regional tade agreements to governance of services trade. ADBI Working Paper Series No. 307, Tokyo: Asian Development Bank Institute.

Swedish National Board of Trade (2012). *Everybody is in Services – the Impact of Servicification in Manufacturing on Trade and Trade Policy.* Stockholm.

Ueno, A. and others (2014). *Services Trade Restrictiveness Index (STRI): Distribution Services.* Paris: OECD.

UNCTAD (2017). The role of the services economy and trade in structural transformaion and inclusive development. Note by the UNCTAD secretariat TD/B/C.1/MEM.4/14, 6 June. Geneva.

_____ (2016). *Services, Development and Trade: the Regulatory and Institutional Dimension.* Geneva.

Viilup, E. (2015). *The Trade in Services Agreement (TiSA): An End to Negotiations in Sight?* Brussels: European Parliament, European Union Directorate-General for External Policies.

World Trade Organization (WTO). (1991). Services Sectoral Classfication List. Geneva.

_____ (2012). An inventory of non-tariff measures and services measures. In *World Trade Report 2012 – Trade and Public Policies: A Closer Look at Non-tariff Measures in the 21st Century,* pp. 94-133. Geneva.

_____ (2014). *Collective Request Pursuant to the Bali Decision on the Operationalization of the Waiver Concerning Preferential Treatment to Services and Service Suppliers of Least Developed Countries*. Geneva.

_____ (2015). *Briefing Note: Least-development Countries.* Available from https://www.wto.org/english/thewto_e/minist_e/mc10_e/briefing_notes_e/brief_ldcs_e.htm (accessed December 2017).

_____ (2017a). *Disputes by Agreement.* Available from https://www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm (accessed December 2017).

_____ (2017b). *Guide to Reading the GATS Schedules of Commitments and the List of Article II (MFN exemptions).* Geneva.

_____ (2017c). *Services Liberalization from a WTO/GATS Perspective: in Search of Volunteers.* Available from https://www.wto.org/english/res_e/reser_e/ersd200905_e.htm (accessed December 2017).

_____ (2017d). *Services: Rules for Growth and Investment.* Geneva.

Chapter 5
Channelling services trade and policies for supporting sustainable development

This publication and other literature cited herein offer evidence of the rising role of services and services trade in national economies and their connectivity with international markets. Services in general have now become more important at any level of income per capita than in the past (Hoekman, 2016). They contribute to a much larger share of GDP, employment and trade. Because they are increasingly used as an input in the production of goods and other services, they have also become a significant component of the overall production as well as trade costs. Both locally supplied and imported services determine the level of competitiveness and productivity changes for most firms as well as for the economy. Yet, technological developments themselves drive supply, diversity, and quality of services as well as access to the services markets and consumption. Since the early 2000s, services have been the gateway[28] to the global value chain (GVC) highway of international trade and investment. This is particularly so for producers in the Asian production networks, through increasing the gains from international specialization and trade for many countries and individuals. However, looking forward, services are tasked with much more.

With the adoption of the 2030 Agenda for Sustainable Development, trade and trade policies became a key means of implementation for merchandise as well as services. As Meliado (2017) commented, this elevation of the role of trade was a change from the development experts' mid-1990s position of taking trade as hindering sustainability, especially with regard to its environmental aspect. However, many trade experts have remained somewhat sceptical about the specific role of trade (and even more so of trade agreements) in the context of direct contribution to economic, social and environmental sustainability (e.g., Elms, 2017).

There appears to be less reservation when it comes to services trade, given its critical contribution to the key sustainable development goals (SDG) and targets that are dependent on the access by individuals and firms to health,

[28] This term is borrowed from OECD, 2017.

education, financial, transport, cultural and recreation services as well as access to energy, water, waste management etc., in the context of services being the "backbone" of services infrastructure.

As the concluding chapter in this publication, it has three simple objectives: first, to summarize stylized facts pointed to in the publication on the increasing role of services trade and policies for economic, social and environmental sustainability concerns; second, to identify implications of those observations for policies; and third, to identify some priorities for future research in support of evidence-based policymaking for service-led growth and its spillovers into the implementation of SDGs

5.1. Recalling selected stylized facts on services trade that are of relevance to sustainable development

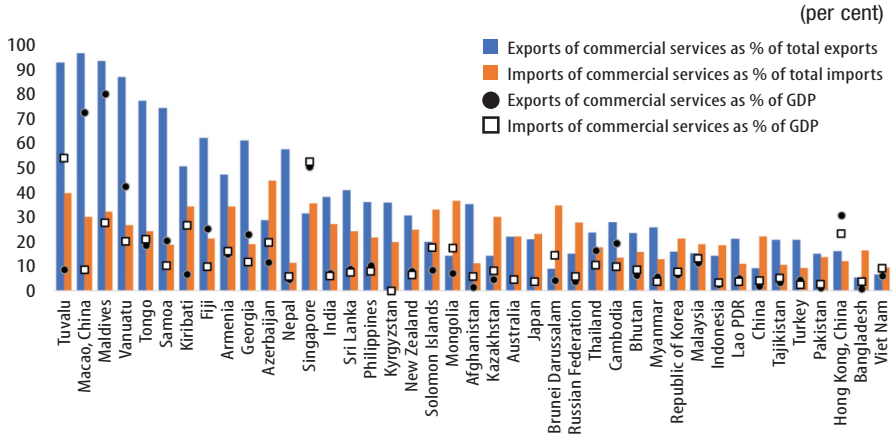
The most frequently observed stylized facts about services trade and policies that are, or will be, relevant to sustainability concerns, are as follows:[29]

- Services form a significantly larger share of total exports and imports, especially for developing countries. The share of services exports increased from around 9 per cent in 1970 to about 20 per cent in 2014 at the global level. The share of developing countries in world's services exports rose from 3 per cent in 1970 to over 20 per cent in 2014.
- Services export contribution to GDP jumped six-fold (1 per cent to 6 per cent) at the global level. Services exports are even more important for small Asian and Pacific island economies (figure 5.1);
- Services exports from developing countries grew twice as fast compared with developed economies, with developing countries accounting for more than 20 per cent of total services exports in 2014. Asian and Pacific developing economies contributed the major part of that growth. China, India and Singapore were among top 10 services traders in 2016 (WTO, 2017), while the Republic of Korea, the Russian Federation, Thailand, Malaysia and Hong Kong, China were among the top 30.
- Exports of services – which do not require a geographical proximity of provider and consumer, but instead rely on the availability of modern technology to deliver – enjoyed faster growth in recent

[29] These are based on chapter 2 of this publication as well as ESCAP, 2017, OECD, 2017, UNCTAD, 2017 and Loungani and others, 2017.

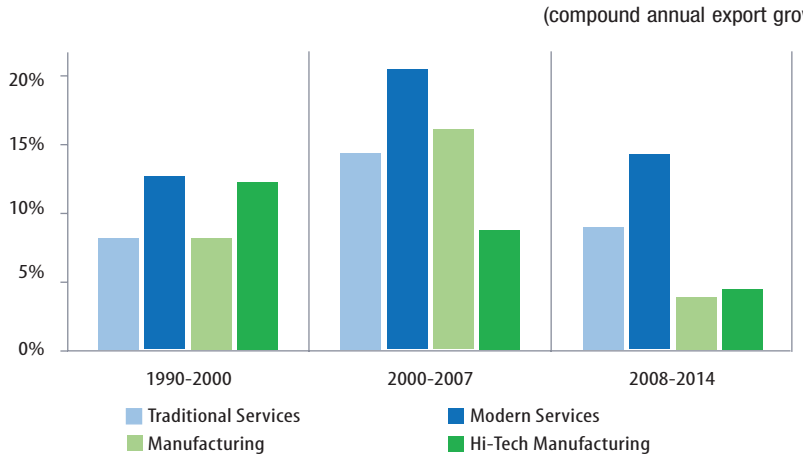
decades compared with other types of services or manufacturing (figure 5.2). This finding has important consequences for the inclusivity of growth as it may penalize developing countries or firms on the other side of the "technological frontier", that is, those without access to sophisticated technology.

Figure 5.1. Imports and exports of commercial services as a percentage of total exports and imports, and GDP in Asia-Pacific economies



Source: ESCAP calculation based on the WTO International Trade Statistics Database and World Bank World Development Indicators, assessed October 2017.

Figure 5.2. Growth of exports per type of technological sophistication



Source: BPM6, 2016, United Nations Comtrade, and authors' calculations as cited in Loungani and others, 2017.

Note: Modern services comprise computer, information, business, intellectual property and financial services. Traditional services, which require the proximity of supplier and consumer, comprise, inter alia, transport, travel and retail.

- Over time, services and services exports have contributing more to overall economic growth than have other activities. Changes in services value-added are more correlated to country-level GDP growth. Figure 5.3, panel A (taken from Loungani and others, 2017), plots the average annual growth in value-added of services, manufacturing and agriculture against GDP per capita growth for most countries in the world, between 2010 and 2014. The gradient of the correlation between the growth of services value-added and other economic activities is steeper, indicating a stronger positive link between GDP per capita growth and services growth.[30] This goes against some of the older literature that mark the services sector as growth-laggard. This is even more obvious from the correlations shown in panel B of figure 5.3. The link between services, agriculture, mining and manufacturing exports, on one side, and GDP per capita growth on the other side reflects the fact that higher GDP per capita growth is more positively associated with services exports than with the other sectors exports.[31]

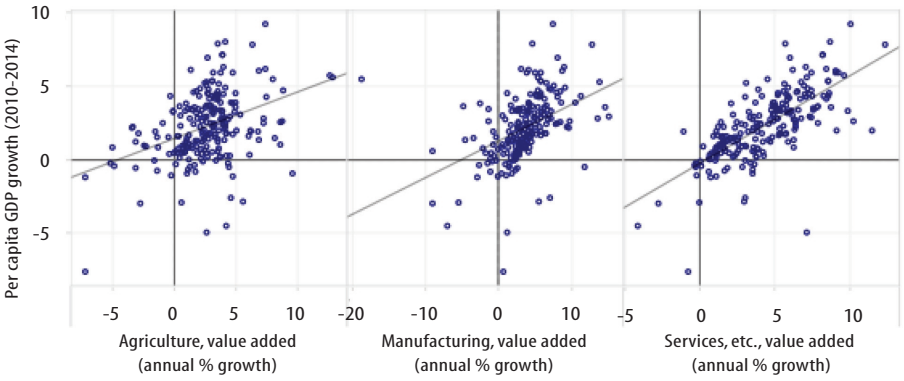
- The global financial crisis in 2008-2009 provided a real-life laboratory for examination of the differential behaviour of merchandise and services trade. As already argued in chapter 4 of this publication, services are more resilient to external shocks (in demand). The literature cites the fact that demand for a range of traded services is less cyclical and services production is less dependent on external finance, which is normally in short supply during times of financial crisis. More recent research points also to some structural characteristics, for example, services being associated with lower elasticity of demand in export markets; this is reflected more in so-called "modern" services than in traditional ones.

- Services, in particular those linked to technology for their production and supply, play both a negative and a positive role in labour-seeking employment (labour relocation) and thus their impact on social sustainability is still unclear. What is known now is that new jobs will be linked both to higher (high) skills and availability of technology, pointing to a possible polarization on two sides of the digital and knowledge divides. Technological developments will have both positive and negative impacts. On the positive side, they will reduce the costs of production and trade, thus allowing the entry of

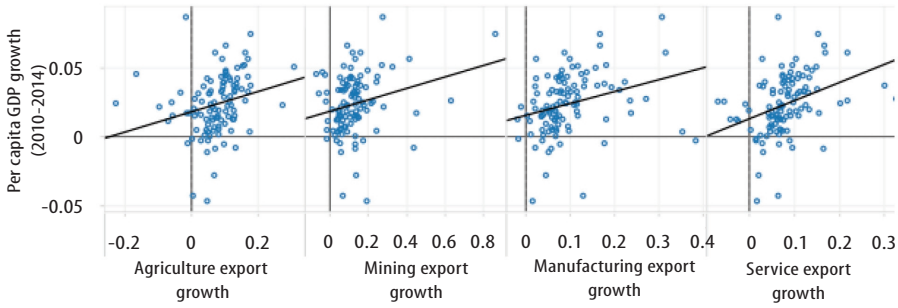
[30] The correlation coefficient is 0.60 between services growth and GDP per capita growth. For manufacturing and GDP per capita growth this coefficient is only 0.24. R^2 for services value-added is 0.51 and for manufacturing value-added is 0.19 (Loungani and others, 2017, p. 13).
[31] The positive coefficient for services export growth is much higher (0.14) than for exports of agriculture (0.07), mining (0.04) or manufacturing (0.08).

Figure 5.3. Contribution of services to economic growth

Panel A. Sectoral value-added growth and per capita GDP growth



Panel B. Sectoral export growth and per capita GDP growth



Source: BPM6, World Economic Outlook, World Development Indicators, and authors' calculations as cited in Loungani and others, 2017.

smaller firms and entrepreneurs into global markets as well as benefiting consumers (both final and intermediate). However, the fourth industrial revolution, with all its technological disruptions, is expected to lead to the automation of many types of jobs currently performed by humans. Services likely to be harshly hit include some professional services (e.g., accountancy, law, health care) as well as transport, construction and similar services. The technological disruptions may thus result in both employment and wage polarization.[32] Nevertheless, as these changes may take time, it is important for countries possibly facing adverse impacts to put in place policies to mitigate these effects (see section 5.2). However,

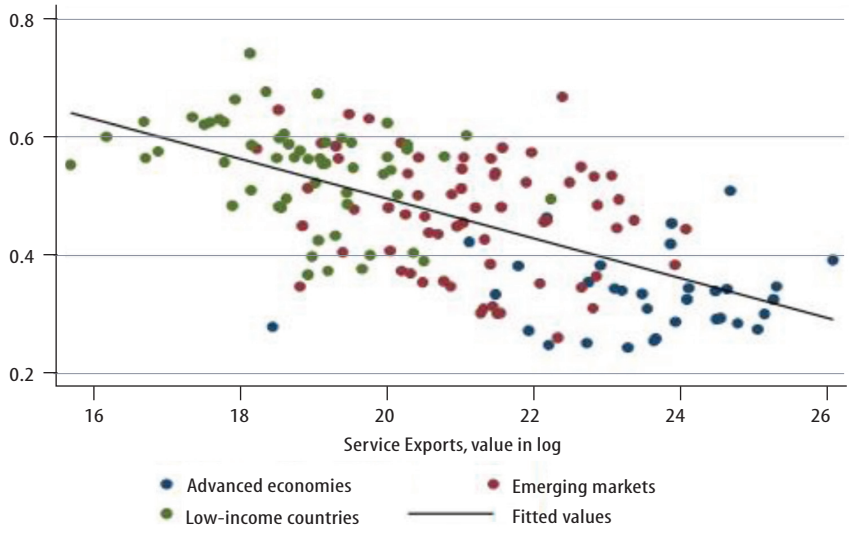
[32] In Malaysia, 54 per cent of jobs are at high risk of being displaced by technology in the next 20 years, according to a 2017 study by the government-owned think-tank, Khazanah Research Institute, which cites an International Labour Office report (Khor, 2018).

empirical evidence currently still points to the growth of services exports contributing to (a mildly) faster job growth.

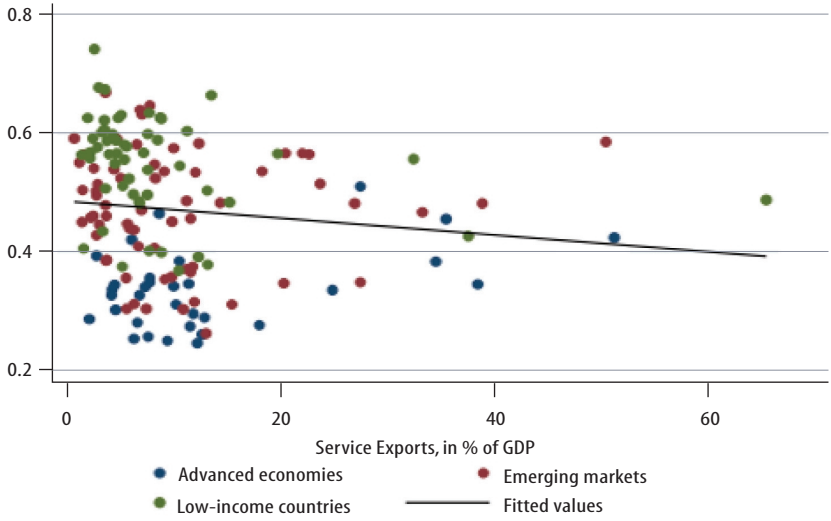
- Finally, with regard to the link between services and income inequality, a considerable amount of literature argues the export of services may be more inclusive than the exports of other products and commodities. Loungani and others (2017) explored this relationship by correlating the measure of inequality traditionally used for these purposes (Gini coefficient) with the average natural log of services exports (figure 5.3, panel A), and with the services exports as a share of GDP (figure 5.3, panel B). In both cases, they covered a large number of advanced and developing countries from 1980 to 2014 (figure 5.4, panel A and panel B). While the coefficients are not particularly high, the relationship between changes in export services and income inequality is negative. The finding by Loungani and others (2017) is tentative, but even a weak indication that exports of services could play a role in reducing inequality is an important reason for addressing social sustainability concerns under the 2030 Agenda.

Figure 5.4. Inequality and service exports

Panel A. Inequality and services exports, 1980-2014



Panel B. Inequality and services exports as share of GDP, 1980-2014



Source: BPM6, UNU-WIDER and authors' calculations, as cited in Loungani and others, 2017.
Note: Inequality is measured by Gini coefficients in both panels.

5.2. Implications for policies

One theme recurs throughout this publication, i.e., services are taking over the world. Post-third industrial revolution changes have placed services at the core of GVCs – which have shaped world production and trade – and with it, investment and financing, transport, skilling and many other areas. As the world moves into the fourth industrial revolution, this dominance of services and technology will only become stronger. Because of the ever-increasing tradability of services, this sector might be a viable alternative for weakened manufacturing export-led growth. In fact, services may help revive some of the manufacturing growth as they positively affect productivity growth across the board.

Service-led growth also offers opportunities for diversification and competitiveness for countries across the development spectrum, including middle-income countries, least developed or resource-rich countries. Services have been found to contribute significantly to the productivity of many manufacturing (processing) industries, especially those linked into GVCs. Productivity boost is driven by the services that are technology- and knowledge-dependent. The impact on the reduction of fixed-costs is thus significant, and as a result is seen as opening opportunities for small firms and entrepreneurs (aka. Small and medium-sized enterprises) to enter regional and global markets. Another channel necessary to the spread of these modern services is mobility of professionals or human-capital.

However, serious restrictions are still present on both the mobility of technology and professionals-across-borders, which may limit the potentially positive impacts on both economic and social sustainability.

While each of the preceding chapters in this report identify the key policy-relevant messages, listing some of the more important policy challenges and implications here should be helpful and reader-friendly. These are clustered in two areas, based on the outcome to be achieved.

5.2.1. Keeping markets open for services trade growth

Services trade growth, while driven by technological advances and increased tradability of services, must be supported by policies for keeping markets open and ensuring continuing growth in demand. There are two key areas of action. One is to stop the increase in protectionism that has been creeping into the multilateral trading environment since the global financial crisis of 2008-2009. Even a small tariff may have a sizable impact on competitiveness of producers within the supply chain, and thus dampen the demand for traditional and other services used in GVC-linked production and trade. Unfortunately, instead of the removal of less transparent forms of protectionism (non-tariff barriers), there are new instruments such as domestic taxation that may have an adverse impact on GVCs and thus on services (ESCAP, 2017).

There are also many restrictions in services trade that are unhelpful and should be removed. However, as discussed in chapter 4, multilateral negotiations on improving the General Agreement on Trade in Services are dysfunctional and the alternative approach through the Trade in Services Agreement does not include many of the developing countries. The workable alternative should be preferential services trade liberalization as well as autonomous services reforms. While preferential trade liberalization has proliferated, resulting in many formal trade agreements (177 in force for Asia-Pacific region countries), the level of liberalization in services and market opening that is meaningful for the developing countries is not large, and should be enhanced through better negotiations and implementation of available deals (see chapter 4).

5.2.2. Reducing costs and increasing competitiveness

As mentioned above several times, one of the drivers of the services trade success story is the fact that services as intermediate inputs into manufacturing and other services can reduce costs (especially for smaller players).[33] Again, technological advances are a very important factor in

[33] Roy (2017) discusses how and why the costs of cross-border trade in services are still much higher on average than those of trading in goods.

pushing services costs down. Aside from technology, the focus should be on policies and regulatory frameworks, starting with those in domestic economies. Often, the most impactful cost-reducing measure is the removal and streamlining of burdensome regulations, including those preventing more efficient competitive behaviour. Improving regulation transparency is often the first and easiest step towards reducing regulatory costs.

In additionally, regulatory co-operation and harmonization, including through trade agreements, play an important role (OECD, 2017). Regulatory cooperation is needed to reduce compliance costs in different jurisdictions and to ensure ease of doing business across borders. In this regard, governments can consider a mechanism or platform for sharing experiences regarding services regulation and reform as well as for identifying best practices that can be applied across borders. Mutual recognition agreements in the area of standards for products and services (including qualifications for professionals) come to mind as possible areas where current frictions exist, and which can be moved with relative ease. Opening markets does allow for the deepening of specialization, and enlarging scale and scope effect even in services. Business process outsourcing and online services (such as for e-commerce,) in particular, can benefit.

Traditionally, cost reduction and increased competitiveness have been expected from spillovers and technological diffusion from foreign to domestic providers of services. Policies necessary to achieving this result may first of all include, for example, removal of explicit discrimination against foreign providers of services so that they can enter the domestic market. Furthermore, public investment in upgrading and improving domestic absorptive capacities, such as investment in education and training, ICT readiness and networks, are all high on the list of desirable policies. In addition, greater domestic and international labour mobility will enable domestic firms as well as individuals to take advantage of service export opportunities.

5.2.3. Keeping it all together: Coherent policymaking

The importance of services requires a comprehensive approach to policy formulation. While liberalizing trade in goods is a starting point for seeking new trade opportunities, the value chain of industrial goods requires efficient services. Improvements in the performance of the service sectors, including by liberalization of services trade, would thereby enhance the competitiveness of manufacturing firms and facilitate their participation in global production networks. In contrast, restricted service trade and rigid regulation, often found among some of the fastest-growing economies in

the region such as China, India, Indonesia, Malaysia, the Philippines and Thailand, could translate into a negative effect on exports of goods.

However, as imported services become an increasingly essential element of internationalized production, governments will come under more pressure to create a balance between assisting domestic service providers and promoting the competitiveness of manufacturing exports in GVCs. There is also a risk that too much reliance on imported intermediate services and goods may lead to limited development spillovers from GVCs to the rest of the economy.

The general direction of service trade policy at the national level should then focus on creating competitive market conditions and developing well-functioning domestic service sectors that meet high regulatory standards. Measures will have to vary from sector to sector. For example, ensuring access to the network or grid for new entrants in the telecommunications or electricity sectors should help in creating a level playing field, and result in pro-competitive efficiency gains. The openness of financial services with a solid regulatory framework could enhance competition and stability of financial sector and contribute to macroeconomic stability. In addition, it is important to have a comprehensive set of policies in place to encourage spillovers and technological diffusion from foreign to domestic providers. This may include, for example, public investment in upgrading and improving accessibility to backbone hard and soft infrastructure such as railways, ports, health care and education. The provision of education and training (for example, in ICT, languages and professional skills) as well as freer within-the-country and across-the-border labour mobility, which will enable domestic firms as well as individuals to take advantage of service-export opportunities.

5.3. Securing the role of services as the future of sustainable development – data, data and data

The current literature on services and services trade have already benefitted enormously from the improvements in data collection in many areas (not only trade, but also employment, production etc.) as well as research methodologies (going from aggregate to firm-level analysis). Today, the dynamics, drivers and linkages between services and other economic activities as well as among services themselves, are understood much better than even just a decade ago. However, most of these findings are available only for OECD countries and several other developing economies, while the majority of low-income countries are still in the data

vacuum. This is critical because some of the polices can only be properly designed if tailored for the specific economic environment of a country, and that requires data. Even such a simple analysis as bilateral flows of commercial services trade among developing countries is not possible because of the lack of data. No inference on structural transformation or, for example, importance of foreign direct investment for services-generated GDP, employment or trade can be made for these countries. Similarly, more complex sustainability assessments are not possible without at least input-output tables or value-added trade. Therefore, in most cases, these economies undertake both autonomous regulatory reforms and, more importantly, binding free trade agreements as a leap of faith since their negotiating mandates cannot be evidence-based.

Even if considering the provision of some cushioning in some of the strategically important services domestically, decision-making most likely will be driven by lobby pressure and not number crunching. Development of more comprehensive and reliable statistics on commercial services as well as on foreign affiliates statistics is urgently needed in order to produce better research-based policy support for many countries in the Asia-Pacific region.

If services are to be the future of sustainable development, many questions still need to be answered, especially for low-income economies, such as (in no specific order):

- Are all services the same? Which services matter more for sustainable development?
- What is the effect of services trade on inclusive growth and structural transformation?
- Is trade in services a promising development strategy for developing economies? Which services are the most effective in driving growth and why?
- How does services trade affect employment, income and gender inequality?
- How does services trade affect the quality of, and access to service delivery?
- What is the relationship between services trade and innovation?
- What are key determinants of, and barriers to regulation of services trade?
- Understanding the services-investment nexus. Is inward foreign direct investment the channel for negative impacts of services on exports?

- Are preferential trade agreements effective in reducing barriers to trade in services?
- What policies are needed to increase services trade opportunities for inclusive growth?
- How can effective aid for services trade projects be designed?

Research and capacity-building work by international organizations will contribute to deepening understanding of the role of services in GVCs as well as the value for the manufacturing sector of reforming services regulation. Networks such as the Asia-Pacific Research and Training Network on Trade (ARTNeT) play a very important role in generating locally sourced research and making it accessible to policymakers, other analysists and stakeholders. The dialogues and consultations organized by ARTNeT enable sharing of national experiences and lessons, which are then synthesized and incorporated into normative and analytical work carried out at the regional level by ESCAP. During the 12 years of its operations, ARTNeT has contributed to strengthening research capacity in developing and least developed countries in the region by providing technical training for applied analysis in area of trade policy, trade facilitation and investment. Collaboration between ARTNeT and other networks – for example, the ESCAP Sustainable Business Network, FDI Network or United Nations Network of Experts for Paperless Trade and Transport (UNNExT), will further improve and expand capacity-building oriented towards promoting investment, innovation and export by SMEs in the services sector.

ESCAP, together with relevant international and regional organizations, is also committed to improving the availability of the official statistics on services production, employment, productivity, trade and investment to ensure that services sectors and services trade become a reliable engine of sustainable development for the countries in the Asia-Pacific region.

References

Elms, D. (2017). The elusive quest for inclusive growth, Talking Trade Blog. Asian Trade Centre, Singapore. Available at http://www.asiantradecentre.org/talkingtrade//the-elusive-quest-for-inclusive-growth?rq=inclusive%20trade

ESCAP (2017). *Asia-Pacific Trade and Investment Report 2017: Channelling Trade and Investment into Sustainable Development*. United Nations Economic and Social Commission for Asia and the Pacific, Bangkok.

Hoekman, B. (2016). Services, trade and inclusive growth (mimeo). Presentation at the PEGNET Conference, Kigali, 15-16 September.

Khor, M. (2018). Critical issues to watch in 2018. South Centre, Geneva. Available at http://www.ipsnews.net/2018/01/critical-issues-watch-2018/).

Loungani, P., S. Mishra, C. Papageorgiou and K. Wang (2017). World trade in services: Evidence from a new dataset, IMF Working Paper WP/17/77. International Monetary Fund, Washington, D.C.

Meliado, F. (2017). Tracking sustainability in Free Trade Agreements: Issues of interest for the Commonwealth, International Trade Working Paper No. 2017/01. Commonwealth Secretariat, London.

OECD (2017). *Services Trade Policies and the Global Economy.* Paris.

Roy, M. (2017). The contribution of services trade policies to connectivity in the context of Aid for Trade, Staff Working Paper MNo. ERSD-2017-12. World Trade Organization, Geneva.

UNCTAD (2017). The role of services economy and trade in structural transformation and inclusive development, Note by the UNCTAD Secretariat, TD/B/C.1/MEM.4/14. United Nations Conference on Trade and Development, Geneva.

WTO (2017). *World Trade Statistical Review 2017*. World Trade Organization, Geneva. Available at https://www.wto.org/english/res_e/statis_e/wts2017_e/wts17_toc_e.htm.

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This publication synthesizes the work of ESCAP and other available literature aimed at deepening the understanding of the extent to which services trade contributes to regular trade and GVC-linked trade, and how such policies influence the outcomes observed. As services trade as well as service trade policies and regulatory frameworks suffer from the serious lack of reliable and comparable data across countries, this publication also calls for better region-wide availability of services-related data that will enable continuous quantitative analysis and support for evidence-based policymaking. It also offers some research ideas for enabling evidence-based policymaking in services trade within the context of implementing the 2030 Agenda for Sustainable Development.

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