

## Servicification and industrial exports from Asia and the Pacific

WITADA ANUKOONWATTAKA,\* MARCO SCAGLIUSI\*\* AND MIA MIKIC\*

### Highlights

“Servicification” is most simply defined as an increased use of services in manufacturing processes. The impact of servicification on the competitiveness of the industrial sector has not been adequately addressed, especially in policy discussions, because of limited data availability. However, the OECD-WTO TiVA database now fills this gap for a selected number of economies. This issue of Trade Insights considers how developments in the service sector have encouraged and promoted industrial exports from Asia-Pacific economies. Key findings:

- Services accounted for 29.4% of the total value added in the industrial exports of Asia and the Pacific in 2009.
- OECD-WTO TiVA data shows that the spread of global value chains (GVCs) in the region has also resulted in an expansion of servicification across Asia-Pacific developing economies. The share of intraregional imports of services increased, especially in GVC-related industrial exports.
- Republic of Korea and China are the economies that benefited the most in terms of intraregional export growth in services. In contrast, Japan has lost its market share.
- Distribution-related services and business services are the major elements of service inputs to industrial exports from Asia and the Pacific. These services accounted for 9% and 7.5%, respectively, of industrial exports from the Asia-Pacific region in 2009.
- Business services contribute extensively to the exports of electrical equipment, machinery, and transport equipment. These happen to be the sectors where multi-national corporations (MNCs) have an intensive presence.
- Although domestic sourcing of services remains dominant, especially in the cases of agriculture and mining exports, the contribution of imported services has been rising. The share of imported services in industrial exports increased from 7.6% in 1995 to 11.1% in 2009. The increase of service imports is particularly rapid in the case of business services.
- Liberalizing services trade would allow cheaper imports of services inputs and facilitate cost-efficiencies in Asia-Pacific supporting industrial production through GVCs. Liberalization should not be restricted to regional South-South liberalization, as developed economies remain the dominant source of imported service inputs.

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## Introduction

ESCAP (2014) showed that services value-added, across all world economies, accounted for 29% of the global gross exports in 2009. In addition, there was an increase in the reliance on imported services at the expense of domestically-supplied ones. The increased importance of “servicification” implies that services have become key to enhancing the competitiveness of economies, especially those exporting industrial products through global value chains (GVCs). In fact, GVC-related production and trade have spread more extensively through the Asia-Pacific region than in the rest of the world implying the high importance of servicification, inter alia, to the development of industrial exports of the region.

Taking into account the unique characteristics of the region, this note focuses closely on servicification in Asia and the Pacific. The analysis looks into the types of service inputs embedded in industrial exports of Asia and the Pacific, and explores sourcing patterns for these inputs. The note also sheds light on appropriate policies for liberalization of trade, and regional integration in services, to enhance international competitiveness of Asia-Pacific economies.

## Contribution of services in Asia-Pacific industrial exports

The recognition of the value created, directly or indirectly, by services in the process of manufacturing, distribution and marketing of goods has become known as “servicification” (ESCAP, 2013). The expansion of servicification is driven by many factors, most notably reductions of barriers to trade in services, and the spread of GVCs. According to Gereffi et al., (2001), GVCs rely intensively on services to link and coordinate the activities located in different economies. In addition, increasingly liberal trade in services as well as the advancement of communication and transportation technologies have increased the tradability of services and consequently generated a higher share of foreign services in industrial exports.

Based on data from the OECD-WTO TiVA database,<sup>1</sup> figure 1 depicts the share of services value-added embedded in gross industrial exports in 2009 in the Asia-Pacific region.<sup>2</sup> Service content in industrial exports from Asia-Pacific economies amounts to 29.4%.<sup>3</sup> The share of services is predominant in high-technology sectors, namely electrical and optical equipment (32.5%), machinery (30.8%), transport equipment (30.6%), and chemicals and non-metallic mineral products (30%), while it lags behind in agriculture, hunting, forestry and fishing (18.5%), mining and quarrying (21.8%) and food products (25.2%). These results are consistent with global trends, under which transport equipment and high-tech sectors are the most service-intensive industries (World Bank, 2013). However, the share of services value-added could

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<sup>1</sup> The analysis is based on data on trade in value added from OECD-WTO TiVA database accessed in March 2015. The database covers 56 economies of which 17 are ESCAP members (Australia, Brunei Darussalam, Cambodia, China, India, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, Philippines, Russian Federation, Singapore, Thailand, Viet Nam, Turkey and Hong Kong; China). As these 17 economies and Taiwan Province of China account for 97.4% of merchandise exports and 97.3% of merchandise imports by Asia-Pacific economies in 2013 they are taken as a representative sample of a region. The OECD-WTO TiVA database covers 18 sectors classified under 1 digit-ISC Rev .3, which comprises 11 industrial sectors (agriculture, mining, food products, textiles and apparel, wood and paper, chemicals and minerals, basic metals, machinery, electrical equipment, transport equipment, other manufactures and utilities) and 7 service sectors (construction, wholesale and retail, transport and telecoms, finance and insurance, business services and other services). The OECD-WTO TiVA database provides data for 1995, 2000, 2005, 2008 and 2009.

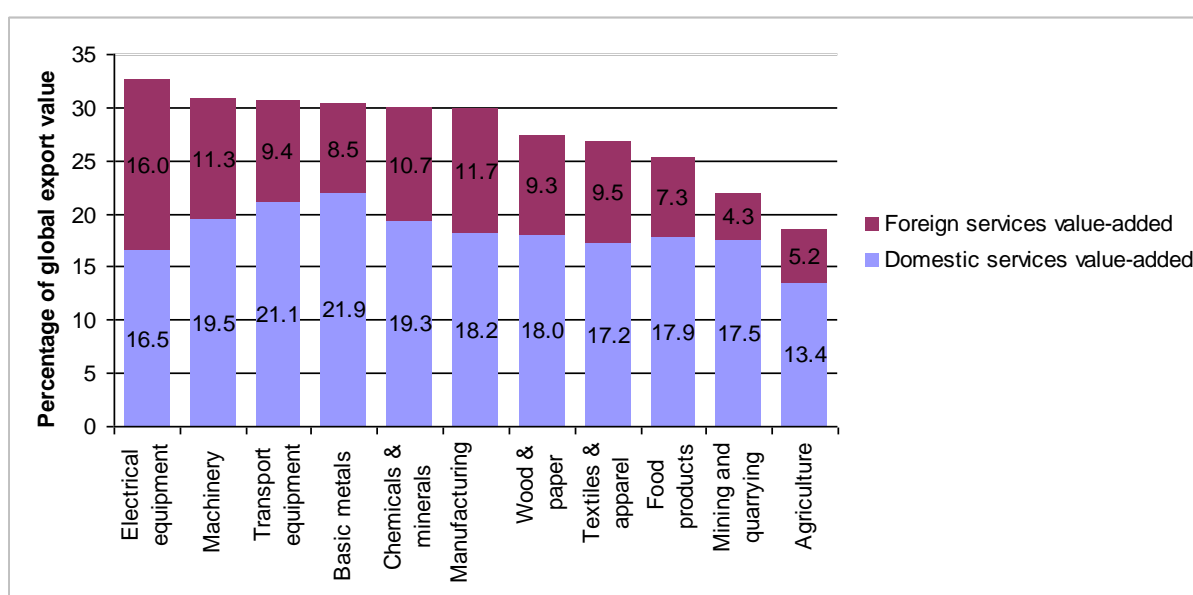
<sup>2</sup> Value-added in exports can be split in its three components: value-added from services, manufacturing and primary products. Increasing the share of one of these components, ceteris paribus, leads to the decrease of the other two shares.

<sup>3</sup>Service content in world exports of industrial products was 29% in the same period (ESCAP, 2014).

differ across economies of different development levels.<sup>4</sup> With reference to the correlation between the level of development and trade in services, the World Trade Report (WTO, 2014) estimated a gap in the share of services value-added in exports between developed and developing economies as big as five percentage points.

Domestic services account for 18.3% of total industrial exports from the Asia-Pacific, while foreign services' contribution is 11.1%.<sup>5</sup> There is a variation across industries. Notably, the share of *imported* services seems to be related to GVC-related *exports*. For instance, the share of imported services is particularly high in the exports of electrical and optical equipment (16%) in comparison to the share in exports of other sectors, especially the agriculture and mining sectors.

**Figure 1: Services content in gross exports of Asia-Pacific economies, by industrial sector, 2009**



Source: ESCAP calculation based on OECD-WTO TiVA database (2015).

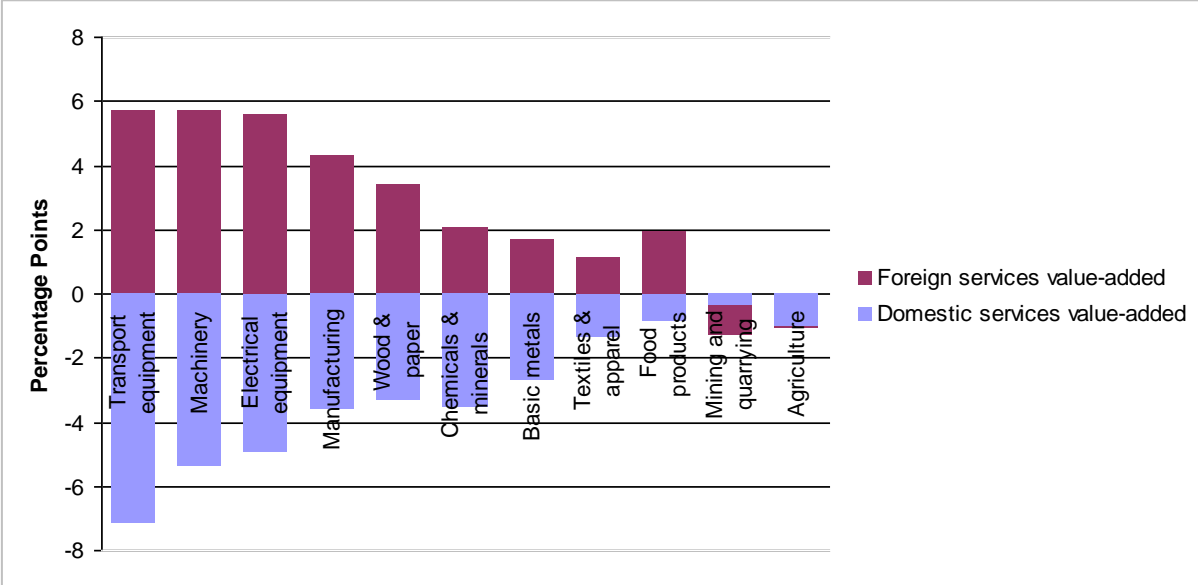
Over the past several decades, there has been substantial replacement of domestic services by imported ones, especially in high-technology sectors (figure 2). Domestically provided services fell dramatically in transport, machinery, electrical equipment and manufacturing. The drop of domestic services has been more than replaced by the expansion of foreign services, which increased significantly by 5.7, 5.6 and 5.6 percentage points, for transport, machinery and the electrical sectors, respectively. Consistent with these findings, the WTO (2015) indicated that developing economies experienced a dramatic decrease in domestic services and a sharp growth in foreign services value-added between 1995 and 2009. One of the reasons for the

<sup>4</sup> Following the United Nations classification, the economies analyzed in this note comprise 1 least developed economy (Cambodia), 12 developing economies (Brunei Darussalam, China, India, Indonesia, Malaysia, Philippines, Republic of Korea, Singapore, Thailand, Turkey, Viet Nam and Hong Kong, China and Taiwan Province of China), 1 economy in transition (Russian Federation) and 3 developed economies (Australia, Japan and New Zealand)

<sup>5</sup> Domestic services include direct, indirect and re-imported ones. Direct domestic services value-added is the value added by services exporting industry. Indirect domestic services value-added is the value added by other domestic services companies that provide intermediate inputs to exports of goods and services.

declining share of domestic services could be the increasing tendency of services offshoring which has become a common element of GVC phenomenon.<sup>6</sup>

**Figure 2: Changes in the shares of services value-added in gross industrial exports of Asia-Pacific economies, 1995-2009**



Source: ESCAP calculation based on OECD-WTO TiVA database (2015).

In sum, the information above suggests that the spread of GVCs especially in high-technology industries seems to translate into a relatively high service intensity of production and exports. A large part of rising service content has shifted from domestic sources to imports, which implies that access to cost-efficient service imports may be an important part for enhancing the country’s competitiveness in the exports of high-technology industrial sectors.

**Key services for export competitiveness of Asia-Pacific industries**

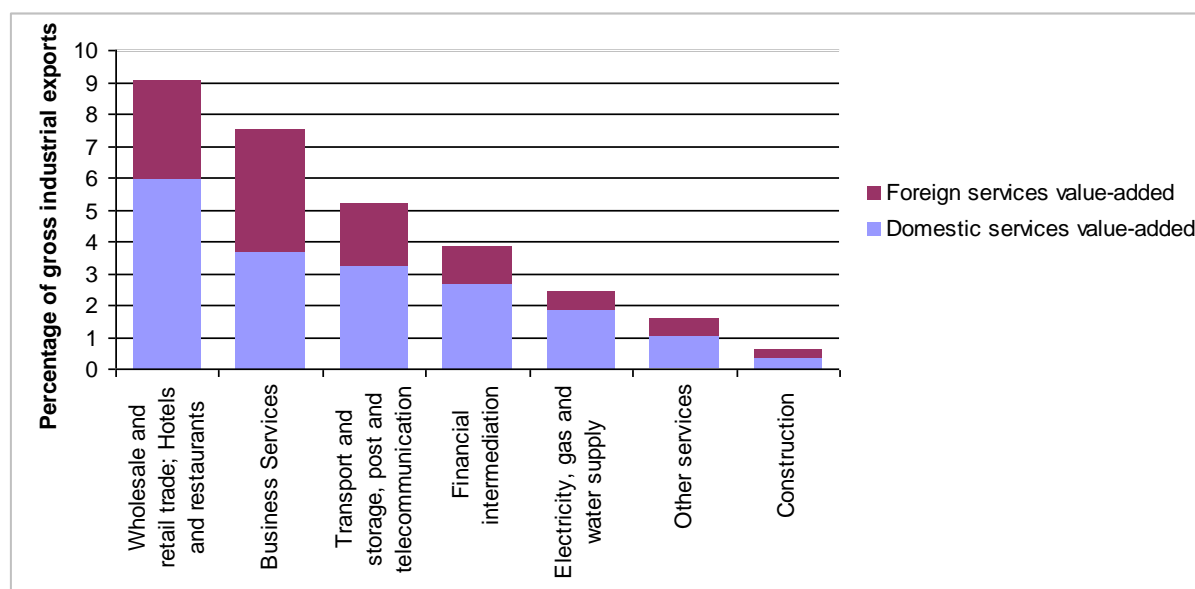
Policies to promote competitiveness of industrial exports should pay a particular attention to the cost-efficiency of key service inputs. Services inputs related to distribution (wholesale, retail, hotel and restaurant services) are the most important, with a share of 9% in gross industrial exports (figure 3). In fact, the share of wholesale and retail trade, hotels and restaurants service in exports of Asia-Pacific economies is higher than the world average (8%). Business services, and logistic-related services (transport and storage, post and telecommunication) are the other two major service inputs to the production of industrial exports, contributing 7.5% and 5.2% of gross industrial export value added, respectively. The service sector with the lowest contribution is construction, amounting to roughly 0.6% just after the residual category of other services with 1.6% share.

By their nature (services were historically perceived to be non-tradable), most services are likely to have relatively high domestic content, especially utility services (electricity, gas and water supply) and construction services. Among services embedded in industrial exports of

<sup>6</sup> Another factor could be the relative rapid increase in the value added from industrial sector.

Asia and the Pacific, electricity, gas and water supply, and financial intermediation have the highest domestic-to-foreign value-added ratio: 3 and 2.2, respectively. Similarly, in the case of wholesale and retail trade, hotels and restaurants, domestic services account for about two-third of the total value added. In contrast, business services depend on the contribution from foreign suppliers for slightly more than a half of business services embedded in industrial exports of Asia and the Pacific.

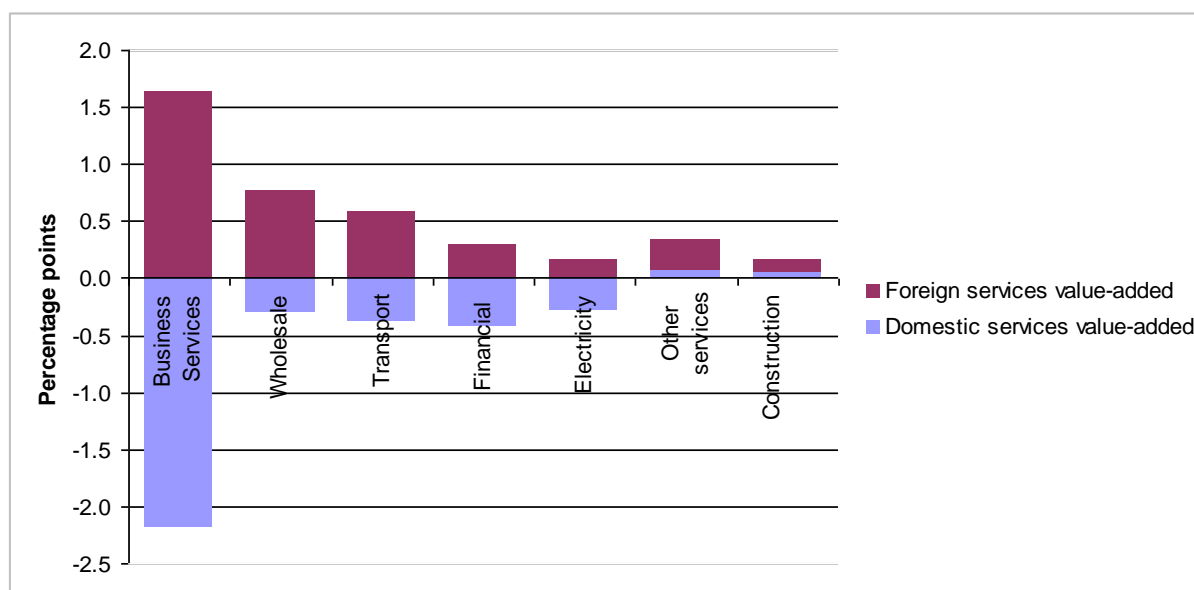
**Figure 3: Services inputs to gross industrial exports of Asia-Pacific economies, 2009**



Source: ESCAP calculation based on OECD-WTO TiVA database (2015).

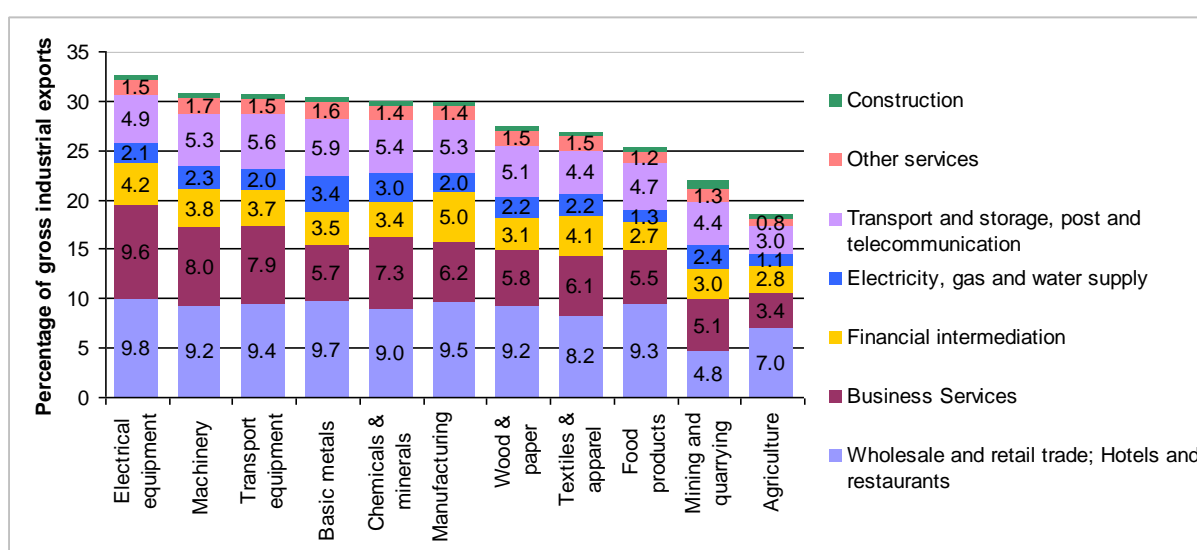
Service offshoring seems to be taking place for all service inputs. There has been a decline in the domestic content of all service inputs from 1995 to 2009 (figure 4). The shift of service sourcing has been most striking in the cases of business services where the domestic component decreased by 2.2 percentage points during those years.

**Figure 4: Changes in services value-added in gross industrial exports of Asia-Pacific economies, by source, 1995-2009**



Source: ESCAP calculation based on OECD-WTO TiVA database (2015).

**Figure 5: Services inputs to gross industrial exports of Asia-Pacific economies, by industrial sector, 2009**



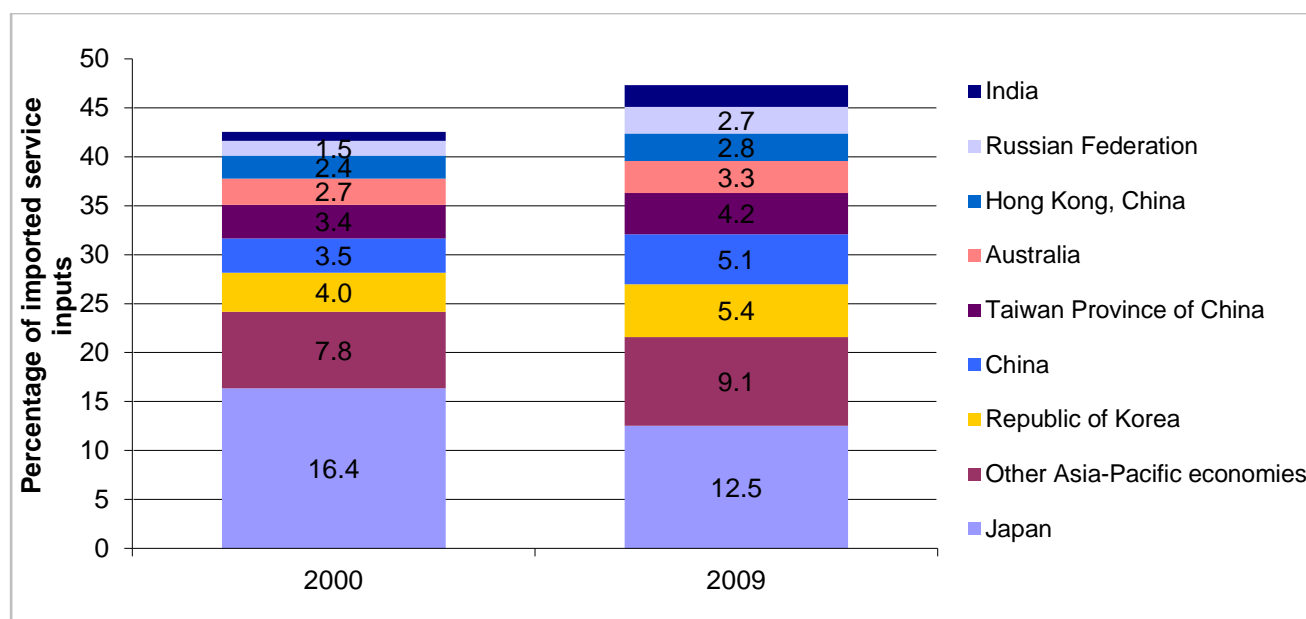
Source: ESCAP calculation based on OECD-WTO TiVA database (2015).

### Intraregional traded services in industrial exports from the Asia-Pacific

The increasing reliance on imported services mentioned earlier may boost intraregional trade opportunities if the rising demand for imported services can be met by supply (exports) from Asia-Pacific economies. A comparison between sources of imported service inputs from 2000 to 2009 reveals that the share of intraregional imports rose from 42.5% of service inputs to

47.3% (figure 6). In 2009, more than 80% of these imports were sourced from just 8 out of the 18 Asia-Pacific economies included in the database: Australia, China, India, Japan, Republic of Korea, Russian Federation, Hong Kong, China and Taiwan Province of China.<sup>7</sup> Although Japan remains the most important source of services inputs for the Asia-Pacific region, the country's contribution has declined from 16.4% in 2000 to 12.5% in 2009. On the other hand, the share of imported services sourced from other economies increased, mainly service exports from China, Republic of Korea, and India, whose shares increased by 1.6, 1.4, and 1.3 percentage points from 2000 to 2009.

**Figure 6: Intraregional imports of services inputs in industrial exports of Asia and the Pacific by sources, 2000 and 2009**



Source: ESCAP calculation based on OECD-WTO TiVA database (2015).

## Conclusion

Better statistical tracking of trade in value added has uncovered the phenomenon of servicification which had been a hidden part of trade values contained in the supply chains of goods. Using this new statistical source, this issue of Trade Insights confirms that services create a significant portion of industrial goods' export value. In the Asia-Pacific economies covered by the OECD-WTO TiVA Database, the value created by services as intermediate inputs represents about 29% of the total value added in industrial exports. In electrical, machinery, transport equipment, chemical products and basic metals directly and indirectly embodied services account for over 30% of value added of exports.

GVCs heighten the need for co-ordination and efficient linking of production stages and locations, with services playing a particularly prominent role. They rely heavily on distribution, logistics and information and communication technologies and therefore on efficient network infrastructure and complementary services such as finance and insurance. In the OECD-WTO

<sup>7</sup> The graph shows the top 8 performing economies in terms of services exported. The remaining 10 economies (Brunei Darussalam, Cambodia, Indonesia, Malaysia, Philippines, New Zealand, Singapore, Thailand, Turkey, and Viet Nam) are clustered in "Other AP economies".

database, distribution, business-coordination, and logistics are among the most important service inputs for the cost efficient production of Asia-Pacific industrial exports. At present, much of these key intermediate services are imported, in particular business services which are one of the essential inputs for production of exported manufacturing goods, especially electrical, machinery, transport equipment, and chemical products.

The importance of servicification requires a comprehensive approach to policy formulation. While liberalizing trade in goods is a starting point for creating new trade opportunities, the value chains of industrial goods also requires efficient services. Improvements in the performance of the service sector, 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, Philippines, Malaysia and Thailand, could translate into negative effects on exports of goods (World Bank, 2012).

However, as imported services become an increasingly essential element of internationalized production, governments will come under more pressure to find 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 should then 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 instance, ensuring access to the grid or network 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 good regulatory framework could enhance competition and stability of financial sector and contribute to macro stability. In addition, it is important to have a comprehensive set of policies to encourage spillovers and technological diffusion from foreign to domestic providers. This may include, for example, public investment to upgrade and improve accessibility to backbone infrastructure such as railways, ports, health, and education. The provision of education and training (e.g. in IT, languages, and professional skills) as well as greater domestic and international labour mobility will enable domestic firms, as well as individuals, to take advantage of service-export opportunities.



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