Services and the Third Unbundling in Indonesia

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Introduction

Trade in services is growing in importance all over the world, Indonesia included. Figure **??** shows Indonesia's export and import in services taken from Indonesian Statistic Bureau compiled by the Central Bank (Bank Indonesia, n.d.). Indonesia's services trade is growing steadily from 2000, only to be interrupted by the COVID-19 pandemic. Export service is dominated by tourism, while import services is dominated by logistics. While the trend is increasing, it is evident that Indonesia's import of services has always been dominating exports.

Indonesian government often concerned with deficit trade, but trade in services has often neglected in the discussion. Indeed, trade balance in goods are often far outweight the deficit in its services counterpart, as made apparent by Figure **??**. However, while Indonesia's trade balance fluctuates along with commodity prices and global demand in general, services trade deficit is consistent. Additionally, Indonesia's reliance on services import went up right after COVID-19 and seems to stabilize in a higher than pre-pandemic level. With the increasing role of services in the global trade, the deficit looks to be even more important in Indonesia's current account in the future.

The importance of trade in services goes beyond current account. With the ever decreasing cost of trade, separating a value up to tasks level (i.e., the third unbundling) is on the horizon (Baldwin 2011; Kimura 2018). Feedback mechanism from the third unbundling may benefits domestic manufacturing (Kimura 2018). Therefore, services trade may be important in the next stage of globalization.

Even by itself, trade in services seems to be the new future for developing countries (Baldwin 2011; Aiginger and Rodrik 2020). While trade in goods has been stagnating since 2011, trade

Figure 1: Indonesian trade in services

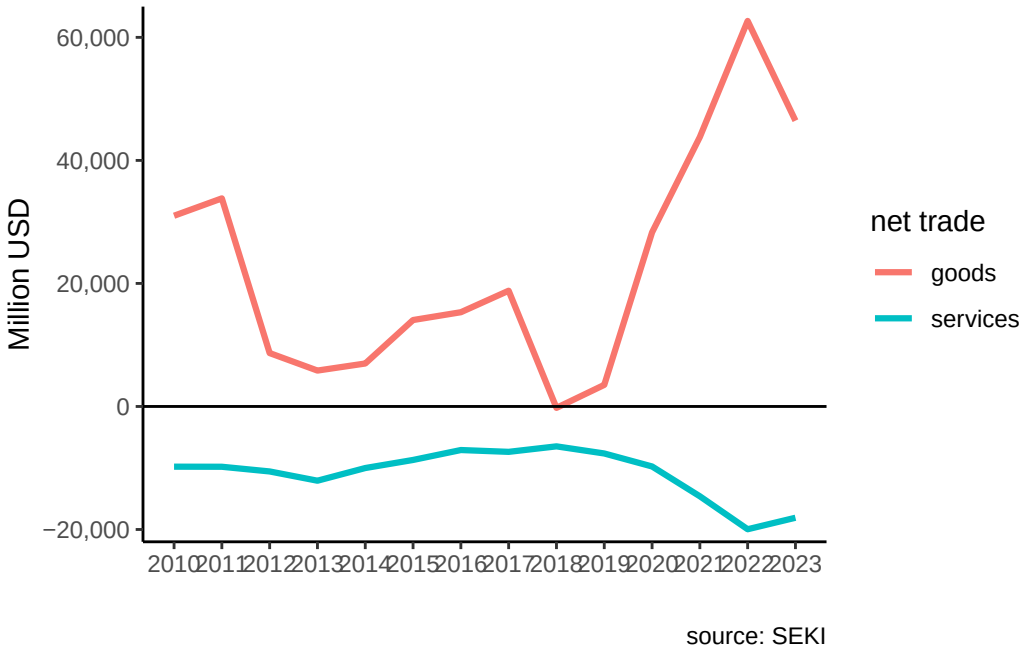

Figure 2: Net trade in goods and services of Indonesia, 200

in services continues to grow (see Figure **??**). The scale is indeed small, but the growth is consistent. With the expected trade cost for services and technologies to facilitate services trade grow, trade in services is expected to drive the development of countries missing the first two unbundlings.

(a) World trade (% of GDP)

(b) Indonesian trade (% of GDP)

Figure 3: Goods and services trade in Indonesia and the World

Indonesia, some argue, has missed the opportunity of the globalization of production network Hill and Pane (2018). The next form of globalization, thus, should be optimized by Indonesia. As seen in the Figure **??**, however, Indonesia seems to going to miss the services train as well. Trade in services in Indonesia is underdeveloped, and barriers to entry for services trade remains high (Magiera 2011; Patunru 2023).

This chapter have at least two objectives. First, we explores the general trade in services in Indonesia. We use BaTIS data (WTO/OECD 2022; Liberatore and Wettstein 2021) to show Indonesia's most important services trade and country partners for both export and import. We also use ICIO (**ICIO?**) to show how important services are to manufacturing, both domestic and foreign.

Secondly, we look at the development of Indonesia's regulations related to trade in services. We extend Magiera (2011) to examine Indonesia's development in regulatory practices around trade in services. We find the importance of foreign direct investment in opening trade in services, and show that relaxation of services stringency index seemed to stem from relaxation of foreign ownership restrictions in Indonesia's service sector. Additionally, relaxing trade in services in Indonesia is more complicated amid involvement of number of ministries magnitudes higher than ones involved in tariff reduction.

We arrange this chapter in the following. Section 2 discusses the development in research concerning services trade and its development in Indonesia, section 3 discusses about data and methods, section 4 explores Indonesian services trade as well as some third unbundling results, and section 5 concludes.

Review on services trade

The concept of trade has been evolving from the the way goods (and later services) value chain can be broken. Baldwin (2016) coined the term "unbundling" to express the variety of trade can be done by how much part of the supply chain of production can be traded across border. Lower costs in various trade barriers (trade costs, communication costs, and face-to-face costs) leads to more possible breakdowns of a value chain, promotes better division of tasks.

Kimura (2018) use this concept to argue three possible development paths for ASEAN member states to take. A country can move slowly, step-by-step by lowering trade cost traditionally from agriculture to machinaries to digital economy. One can also take a leap-frogging path, directly joining Global Value Chain by starting in the downstream, or even go directly to services trade, which is available through unbundling tasks in the service sectors. Lastly, A country can do a feedback mechanism, where advanced technology changes how old industries work. Looking at the last two approaches, services trade can be utilize either by learning from manufacturing to services export, or using services to create a better manufacturing.

Now with trade cost is even lower, unbundling the service sector become feasible. Some firms allowing some firms to leap ahead (Kimura 2018). Trade in services can be either source from abroad, or exported to foreign firms. Service sectors will accelerate both the second unbundling or third unbundling, allowing firms that utilize it to leap ahead of the competition.

Service sector can provide an important advantage for many firms, especially manufacturing ones. It can brigde information gap on the market, business customs and regulations in other countries, especially for new firms entering export market (Lodefalk 2014). As has been shown by (Melitz 2003), a non-trivial trade cost limits firm who can enter the export market. A reduction in trade cost in services would help lower the productivity threshold for firms, enabling more to enter the export market. This entrance would then induce learning-by-doing for these low productivity firms.

Lodefalk (2014) study Sweeden's manufacturing firm in 2001-2007. They conclude that firms with higher services embeded in its final products increases its intensity of export. In the Indonesian context, Hing and Thangavelu (2023) find that 10 per cent increase in service intensity of a firm increase its productivity by 7 to 8 per cent. The two papers use firms level data with information on what services each firm purchase. Information on whether the service is imported, however, is lacking.

Lower services cost can reduce firms' cost of service outsourcing. In the Indonesian context, Syahputri and Gupta (2024) uses gravity in service trade approach (Kimura 2018) to see whether IJEPA helps with improving Indonesia's trade in services. Utilizing services data from BaTIS, Syahputri and Gupta (2024) find that IJEPA, one of the first comprehensive economic agreement in Indonesia, does not increase service trade between the two countries.

Indonesia does not seem to use services a lot. Services account for only around 2% of Indonesian manufacturing firms' output (Hing and Thangavelu 2023), Indonesia's trade in services is also

falls short. Services trade requires easing in four different modes. Therefore, regulations typically rarely discussed in a trade agreement such as investment impediment, movement of natural persons and technical barrier all makes service trade much harder (Syahputri and Gupta 2024; Magiera 2011).

With *hilirisasi* or downstreaming policy, tendency to reduce import is more apparent. This policy's objective was to increase the added value of the manufacturing sector by reducing foreign content in the domestic value chain. Local Content Requirements (LCR) put emphasize on domestic value added which means making production in the same area/country, running counter to joining internationally oriented global value chains/GVCs (Athukorala and Patunru 2023). GVCs involve dividing up production process across borders, equivalent of the second unbundling. Thus, hilirisasi and LCR policies ended up bundling up production processes that could be divvied up among countries. This meant undoing the second unbundling, let alone encouraging the third unbundling.

Data and Method

There are two main dataset used in this chapter. Namely, Balanced Trade in Services (BaTIS) and the OECD Inter-Country Input-Output (ICIO) dataset.

The BaTIS database was first launched in 2017 by World Trade organization (WTO) and Organization of Economic Cooperation and Development (OECD) in tandem (Liberatore and Wettstein 2021). Unlike trade in goods, trade in services are harder to track than trade in goods amid gap in data collection by various countries. BaTIS collect both ways from pairs of trading partners, reconcile difference between reporting countries' trade. BaTIS is also used to build Trade in Value Added (TiVA) database and the ICIO database. BaTIS follows EBOPS 2010 sector classification (Liberatore et al. 2021) which can be observed in Table **??**.

Table 1: Services classification in BaTIS

Code	Category description
SA	Manufacturing services on physical inputs owned by others
SB	Maintenance and repair services n.i.e.
SC	Transport
SD	Travel
SE	Construction
SF	Insurance and pension services
SG	Financial services
SH	Charges for the use of intellectual property n.i.e.
SI	Telecommunications, computer, and information services
SJ	Other business services
SK	Personal, cultural and recreational services
SL	Government goods and services n.i.e.

Code	Category description

Trade services statistics are challenging in nature (Liberatore and Wettstein 2021). Only around 65% of total number of trade in services are recorded bilaterally. Unlike trade in goods, exports are recoreded better than imports, mainly due to advance countries being the majority of service exporters. Only 59% of trade value in BaTIS are fully reported, which are the reported 65% pair. The remaining 41% are estimated using share interpolations and gravity estimations. Since BaTIS is used for other databases including TiVA and ICIO, we should expect similar problems in these two databases.

Additionally, we also use the Indonesian trade in services statistics compiled by the Indonesian central bank called *Statistik Ekonomi dan Keuangan Indonesia* (SEKI) (Bank Indonesia, n.d.). It records Indonesia's trade in services in the same manner as BaTIS, but with less detail on the trading partners. Moreover, SEKI is also used to observe Indonesia's manufacturing GDP and goods exports and imports to estimate the third unbundling effect.

The OECD Inter-Country Input-Output (ICIO) decribes the sale and purchase relationships between sectors, consumers and the government within and across borders. ICIO estimates trades amonng 76 countries and 45 unique industries based on ISIC Revision 4(OECD, 2023). The database shows how much sectoral value added, both foreign and domestic, that is used by a certain industry.

In this study, we focus the manufacturing sector, specifically ISIC 10-27 in the ISIC rev. 4 classification. The ICIO aggregates these sectors into 16 sectors. We then aggregates all services that sell to these sectors into two categories, namely domestic services and foreign services.

On the third unbundling discussion, a good quality of firm-level data with information of its services sourced. Unfortunately, this information is not widely distributed in the Indonesian context. The second-best approach is to use international input-output table, which in this case ICIO is used.

Assume a manufacturing output and value added as a function of its factor or production. The nest of factor of production produces fully complementarily with its goods and services inputs. Let services inputs be complementarily used with goods inputs, but within the value produced by services, there is a degree of substitutability between foreign and domestic input as such:

$$Y_{it} = f(AS_{it}^{D}, AS_{it}^{F}) \tag{1}$$

for all i = manufacturing sectors and $t = year$. A is the nest multiplier, S_i^D and S_i^F are total services purchased by industry i, domestically and imported respectively.

Table 2: Summary Statistics from ICIO, million USD, 2002-2021.

	all			IDN		
	Mean	SD	Histogram	Mean	SD	Histogram
value added	4181.70	6845.40		8150.56	12 191.95	
output	15 930.67	21 741.55		21 529.33	29 317.48	
domestic services	2804.36	3889.86		3735.21	4176.07	
foreign services	845.74	1730.29		420.05	339.95	
domestic goods	5213.09	9008.54		7123.05	12 296.21	
foreign goods	7057.46	9172.47		10 240.63	12 983.59	
for. services share	5.76	3.70		2.45	1.34	
dom. services share	18.02	6.73		18.55	5.41	
for. goods share	47.62	11.39		50.30	11.98	
dom. goods share	28.37	11.11		28.60	8.57	

Assuming a cobb-douglass relationship, then we can log-linearize Equation **??** to a simple linear system as such:

$$y_{it} = a + \beta_d s_{it}^D + \beta_f s_{it}^F + \varepsilon_{it} \tag{2}$$

with a lower case represents the natural log of its uppercase counterpart.

To construct the dataset for the regression, we aggregate non-factor inputs from each manufacuring sectors, separated by whether it is from Indonesia or from other countries. All inputs from foreign countries are aggregated into foreign.

For comparison purpose, we also do the same for 4 countries in the region, namely Singapore, Malaysia, Thailand and Vietnam. Data from these 5 countries are then concatenated to add one more dimension, countries. Summary statistics on the data is shown in Table **??**.

Table **??** shows Average and standard deviation as well as distribution of value added, output, domestic and foreign goods and services value and share. Unsurprisingly Indonesian manufacturing output and value added is higher than average of 5 countries, amid how large Indonesia is compared to its neighbor. Interestingly, Indonesian manufacturing value added from foreign goods and share is larger than the average, despite Indonesia's protectionist tendency (Patunru 2023). Services, on the other hand, is different, as Indonesian services import lags compared to other countries.

Lastly, we run 6 fixed effect panel regressions. The first panel consists of two indices, country and sector, which both dummies are used as a fixed effect. The other 5 panels are fixed effect