HOW TO MEASURE BILATERAL ECONOMIC RELATIONS?
CASE OF INDONESIA – AUSTRALIA

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Abstract

Indonesia and Australia had agreed to seal the deal for a bilateral economic agreement entitled Indonesia-Australia Comprehensive Economic Partnership Agreement (IA CEPA). After about ten years since both countries committed to having a bilateral agreement, IA CEPA had entered into force on July 5th, 2020. This paper has two aims. Firstly, assessing potential trade and long-run investment relations with the combination of RCA (Revealed Comparative Advantage) and CMSA (Constant Market Share Analysis) with ToT (Terms of Trade) and Net Export (NX) as the filter. Secondly, measuring the potential impacts from tariff rate elimination utilizing the GTAP (Global Trade Analysis Project) model. This paper finds that both countries have complementarity relations that Indonesia can gain to improve manufacturing productivity, and Australia can benefit from sunrise to sunset relations. This paper proves that CEPA matches their need to increase their economic benefits, revealed that they could share mutual benefits and sustainable economic relations.

JEL Classification: D58; F14; F21; O24

Keywords

bilateral country studies — trade policy — CGE GTAP — FDI analysis — Indonesia Australia

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1. Introduction

1.1 Background

After about ten years of negotiation, a standard average period for trade negotiation, Indonesia and Australia have an effective come in force of the bilateral economic agreement. Not only cover trade issues, but this arrangement also figures long-term investment; therefore, it is named a comprehensive economic partnership agreement. Indonesia and Australia's economic relations have increased since Indonesia entered the reform era, starting with more intensive diplomatic visiting and conversation (Resosudarmo et al., 2015). Indonesia and Australia started to talk about the plan to directly bilateral agreement for the building block of the ASEAN-Australia-New Zealand Free Trade Area (AANZFTA) in 2010. In 2016, there was a report entitled Shaping the Indonesia Australia CEPA (Comprehensive Economic Partnership Agreement)[1] which assess both the current facts and expectation outcome of this bilateral economic cooperation. Positive expectation and sharing enthusiasm on this bilateral have increased until it comes into force in July 2020.

As for the economic cooperation, in addition to the WTO, Indonesia and Australia are together under several economic agreement frameworks such as the Cairns Group, which consists of twenty powerful agricultural exporting countries, the APEC (Asia-Pacific Economic Cooperation),

the RCEP (Regional Comprehensive Economic Partnership) which just officially signed in November 15th, 2020, the East Asia Summit, G20 Forum, and others. However, both countries do not have bilateral economic cooperation and need to build development program arrangements and trade agreements, but Indonesia and Australia also share the same interest in trade and investment cooperation. Along with this need, the world has become more fascinated with bilateral economic cooperation with more comprehensive coverages. In 2010, the era of bilateralism was born to compete with mega regionalism in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the RCEP. Bilateral CEPA becomes the most practical option for two countries that would like to enhance their economic relations from trade to investment and improve their productivity without worrying about multilateral pressures.

Before the IA-CEPA come into force, Indonesia had finalized three bilateral economic agreements with Japan (Indonesia-Japan Economic Partnership Agreement/IJEPA) in 2007, Pakistan (Indonesia-Pakistan Preferential Trade Agreement/IPPTA) in 2012, and Chile (Indonesia-Chile CEPA) in 2019.

Unlike the PTA, bilateral CEPA covers trade in goods and services and long-run investment relations. The economic assessment has to observe trade relations and trade indicators; other central economic cooperation such as foreign direct investment inflow and outflow can also be assessed (Fukuoka & Verico, 2015). Indonesia needs more comprehensive bilateral economic cooperation, and Australia is one of the right partners.

International economic relation covers both trade and investment but the agreement can cover either trade (PTA

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[1]The report was provided by the Australia Indonesia Business Council, other news can be found in The Lacklustre Australia-Indonesia Economic Relationship - Future Directions International: https://www.futuredirections.org.au/publication/lacklustre-australia-indonesia-economic-relationship/.

and FTA) or trade and investment (EPA and CEPA). The bilateral economic agreement between Indonesia and Australia is CEPA; therefore, the core question is, do these two countries have complementarity relations that can sustain their trade and investment relations?

1.2 Research Question

Based on Indonesia's need for comprehensive economic cooperation and the fact that Indonesia-Australia CEPA has come into force, this paper needs to respond to several questions:

1. How is Indonesia's competitiveness by-product?
2. What commodities will enhance trade relations between Indonesia and Australia?
3. What commodities will enhance long-run investments between Indonesia and Australia?
4. What are the impacts of Indonesia and Australia's CEPA on the economic sectors and factors?

1.3 Objective

Based on the research questions above, this paper attempts to prove:

1. Indonesia's competitiveness by product
2. Commodities that will enhance trade relations between Indonesia and Australia
3. Commodities that will enhance long-run investments between Indonesia and Australia
4. The impacts of Indonesia and Australia CEPA on their economic sectors and factors

1.4 Specific Coverage

This paper covers bilateral economic (trade and long-run investment) relations between Indonesia and Australia. There are several reasons why this paper chooses Indonesia – Australia economic relations. First, a calculation based on the V-Composite Index Model (V-CIM) (Verico, 2020) shows that Australia is one of Indonesia's strategic bilateral partners. Besides ASEAN and the EU, seven countries have strong trade and investment relations with Indonesia. They are the USA with V-CIM of 4.7, South Korea of 3.7, UAE and China of 3.4, India and Japan of 3.1, and Australia with 2.3 V-CIM. Second, Indonesia and Australia are under the same mega-regionalism with the ASEAN centrality principle of the RCEP. This bilateral will be a building block for the RCEP.

Third, Australia is a member of the CPTPP, and Indonesia had intended to join the TPP when the USA was still there. Considering the USA presidential election result, there will be an open option that the USA will support the CPTPP, and Indonesia will reconsider joining it afterward. If this happens, the Indonesia-Australia CEPA will be the building block for the CPTPP. This third consideration is Indonesia's ahead of the curve of thinking in picking how important the bilateral economic relations with Australia. Fourth, geographic proximity wise, Australia is one of Indonesian closest neighbouring countries of which mutual benefit from their economic cooperation will increase their economic welfare and enhance diplomatic and political stability between the two countries.

2. References, Indexes and GTAP Model

2.1 References

A study on Indonesia's trade and investment model in early 2020[2] proved that macroeconomic variables have significant effect on the strength of bilateral economic relations (Verico, 2020). This study adopted 15 macroeconomic variables: GDP, GDP PPP, Economic Growth, Unemployment Rate, Inflation Rate, GDP per Capita, Public Debt to GDP, Annual Budget Deficit to GDP, FDI Outflows to GDP, Agriculture Value Added to GDP, Agriculture Employment to Total Employment, Manufacture Value Added to GDP, Trade in Services to GDP, High-Tech Export to Total Manufacture Export and R&D Expenditure to GDP. This study found a significant level for each variable using panel data analysis. This significant level is used as the weighted for constructing the composite index model from all the variables. This study proved that Australia is one of Indonesia's important economic partners for having bilateral economic cooperation.

There is always a situation where global political power changes from a superpower, yet sunset countries to the sunrise countries. However, mutual interest with real values and benefits will make the relations between sunset and sunrise countries sustain. This is called hegemonic transition succession (Clark, 2011). This paper adopts the dynamic natural transition from superpower economic countries to emerging countries. If high-income and upper-middle-income countries have been adopted, then the economic relationship between Australia as a high-income country and Indonesia as upper-middle-income countries can complement mutual benefit and interest as their relationship guidance.

The globalization enthusiasm has increased optimism within countries in almost all kinds of cooperation. For instance, China and Russia are committed to having more optimistic bilateral relations to achieve a common interest with open, equal opportunities for both countries. A study of Ferdinand (2007) confirmed that China and Russia have agreed upon a so-called new relationship. The end of the cold war has contributed to the positive progress of bilateral economic relations between Russia and China. It is a long way to go, but a more solid bilateral relation worth it to be intensively constructed by both countries. This enthusiasm is between Russia and China and other countries, including Indonesia and Australia, with IA CEPA. Strong economic relations between the two countries will affect the enthusiasm sharing on many aspects of life for both countries towards their bright future. This inspires many bilateral economic relations are constructed nowadays.

The trade complementarity index can indicate the relationship between the two economies (Andreosso-O'Callaghan & Nicolas, 2007). Trade complementarity index helps two economies identify the risk of industries insensitive and promising sectors. These indicators can define trade and investment links for both economies. Andreosso-O'Callaghan & Nicolas adopted comparative trade advantage and intra-industry indicators to assess complementarity relations between ASEAN and EU regions. They applied intra and

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[2]For further detail: https://waseda.repo.nii.ac.jp/?action=pages_view_main&active_action=repository_view_main_item_detail&item_id=48377&item_no=1&page_id=13&block_id=21 .

inter-regional economic integration concept in assessing the relations. Their studies proposed the sunset and sunrise industries concept as an essential part of the complementarity analysis.

In the context of sunset industries and the need to increase profit through mergers, the study of Nishiwaki (2016) found that divestment with other industries was the rational option. As to reduce the cost from the excess of capital due to the decreasing demand, sunset industries need to do a merger with the industries that performed better. This study found that a merger is a solution for the industry to reduce excess capital problems due to the decreasing demand, yet as it made merger companies have oligopoly power and potentially reduce consumer surplus power. After merging, this study concluded that sunset industries obtained net benefit as both the producer profit and total welfare increased.

2.2 Indexes

This paper adopts Revealed Comparative Advantage (RCA), Constant Market Share Analysis (CMSA), Terms of Trade (ToT) and Net Export (NX). The combination of all indicators is used to assess Indonesia's trade competitiveness (objective number one). The combination of RCA and CMSA[3] is used to assess Indonesia and Australia trade and long-run investment relations by product of Harmonized System 4/HS4 (objective number two and three). The data has been adopted from the Trade Map (Trade Map - Trade statistics for international business development: https://www.trademap.org/Index.aspx). The equations are:

$$RCA_{ijt} = \frac{X_{ijt}/\sum_{i=1}^{i=n} X_{jt}}{X_{iwt}/\sum_{i=1}^{i=n} X_{jt}} \qquad (1)$$

Where:

i : tradable goods of export (X) from country J in time t;
w : world data;
n : the latest HS4 tradable goods.

$$\begin{aligned} X_{ijt1} - X_{ijt0} = &\sum(X_{iw\Delta t}).X_{ijt0} - X_{ijt0} \\ &+ (X_{iw\Delta t} - \sum X_{iw\Delta t}).X_{ijt0} \\ &+ (X_{ijt1} - X_{iw\Delta t}.X_{ijt0}) \end{aligned} \qquad (2)$$

Where:

$\sum(X_{iw\Delta t}).X_{ijt0} - X_{ijt0}$: General Factor (CMSA1);
$(m_{iw\Delta t} - \sum m_{iw\Delta t}).X_{ijt0}$: Composition Factor (CMSA2);
$(X_{ijt1} - m_{iwj\Delta t}.X_{ijt0})$: Comparative Factor (CMSA3).

This paper uses the RCA and comparative factor (CMSA3) to define whether the product is classified as great industry (RCA>1, CMSA3>0), sunrise (RCA<1, CMSA3>0), sunset (RCA>1, CMSA3<0), or suffer (RCA<1, CMSA3<0). All of these classifications apply to both Indonesia and Australia's HS4 dataset.

$$ToT_{it} = \frac{PX_{it}}{PM_{it}} \qquad (3)$$

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[3]For further detail: Microsoft Word - AFTA,Trade & FDI.Verico.Kiki.doc (uni-muenchen.de): https://mpra.ub.uni-muenchen.de/42087/1/MPRA_paper_42087.pdf.

$$NX_{it} = X_{it} - M_{it} \qquad (4)$$

The combination of ToT and NX is used to assess the quality of product for each Indonesia's RCA and CSMA combination. The quality of product can be elegance (ToT>1, NX>0), increase (ToT<1, NX>0), decrease (ToT>1, NX<0), and poor quality (ToT<1, NX<0).

The analysis period for all indicators is 2015 and 2019 (the last five years and before the global pandemic hit the world). As for the static indicators of RCA and ToT, this paper uses year of 2019 and the dynamic indicators of CMSA3 and NX, this paper applies 2015 and 2019.

2.3 GTAP Model

This paper uses the GTAP model to measure bilateral Indonesia's impacts – Australia CEPA on trade balance and price of supply. GTAP is a global network managed by both researchers and policymakers to estimate quantitative measurements on international policies. The facility center for the GTAP is located in Purdue University's Department of Agricultural Economics.

This paper adopts GTAP10A with Indonesia, Australia, RCEP, and TPP as the new regions and 141 old regions. As for the sectors, this paper adopts 65 old sectors that have been mapped into ten sectors and eight old factors that have been mapped into five new factors. The simulations were based on the Most Favored Nation (MFN) rate liberalization for HS6 digit of both countries. This paper used the type of shock of the change rate percentage and solved it with Euler's three solutions method.

The GTAP10A model is useful to assess the impacts of economic cooperation for both tradable and non-tradable goods. Considering that the HS4 code covers tradable goods, then for non-tradable, the usage of GTAP is necessary.

3. Descriptive Analysis: Indonesia's Trade Competitiveness

This paper presents Indonesia and Australia's comparative macroeconomic variables before having a descriptive analysis of Indonesia's trade competitiveness. Both countries are a member of G20, the top biggest economic size countries on earth. Australia has USD1.3 trillion at rank 13th, while Indonesia has USD1 trillion at rank 16th globally. However, Australia has 25.5 million people in terms of the population, while Indonesia has 273.5 million people, making Australia's GDP per capita much above Indonesia at USD54.9 K and USD4.13 K, respectively. Australia is classified as a high-income country with GDP per capita above USD12.53 K, while Indonesia has just entered the upper-middle-income level. According to Rostow's economic level, Australia is part of the maturity economy, while Indonesia has just entered the take-off position. In this typical economic cooperation, the most interesting is how the Australian sunset business cooperate with the sunrise Indonesia business in the same industry.

Indonesia is better in terms of population size, while Australia is better in terms of generating value-added. A

productive country like Australia is feasible to have complementarity cooperation with a relatively big country like Indonesia. The first way is to share a positive spillover effect on Indonesia's human capital productivity throughout education and health investment. The second way has stable trade cooperation to boost economic growth: the more significant the Indonesian economy, the better and more robust economic cooperation between Australia and Indonesia.

In the agricultural sector, Indonesia is better in terms of share of sector per GDP but much less in productivity than Australia. The opposite figure in the service sector, whereas in terms of share to GDP, Australia is higher than Indonesia, but Indonesia is better in productivity. Nevertheless, this has to be confirmed with informal-formal activities and trade in services. It is clear that trade in services as a percentage to GDP, Australia is better than Indonesia. As the informal sector in Indonesia is dominant, especially during the global pandemic, which about 60 percent of GDP; therefore, it shows Indonesia's economy mostly consists of a low value-added service sector. The size of service export in current USD also confirmed that Australia's service sector is more globally competitive than Indonesia's service sector (see Table 1).

Indonesia has higher productivity in the service sector and manufacture than of Australia, but this indicator has to be confirmed with Indonesia's tradable goods' quality. This paper describes Indonesia's quality of tradable products by HS4 indicated by the Terms of Trade (ToT). This indicator has been completed with net export (NX) value indicator and classified as elegance, increase, decrease, and poor. The combination of ToT and NX is useful for preliminary assessment of the quality of the product. The manufacturing sector in Indonesia is relatively in better performance than that of Australia. This is an ample opportunity for Indonesia to receive investment from the sunset Industry in Australia to Indonesia's sunrise industry. The next chapter this chapter will discuss which products that meet this criterion.

Before having the quantitative analysis of potential bilateral economic cooperation between Indonesia and Australia, this paper explains Indonesia's competitiveness by HS4 product with a combination of four indexes: RCA, CMSA, ToT, and NX.

In the observation period from 2015 to 2019, in 1,257 HS4 products observed, Indonesia has 150 products with great category, and 50 of them are classified as elegance. These are products that potentially become the most attractive products for long-run investment (FDI inflows), including for Australian investors (see Table 2).

Indonesia has 34 HS4 products classified as sunrise and increases, which means even RCA and ToT less than one, but CMSA3 and Net Export are positive. These will be the next Indonesian absolute advantage products (see Table 3).

Indonesia needs to pay attention to 16 HS4 products experiencing both the sunset and decrease situation. This means that they are experiencing difficulties either due to the decreasing demand, increasing competition from other countries, or a combination of the two (see Table 4).

Finally, Indonesia has 313 HS4 products that are both suffer and poor, which means RCA and ToT less than one, and CMSA3 and Net Export are negative. Indonesia needs to pay attention to these products, especially because the number of this classification is more than that of great and elegance. It shows that Indonesia has many absolute advantages (150 of 1,257 products) but at the same time has 313 products with absolute disadvantage condition.

Indonesia has 1,257 HS4 products, of which 413 products are matched between the classification of great, sunrise, sunset, suffer and classification of elegance, increase, decrease, and poor. This means 844 products out of 1,257 or 67 percent of products are not matched. This means that majority, Indonesian industries' conditions different from their quality. It can be industry is classified as a sunrise, but its product quality is classified as decrease and the opposite or the industry status is sunset, but its product quality status is the increase.

4. Quantitative Analysis: RCA-CMSA and GTAP Simulation

From 1,257 HS4, this paper finds that 2 percent (25 products) do not have complete information. In 1,232, the majority Indonesia products is suffer (584), followed by sunrise (387), great (150), and sunset (111). Australia also has similar patterns of which dominant classification is suffer industry (581) and followed by sunrise (535), great (64), and sunset (52). Further details in Table 5. The significant difference is in the classification of sunrise that its number is ten times than that of sunset, whereas, in Indonesia, a similar ratio is only about 3.5 times. This indicates that Australia is better at maintaining its manufacturing performance and nurturing them at the same time.

The comparison between Indonesia and Australiafrom macroeconomic variables is in line with the competitiveness analysis by HS4 dataset. As shown in the comparison of income per capita level, Australia, in terms of productivity level and its ability to secure it, is better than Indonesia. This means economic cooperation between Indonesia and Australia has to create a positive spill over effect on the increase of knowledge, know-how, cooperation in technology, and research and development. Indonesia needs to learn from Australia on how to improve its productivity and transform its product quality.

Given this consideration, other relations are feasible just on trade (export and import); nevertheless, special on investment purposes as the core of knowledge transfer, Indonesia and Australia should focus on sunset – sunrise classification. Considering the current situation that Australia is at a high-income level while Indonesia is at the bottom level of upper-middle-income, the long-run investment can follow the non-mainstream approach. Usually, the sunset industry in one country invests in the sunrise industry in another country. Considering that Australia is having a more high-income level than Indonesia, the investment flows should come from the other way around, which is the sunrise industry in Australia to the sunset industry in Indonesia and the opposite.

In order to have a complete set of information for the sunrise and sunset relation, it has to be completed with product quality information. This paper proposes that product quality of elegance is used as the filtering for the sunrise and sunset relations. Indonesia has 23 HS2 products that can receive long-run investment from Australia as FDI in-

flows, while Australia has 17 HS2 for FDI Outflows from Indonesia to Australia. This paper provides the list of 23 HS2 products that potential to receive FDI inflows from Australia in Table 6 and 17 HS2 products that potential for Indonesian investors to invest in Australia in Table 7.

Labor-intensive products are mostly potential products for Australia to invest in Indonesia, such as clothing and footwear. Other potential products are jewelry, copper wire, electrical capacitors, furniture, and musical instruments. Indonesia can invest in Australia in food and dairy-related products such as meat, cheese, flours, and wheat gluten. Indonesia can apply buyback investment as most of Indonesia's imports are food-related products. Other potential products are in mining, such as zinc, peptones, aluminum, and nickel.

As for the impacts of this bilateral economic cooperation to sectors and factors of development, this paper applies the GTAP model with the simulation of trade liberalization of a tariff rate reduction of both countries one by one. This paper uses the tariff rate of MFN, of which Indonesia has 8.29 percent, and Australia has 3.04 percent. This paper analyses the impacts on both the sectors and factors (Table 8 to Table 11). The GTAP model shows that Australia will obtain a surplus in the service sector, light manufacturing, and labor-intensive, while Indonesia will benefit from food-related products, light, and heavy manufacturing.

The GTAP simulation shows that Indonesia receives more benefit from the trade balance while Australia will benefit from the investment. As for the price of supply, Australia's impact is higher than in Indonesia. This confirms that bilateral Indonesia-Australia cooperation will be increasing productivity in Australia since the price and productivity (marginal productivity of labor/MPL) have an inverse relation. This paper finds that Indonesia and Australia have complementary economic relations, potentially generating mutual benefit for both countries. Indonesia and Australia can share mutual benefits in trade and investment and agriculture, manufacturing, and service sectors. The economic impacts on sectors and factors are higher when Indonesia reduces its import protection than the other way around if Australia diminishes it.

5. Conclusion

There are several valuable conclusions which taken from paper:

a. Referring to macroeconomic indicators' comparison, Indonesia and Australia are at a different level. In the simple indicator, Australia is in a high-income country while Indonesia just entered the upper-middle income level. This paper provides more detailed indicators of sectors (agriculture, manufacture, service), trade (export), and factor of production (employment and productivity) and confirmed that Australia is more productive with high value-added economic activities and Indonesia has a comparative advantage in the size and small-medium economic activities.

b. This paper applies RCA and CMSA3 to define the classification of great, sunrise, sunset, and suffer. It also applies ToT and NX to identify the quality and current net trade balance of the product. This study uses the HS4 level, which consists of 1,257 products with complete information about 1,232 products. This study confirms the deindustrialization problem in Indonesia since 76 percent of its industry is suffering and poor, and the rest is either great and elegance (12 percent), sunrise and increase (8 percent), and sunset and decrease (4 percent).

c. This paper combines RCA and CMSA3 Indonesia and RCA and CMSA3 Australia to find the industry's status for each country. It focuses on sunrise and sunset relation to define investment flows, and the rest are classified as trade relations. This paper finds 23 products of HS4 in Indonesia that are classified as sunset and elegance while in Australia, these products are classified as the sunrise. These are products that potential to receive FDI inflows from Australia. They include labour-intensive products such as clothing and footwear, mining such as jewellery and copper wire, low to medium technology such as electric shavers, electric capacitors, musical instruments, furniture and tableware, school equipment, pencils and books, and drawing parts. This paper also finds 17 products of HS4 in Australia that potentially receive investment from Indonesia because the combination relation is sunrise and sunset. They are food-related products (meat, cheese/dairy, wheat, flours), which are dominant in Indonesian imports and mining products such as zinc ores, inorganic colouring, nickel, and aluminium.

d. This paper applies the GTAP10A model to simulate the impacts of bilateral economic cooperation of Indonesia and Australia. This paper finds that Australia will benefit from textile and apparel, light manufacturing, and service sectors, while Indonesia will gain grain crops, meat, processed food, light and heavy manufacturing. These GTAP simulation results are similar to the analysis of combination (RCA and CMSA3) of sunset to sunrise investment flows except for the service sector as non-tradable sectors beyond the HS4 classification.

e. This paper concludes that economic cooperation between Indonesia and Australia is complementarity and meets trade investment relations; therefore, CEPA mode matches the two countries' needs. This bilateral economic cooperation will increase both countries' economic gains, mutual benefit for all, and sustainability afterward.

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GTAP Data Bases: GTAP 10 Data Base (purdue.edu)

Tables

Table 1. Macroeconomic Indicators of Indonesia and Australia (2018/9)

No	Macroeconomics Indicators	Australia	Indonesia
1	Agriculture, forestry, and fishing, value added (% of GDP)	2.09	12.81
2	Employment in agriculture (% of total employment) (modeled ILO estimate)	2.51	30.26
3	Agriculture Productivity	0.83	0.42
4	Agriculture, forestry, and fishing, value added (annual % growth)	-10.38	3.91
5	Agriculture, forestry, and fishing, value added per worker (constant 2010 US$)	72,842	3,730
6	Services, value added (% of GDP)	66.15	43.41
7	Employment in services (% of total employment) (modeled ILO estimate)	77.73	47.76
8	Service Sector Productivity	0.85	0.91
9	Services, value added (annual % growth)	6.51	5.83
10	Services, value added per worker (constant 2010 US$)	102,193	8,334.87
11	Trade in services (% of GDP)	10.26	6.05
12	Service exports (BoP, current US$)	70,993,094,955	28,002,536,921
13	Manufacturing, value added (% of GDP)	5.65	19.86
14	Employment in industry (% of total employment) (modeled ILO estimate)	19.76	21.98
15	Manufactures Productivity	0.29	0.90
16	Manufacturing, value added (annual % growth)	-1.48	4.27
17	Industry (including construction), value added per worker (constant 2010 US$)	134,873	16,446
18	Manufactures exports (% of merchandise exports)	12.81	44.72
19	Medium and high-tech exports (% manufactured exports)	20.64	28.09
20	High-technology exports (% of manufactured exports)	16.71	8.02
21	Tariff rate, most favored nation, simple mean, manufactured products (%)	3.04	8.29

Source: WDI, 2020. Productivity is own calculation

Table 2. Indonesian HS4 Products with Classification of Great and Elegance 2015–19

HS4	Product	RCA-CMS	ToT N
'0301	Live fish	Great	Elegance
'0304	Fish fillets and other fish meat, whether or not minced, fresh, chilled or frozen	Great	Elegance
'0305	Fish, fit for human consumption, dried, salted or in brine; smoked fish, fit for human consumption, ...	Great	Elegance
'0410	Turtles' eggs, birds' nests and other edible products of animal origin, n.e.s.	Great	Elegance
'0905	Vanilla	Great	Elegance
'0907	Cloves, whole fruit, cloves and stems	Great	Elegance
'1302	Vegetable saps and extracts; pectic substances, pectinates and pectates; agar-agar and other ...	Great	Elegance
'1604	Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs	Great	Elegance
'1605	Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved (excluding smoked)	Great	Elegance
'1804	Cocoa butter, fat and oil	Great	Elegance
'2403	Manufactured tobacco and manufactured tobacco substitutes and "homogenised" or "reconstituted" ...	Great	Elegance
'4106	Tanned or crust hides and skins of goats or kids, pigs, reptiles and other animals, without ...	Great	Elegance
'4203	Articles of apparel and clothing accessories, of leather or composition leather (excluding ...	Great	Elegance
'6102	Women's or girls' overcoats, car coats, capes, cloaks, anoraks, incl. ski jackets, windcheaters, ...	Great	Elegance
'6103	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches ...	Great	Elegance
'6104	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, ...	Great	Elegance
'6108	Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas, négligés, bathrobes, ...	Great	Elegance
'6110	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted (excluding ...	Great	Elegance
'6116	Gloves, mittens and mitts, knitted or crocheted (excluding for babies)	Great	Elegance
'6201	Men's or boys' overcoats, car coats, capes, cloaks, anoraks, incl. ski jackets, windcheaters, ...	Great	Elegance
'6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches ...	Great	Elegance
'6205	Men's or boys' shirts (excluding knitted or crocheted, nightshirts, singlets and other vests)	Great	Elegance
'6206	Women's or girls' blouses, shirts and shirt-blouses (excluding knitted or crocheted and vests)	Great	Elegance
'6208	Women's or girls' singlets and other vests, slips, petticoats, briefs, panties, nightdresses, ...	Great	Elegance
'6210	Garments made up of felt or nonwovens, whether or not impregnated, coated, covered or laminated; ...	Great	Elegance
'6212	Brassieres, girdles, corsets, braces, suspenders, garters and similar articles and parts thereof, ...	Great	Elegance
'6216	Gloves, mittens and mitts, of all types of textile materials (excluding knitted or crocheted ...	Great	Elegance
'6704	Wigs, false beards, eyebrows and eyelashes, switches and the like, of human or animal hair ...	Great	Elegance
'7101	Pearls, natural or cultured, whether or not worked or graded, but not strung, mounted or set, ...	Great	Elegance
'7108	Gold, incl. gold plated with platinum, unwrought or not further worked than semi-manufactured ...	Great	Elegance
'7202	Ferro-alloys	Great	Elegance
'7403	Copper, refined, and copper alloys, unwrought (excluding copper alloys of heading 7405)	Great	Elegance
'7404	Waste and scrap, of copper (excluding ingots or other similar unwrought shapes, of remelted ...	Great	Elegance
'7406	Powders and flakes, of copper (excluding grains of copper and spangles of heading 8308)	Great	Elegance
'7507	Tubes, pipes and tube or pipe fittings "e.g., couplings, elbows, sleeves", of nickel	Great	Elegance
'8001	Unwrought tin	Great	Elegance
'8003	Tin bars, rods, profiles and wire, n.e.s.	Great	Elegance
'8418	Refrigerators, freezers and other refrigerating or freezing equipment, electric or other; heat ...	Great	Elegance
'8522	Parts and accessories suitable for use solely or principally with sound reproducing and recording ...	Great	Elegance
'8527	Reception apparatus for radio-broadcasting, whether or not combined, in the same housing, with ...	Great	Elegance
'8531	Electric sound or visual signalling apparatus, e.g. bells, sirens, indicator panels, burglar ...	Great	Elegance
'8544	Insulated "incl. enamelled or anodised" wire, cable "incl. coaxial cable" and other insulated ...	Great	Elegance
'8711	Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor, with or without side-cars; ...	Great	Elegance
'8712	Bicycles and other cycles, incl. delivery tricycles, not motorised	Great	Elegance
'8714	Parts and accessories for motorcycles and bicycles and for carriages for disabled persons, ...	Great	Elegance
'9106	Time of day recording apparatus and apparatus for measuring, recording or otherwise indicating ...	Great	Elegance
'9205	Wind musical instruments "e.g. clarinets, trumpets, bagpipes, keyboard pipe organs, harmoniums ...	Great	Elegance
'9207	Musical instruments, the sound of which is produced, or must be amplified, electrically, e.g. ...	Great	Elegance
'9404	Mattress supports (excluding spring interiors for seats); articles of bedding and similar furnishing, ...	Great	Elegance
'9602	Worked vegetable or mineral carving material and articles of these materials n.e.s; moulded ...	Great	Elegance

Source: Own calculation based on Trade Map, 2020

Table 3. Indonesian HS4 Products with Classification of Sunrise and Increase 2015–19

HS4	Product	RCA-CMS	ToT N
'0207	Meat and edible offal of fowls of the species Gallus domesticus, ducks, geese, turkeys and …	Sunrise	Increase
'0602	Live plants incl. their roots, cuttings and slips; mushroom spawn (excluding bulbs, tubers, …	Sunrise	Increase
'0604	Foliage, branches and other parts of plants, without flowers or flower buds, and grasses, mosses …	Sunrise	Increase
'0705	Lettuce "Lactuca sativa" and chicory "Cichorium spp.", fresh or chilled	Sunrise	Increase
'0707	Cucumbers and gherkins, fresh or chilled	Sunrise	Increase
'0813	Dried apricots, prunes, apples, peaches, pears, papaws "papayas", tamarinds and other edible …	Sunrise	Increase
'1205	Rape or colza seeds, whether or not broken	Sunrise	Increase
'1501	Pig fat, incl. lard, and poultry fat, rendered or otherwise extracted (excluding lard stearin …	Sunrise	Increase
'1601	Sausages and similar products, of meat, offal or blood; food preparations based on these products	Sunrise	Increase
'1603	Extracts and juices of meat, fish or crustaceans, molluscs and other aquatic invertebrates	Sunrise	Increase
'2201	Waters, incl. natural or artificial mineral waters and aerated waters, not containing added …	Sunrise	Increase
'2514	Slate, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or …	Sunrise	Increase
'2607	Lead ores and concentrates	Sunrise	Increase
'2608	Zinc ores and concentrates	Sunrise	Increase
'2620	Slag, ash and residues containing metals, arsenic or their compounds (excluding those from …	Sunrise	Increase
'3305	Preparations for use on the hair	Sunrise	Increase
'4903	Children's picture, drawing or colouring books	Sunrise	Increase
'4907	Unused postage, revenue or similar stamps of current or new issue in the country in which they …	Sunrise	Increase
'4909	Printed or illustrated postcards; printed cards bearing personal greetings, messages or announcements, …	Sunrise	Increase
'5110	Yarn of coarse animal hair or of horsehair, incl. gimped horsehair yarn, whether or not put …	Sunrise	Increase
'5908	Textile wicks, woven, plaited or knitted, for lamps, stoves, lighters, candles or the like; …	Sunrise	Increase
'6113	Garments, knitted or crocheted, rubberised or impregnated, coated or covered with plastics …	Sunrise	Increase
'6501	Hat-forms, hat bodies and hoods of felt, neither blocked to shape nor with made brims; plateaux …	Sunrise	Increase
'6901	Bricks, blocks, tiles and other ceramic goods of siliceous fossil meals, e.g. kieselguhr, tripolite …	Sunrise	Increase
'6904	Ceramic building bricks, flooring blocks, support or filler tiles and the like (excluding those …	Sunrise	Increase
'6913	Statuettes and other ornamental ceramic articles, n.e.s.	Sunrise	Increase
'6914	Ceramic articles, n.e.s.	Sunrise	Increase
'7016	Paving blocks, slabs, bricks, squares, tiles and other articles of pressed or moulded glass, …	Sunrise	Increase
'7313	Barbed wire of iron or steel; twisted hoop or single flat wire, barbed or not, and loosely …	Sunrise	Increase
'7401	Copper mattes; cement copper "precipitated copper"	Sunrise	Increase
'7604	Bars, rods and profiles, of aluminium, n.e.s.	Sunrise	Increase
'7802	Lead waste and scrap (excluding ashes and residues from lead production "heading No 2620", …	Sunrise	Increase
'8801	Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft	Sunrise	Increase
'9619	Sanitary towels (pads) and tampons, napkins and napkin liners for babies, and similar articles, …	Sunrise	Increase

Source: Own calculation based on Trade Map, 2020

Table 4. Indonesian HS4 Products with Classification of Sunset and Decrease 2015–19

HS4	Product	RCA-CMS	ToT N
'3204	Synthetic organic colouring matter, whether or not chemically defined; preparations based on …	Sunset	Decrease
'3920	Plates, sheets, film, foil and strip, of non-cellular plastics, not reinforced, laminated, …	Sunset	Decrease
'4010	Conveyor or transmission belts or belting, of vulcanised rubber	Sunset	Decrease
'4113	Leather further prepared after tanning or crusting "incl. parchment-dressed leather", of goats …	Sunset	Decrease
'5210	Woven fabrics of cotton, containing predominantly, but < 85% cotton by weight, mixed principally …	Sunset	Decrease
'5212	Woven fabrics of cotton, containing predominantly, but < 85% cotton by weight, other than those …	Sunset	Decrease
'5407	Woven fabrics of synthetic filament yarn, incl. monofilament of >= 67 decitex and with a cross …	Sunset	Decrease
'5514	Woven fabrics containing predominantly, but < 85% synthetic staple fibres by weight, mixed …	Sunset	Decrease
'5515	Woven fabrics containing predominantly, but < 85% synthetic staple fibres by weight, other …	Sunset	Decrease
'5601	Wadding of textile materials and articles thereof; textile fibres with a length of <= 5 mm …	Sunset	Decrease
'6406	Parts of footwear, incl. uppers whether or not attached to soles other than outer soles; removable …	Sunset	Decrease
'7304	Tubes, pipes and hollow profiles, seamless, of iron or steel (excluding products of cast iron)	Sunset	Decrease
'7407	Bars, rods and profiles, of copper, n.e.s.	Sunset	Decrease
'8476	Automatic goods-vending machines, e.g. postage stamp, cigarette, food or beverage machines, …	Sunset	Decrease
'8533	Electrical resistors, incl. rheostats and potentiometers (excluding heating resistors); parts …	Sunset	Decrease
'9209	Parts and accessories for musical instruments, e.g. mechanisms for musical boxes, cards, discs …	Sunset	Decrease

Source: Own calculation based on Trade Map, 2020

Table 5. Indonesia and Australia Competitiveness Combination Analysis

Combination		Australia				
		Suffer	Sunset	Sunrise	Great	Total
Indonesia	Suffer	295	27	230	32	584
	Sunset	50	3	54	4	111
	Sunrise	168	17	184	18	387
	Great	68	5	67	10	150
	Total	581	52	535	64	1,232

Source: Own calculation based on Trade Map, 2020

Table 6. Indonesia Potential FDI Inflows from Australia

HS4	Product	Indonesia	Australia	Bilateral	Quality
'4011	New pneumatic tyres, of rubber	Sunset	Sunrise	FDIIn	Elegance
'4015	Articles of apparel and clothing accessories, incl. gloves, mittens and mitts, for all purposes, ...	Sunset	Sunrise	FDIIn	Elegance
'5705	Carpets and other textile floor coverings, whether or not made up (excluding knotted, woven ...	Sunset	Sunrise	FDIIn	Elegance
'6101	Men's or boys' overcoats, car coats, capes, cloaks, anoraks, incl. ski jackets, windcheaters, ...	Sunset	Sunrise	FDIIn	Elegance
'6105	Men's or boys' shirts, knitted or crocheted (excluding nightshirts, T-shirts, singlets and ...	Sunset	Sunrise	FDIIn	Elegance
'6109	T-shirts, singlets and other vests, knitted or crocheted	Sunset	Sunrise	FDIIn	Elegance
'6111	Babies' garments and clothing accessories, knitted or crocheted (excluding hats)	Sunset	Sunrise	FDIIn	Elegance
'6204	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, ...	Sunset	Sunrise	FDIIn	Elegance
'6209	Babies' garments and clothing accessories of textile materials (excluding knitted or crocheted ...	Sunset	Sunrise	FDIIn	Elegance
'6211	Tracksuits, ski suits, swimwear and other garments, n.e.s. (excluding knitted or crocheted)	Sunset	Sunrise	FDIIn	Elegance
'6402	Footwear with outer soles and uppers of rubber or plastics (excluding waterproof footwear of ...	Sunset	Sunrise	FDIIn	Elegance
'6403	Footwear with outer soles of rubber, plastics, leather or composition leather and uppers of ...	Sunset	Sunrise	FDIIn	Elegance
'6404	Footwear with outer soles of rubber, plastics, leather or composition leather and uppers of ...	Sunset	Sunrise	FDIIn	Elegance
'6911	Tableware, kitchenware, other household articles and toilet articles, of porcelain or china ...	Sunset	Sunrise	FDIIn	Elegance
'7113	Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal ...	Sunset	Sunrise	FDIIn	Elegance
'7408	Copper wire (excluding surgical sutures, stranded wire, cables, plaited bands and the like ...	Sunset	Sunrise	FDIIn	Elegance
'8510	Electric shavers, hair clippers and hair-removing appliances, with self-contained electric ...	Sunset	Sunrise	FDIIn	Elegance
'8532	Electrical capacitors, fixed, variable or adjustable "pre-set"; parts thereof	Sunset	Sunrise	FDIIn	Elegance
'9201	Pianos, incl. automatic; harpsichords and other keyboard stringed instruments	Sunset	Sunrise	FDIIn	Elegance
'9202	String musical instruments, e.g. guitars, violins, and harps (excluding with keyboard)	Sunset	Sunrise	FDIIn	Elegance
'9403	Furniture and parts thereof, n.e.s. (excluding seats and medical, surgical, dental or veterinary ...	Sunset	Sunrise	FDIIn	Elegance
'9507	Fishing rods, fish-hooks and other line fishing tackle n.e.s; fish landing nets, butterfly ...	Sunset	Sunrise	FDIIn	Elegance
'9609	Pencils, crayons, pencil leads, pastels, drawing charcoals, writing or drawing chalks and tailors' ...	Sunset	Sunrise	FDIIn	Elegance

Source: Own calculation based on Trade Map, 2020

Table 7. Indonesia Potential FDI Outflows to Australia

HS4	Product	Indonesia	Australia	Bilateral
'0104	Live sheep and goats	Sunrise	Sunset	FDIOut
'0202	Meat of bovine animals, frozen	Sunrise	Sunset	FDIOut
'0406	Cheese and curd	Sunrise	Sunset	FDIOut
'0510	Ambergris, castoreum, civet and musk; cantharides; bile, whether or not dried; glands and other ...	Sunrise	Sunset	FDIOut
'1109	Wheat gluten, whether or not dried	Sunrise	Sunset	FDIOut
'1205	Rape or colza seeds, whether or not broken	Sunrise	Sunset	FDIOut
'1214	Swedes, mangolds, fodder roots, hay, alfalfa, clover, sainfoin, forage kale, lupines, vetches ...	Sunrise	Sunset	FDIOut
'1505	Wool grease and fatty substances derived therefrom, incl. lanolin	Sunrise	Sunset	FDIOut
'2301	Flours, meals and pellets, of meat or meat offal, of fish or of crustaceans, molluscs or other ...	Sunrise	Sunset	FDIOut
'2608	Zinc ores and concentrates	Sunrise	Sunset	FDIOut
'3206	Inorganic or mineral colouring matter, n.e.s.; preparations based on inorganic or mineral colouring ...	Sunrise	Sunset	FDIOut
'3504	Peptones and their derivatives; other protein substances and their derivatives, n.e.s.; hide ...	Sunrise	Sunset	FDIOut
'4707	Recovered "waste and scrap" paper or paperboard (excluding paper wool)	Sunrise	Sunset	FDIOut
'4804	Uncoated kraft paper and paperboard, in rolls of a width > 36 cm or in square or rectangular ...	Sunrise	Sunset	FDIOut
'7505	Bars, rods, profiles and wire, of nickel (excluding electrically insulated products)	Sunrise	Sunset	FDIOut
'7602	Waste and scrap, of aluminium (excluding slags, scale and the like from iron and steel production, ...	Sunrise	Sunset	FDIOut
'9019	Mechano-therapy appliances; massage apparatus; psychological aptitude-testing apparatus; ozone ...	Sunrise	Sunset	FDIOut

Source: Own calculation based on Trade Map, 2020

Table 8. Trade Balance Million US$ (DTBALi) with Shocks of MFN Indonesia from Australia (-8.29%)

DTBALi	Oceania	EastAsia	Australia	Indonesia	RCEP	SouthAsia	CPTPP	NAmerica	LatinAmer	EU_28	MENA	SSA	RestofWorld
GrainsCrops	0.03	0.24	-5.05	2.08	-0.16	0.45	0.51	1.15	0.46	0.05	-0.11	0.56	0.09
MeatLstk	-0.01	-0.13	-0.29	7.32	0.11	-0.26	-0.38	-0.26	-0.79	-0.62	-0.2	-0.07	-0.03
Extraction	0	-1.34	11.32	0.27	-0.92	-0.22	-0.42	-0.51	-1.24	-0.14	-3.95	-0.6	-2.46
ProcFood	0.05	1.26	-11.91	0.99	1.98	0.47	0.42	1.21	3.09	1.79	0.38	0.27	0.35
TextWapp	0	0.95	1.19	-3.18	-0.09	-0.11	-0.03	0.23	-0.01	0.7	0.38	0.02	0.02
LightMnfc	0.04	-0.72	2.12	0.58	-0.06	-0.2	-0.77	-1.64	-0.49	1.54	0	0	0.23
HeavyMnfc	-0.13	-0.7	-1.69	1.41	1.25	-0.17	-0.75	-1.99	-1.31	-0.39	3.2	-0.12	1.8
Util_Cons	0.01	0.09	0.33	-0.06	-0.05	-0.01	-0.07	-0.11	-0.04	0.06	0	-0.01	0.04
TransComm	0.01	-3.05	8.25	-0.85	-1.62	-0.5	-1.35	-1.3	-0.72	-3.7	-0.46	-0.14	-0.51
OthServices	0.02	-1.51	8.55	-0.13	-1.22	-0.57	-0.9	-1.71	-0.62	-1.46	-0.27	-0.09	-0.09

Source: Own calculation based on GTAP10A, 2020

Table 9. Supply Price % of change (PS) with Shocks of MFN Indonesia from Australia (-8.29%)

ps	Oceania	EastAsia	Australia	Indonesia	RCEP	SouthAsia	CPTPP	NAmerica	LatinAmer	EU_28	MENA	SSA	RestofWorld
Land	0	0	-0.04	0.03	0	0	0	0	0	0	0	0	0
UnSkLab	0	0	-0.01	0	0	0	0	0	0	0	0	0	0
SkLab	0	0	-0.01	0	0	0	0	0	0	0	0	0	0
Capital	0	0	-0.01	0	0	0	0	0	0	0	0	0	0
NatRes	0	0	0.03	0	0	0	0	0	0	0	0	0	0
GrainsCrops	0	0	-0.01	0.01	0	0	0	0	0	0	0	0	0
MeatLstk	0	0	-0.01	0.01	0	0	0	0	0	0	0	0	0
Extraction	0	0	0	0	0	0	0	0	0	0	0	0	0
ProcFood	0	0	-0.01	0.01	0	0	0	0	0	0	0	0	0
TextWapp	0	0	-0.01	0	0	0	0	0	0	0	0	0	0
LightMnfc	0	0	-0.01	0	0	0	0	0	0	0	0	0	0
HeavyMnfc	0	0	-0.01	0	0	0	0	0	0	0	0	0	0
Util_Cons	0	0	-0.01	0	0	0	0	0	0	0	0	0	0
TransComm	0	0	-0.01	0	0	0	0	0	0	0	0	0	0
OthServices	0	0	-0.01	0	0	0	0	0	0	0	0	0	0
CGDS	0	0	-0.01	0	0	0	0	0	0	0	0	0	0

Source: Own calculation based on GTAP10A, 2020

Table 10. Trade Balance Million US$ (DTBALi) with Shocks of MFN Australia from Indonesia (-3.04%)

DTBALi	Oceania	EastAsia	Australia	Indonesia	RCEP	SouthAsia	CPTPP	NAmerica	LatinAmer	EU_28	MENA	SSA	RestofWorld
GrainsCrops	0	-0.01	-0.01	0.04	0	-0.01	0	0	0	0	0	0	0
MeatLstk	0	0	-0.02	0.01	0	0	0	0	0	0	0	0	0
Extraction	0	0.01	-0.04	0.09	0	0	0	-0.01	-0.01	0	-0.02	-0.01	-0.02
ProcFood	0	-0.02	-0.02	0.13	-0.01	-0.01	-0.01	-0.01	-0.01	-0.03	-0.01	0	-0.01
TextWapp	0	0.31	0.24	-0.69	0.02	0.05	0.01	0.01	0	0.03	0.01	0	0
LightMnfc	-0.01	-0.09	-0.02	0.19	-0.01	-0.01	-0.01	-0.03	0	-0.02	0	0	0
HeavyMnfc	0	-0.21	0	0.22	-0.01	-0.03	-0.01	-0.01	0.01	0.01	0	0	0.02
Util_Cons	0	0	0	0.01	0	0	0	0	0	0	0	0	0
TransComm	0	-0.03	-0.03	0.08	0	-0.01	0	-0.01	0	-0.02	0	0	0
OthServices	0	-0.02	-0.03	0.06	0	-0.01	0	0	0	0	0	0	0

Source: Own calculation based on GTAP10A, 2020

Table 11. Supply Price % of change (PS) with Shocks of MFN Indonesia from Australia (-3.04%)

ps	Oceania	EastAsia	Australia	Indonesia	RCEP	SouthAsia	CPTPP	NAmerica	LatinAmer	EU_28	MENA	SSA	RestofWorld
Land	0	0	0	0	0	0	0	0	0	0	0	0	0
UnSkLab	0	0	0	0	0	0	0	0	0	0	0	0	0
SkLab	0	0	0	0	0	0	0	0	0	0	0	0	0
Capital	0	0	0	0	0	0	0	0	0	0	0	0	0
NatRes	0	0	0	0	0	0	0	0	0	0	0	0	0
GrainsCrops	0	0	0	0	0	0	0	0	0	0	0	0	0
MeatLstk	0	0	0	0	0	0	0	0	0	0	0	0	0
Extraction	0	0	0	0	0	0	0	0	0	0	0	0	0
ProcFood	0	0	0	0	0	0	0	0	0	0	0	0	0
TextWapp	0	0	0	0	0	0	0	0	0	0	0	0	0
LightMnfc	0	0	0	0	0	0	0	0	0	0	0	0	0
HeavyMnfc	0	0	0	0	0	0	0	0	0	0	0	0	0
Util_Cons	0	0	0	0	0	0	0	0	0	0	0	0	0
TransComm	0	0	0	0	0	0	0	0	0	0	0	0	0
OthServices	0	0	0	0	0	0	0	0	0	0	0	0	0
CGDS	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Own calculation based on GTAP10A, 2020