

The Impacts of Indian Ocean Rim Association (IORA) Economic Integration on Indonesian Macro and Sectoral Economy

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ABSTRACT

Economic cooperation among countries aims primarily to eliminate trade barriers, including Indian Ocean Rim Association (IORA) with 21 participating members. This study is designed to examine impacts of Indian Ocean Rim Association (IORA) economic integration would have on Indonesian economy. The analysis employs the Global Trade Analysis and Policy (GTAP) model and simulates four tariff elimination scenarios. Within the analysis it has been noticed that relatively bigger tariff reduction delivers higher increase in Indonesian welfare and GDP growth. However, the overall gain has dampened due the presence of deficit in trade balance, except in simulation where 95% tariff reduction applies only on request-offer sectors. Only three sectors show consistently high competitiveness under IORA framework with increasing output and export numbers, and other sectors demand for imports remains high. All in all, the result confirm that IORA is beneficial for Indonesia in terms of welfare and growth of real GDP. On the other hand, increasing demand for imports exceeds its exports, which will lead to huge deficit in trade balance.

Keywords: IORA, GTAP, Preferential Trade Agreement, Tariff Reduction

I. INTRODUCTION

Export diversification is considered as a reliable effort to improve Indonesia's export performance. Export diversification changes the focus of main export destination market. Beverelli *et al.* (2015) suggests that the benefits of diversifying exports by selling commodities to other destination will minimize the risk of idiosyncratic shocks that occur in export's main destination country towards international trade.

Within market diversification, Indonesia joined the Indian Ocean Rim Association (IORA) which was established on 6-7 March 1997 in Mauritius. In October 2011, IORA participating members signed an

agreement to deepen cooperation in economics under preferential trade agreements (PTA) framework. This economic integration surely will have implications on involved countries economies, including Indonesia.

IORA's market potential reflected in its 30.25% of the world's population. This huge market size has not been maximized by Indonesia as an export destination. Moreover, IORA market has a considerable purchasing power. GDP per capita of nine IORA members are higher than Indonesian GDP per capita, namely Australia (55,400US\$), Iran (6,700US\$), Malaysia (11,000US\$), Mauritius (9,800US\$), Seychelles (13,900US\$), Singapore (52,600 US\$), South Africa (7,500US\$), Thailand (5,900US\$) and

United Arab Emirates (40,900US\$) have higher GDP per capita than Indonesia (*UNCOMTRADE 2018*). This shows good prosperity level of IORA countries because their GDP per capita reflects fairly high purchasing power and their import ability.

The establishment of increasingly liberal trade zones will have an influence on exports and imports of these countries in order to meet the objectives of guaranteed economic growth and benefit for member countries. A country can benefit from trade if the total cost of producing goods is absolutely cheaper than the cost of resources for producing the same goods in other countries (*Prasetyo et al. 2017*). *Bensassi et al. (2013)* examined the impact of PTA and multilateral tariff reduction implemented simultaneously by Middle East and North Africa (MENA) countries, where the results of the study show that the countries involved in PTA benefit from trade creation. In contrast to *Bensassi et al. (2013)*, the research conducted by *Santos-Paulino and Thirlwall (2004)* with the CGE method indicates that liberalization in 22 developing countries located in Latin America, Africa, tends to increase their import growth rather than their exports, causing deficit in their trade and payment balance.

II. METHODS AND MATERIAL

The analytical method used in this study is Revealed Comparative Advantage method to select competitive commodities from each member countries. To see the impact of IORA economic integration on Indonesian economy, the study used Global Trade Analysis Project (GTAP), a general equilibrium trade with multi-regional and multi-commodity modeling tools.

For the purposes of this study, GTAP basic data will be aggregated into 18 regions and all sectors in data base (57 sectors) that are relevant to the research objectives. This is done in accordance with the focus of the study, namely analyzing the sectoral impacts of trade liberalization policies.

TABLE I
REGIONS AGGREGATION

No.	Code	Descriptions
1	aus	Australia
2	bgd	Bangladesh
3	are	United Arab Emirates
4	irn	Islamic Republic of Iran
5	omn	Oman
6	mus	Mauritius
7	mdg	Madagascar
8	ken	Kenya
9	moz	Mozambique
10	tza	Tanzania
11	zaf	South Africa
12	idn	Indonesia
13	mys	Malaysia
14	sgp	Singapore
15	tha	Thailand
16	ind	India
17	lka	Sri Lanka
18	ROW	Rest of World

The simulation of the IORA economic integration framework is analyzed for its impact on macroeconomic performance which includes welfare (as measured by Equation Variation), real GDP, trade balance, exports and imports, government and private consumption levels, and Indonesia's sectoral performance including output and exports sectoral imports. Simulation figures use tariff reduction concessions on ongoing economic cooperation, namely the ASEAN-Korea Free Trade Agreement with a 50% tariff reduction agreement (*Setiawan 2012*) and Regional Comprehensive Economic Partnership (RCEP) where the tariff reduction is 95% (*Ragimun 2018*).

TABLE II
SIMULATION SCHEMES

Simulation	Tariff Reduction	Sectors	Regions
1	50%	<i>Request-offer</i>	Indonesia and other IORA countries, reciprocal
2	95%	<i>Request-offer</i>	
3	50%	All sectors	
4	95%	All sectors	

III. RESULTS AND DISCUSSION

The stages of the implementation of request-offer commodity conducted began with the recapitulation of Revealed Comparative Advantage (RCA) average value data from each country, then the RCA value was sorted and the rate was based on the highest value. This resulting in two sectors of 16 IORA countries included in the classification simulation scheme 1 (50% tariff reduction in the offer request sector) and simulation 2 (95% tariff reduction in the offer request sector). Based on the value of RCA and tariffs, the proposed product request from Indonesia to IORA member countries is dominated by products from the sectors of vegetable oils and fats, paper products and publishing, and textiles. Overall, several product requests offer Indonesia is still experiencing very high tariff barriers.

TABLE III
INDONESIAN REQUESTED PRODUCTS

Importing Country	GTAP Sectors Classification	RCA	Tariff
AUS	Ferrous metals	5,78	3,33
	Wood products	4,98	3,90
BGD	Vegetable oils, fats	7,56	5,00
	Paper products, publishing	13,79	4,99
IND	Vegetable oils, fats	14,17	78,2
	Crops n.e.c. (ocr)	6,04	65,1

TABLE III
INDONESIAN REQUESTED PRODUCTS

Importing Country	GTAP Sectors Classification	RCA	Tariff
IRN	Paper products, publishing	6,68	9,92
	Machinery and equipment	228,0	7,60
KEN	Paper products, publishing	4,37	9,82
	Textiles	5,94	7,31
MDG	Chemical, rubber, plastic	27,72	3,68
	Food products n.e.c	5,67	10,4
MYS	Vegetable oils	11,34	80,9
	Crops nec	5,74	44,1
MUS	Paper products, publishing	12,69	2,52
	Chemical, rubber, plastics	6,90	4,69
MOZ	Chemical, rubber, plastics	23,51	10,8
	Meat products n.e.c	10,99	7,50
OMN	Vegetable oils	43,11	5,00
	Textiles	11,31	5,00
ZAF	Leather products	3,75	27,7
	Crops n.e.c	8,23	24,3
LKA	Vegetables, fruits, nuts	13,40	18,3
	Vegetable oils	11,51	48,3
TZA	Wearing apparel	5,10	25,0
	Textiles	7,35	20,7
THA	Motor vehicles and parts	3,25	36,3
	Vegetable oils	10,30	19,6
ARE	Textiles	31,39	5,00
	Vegetable oils	40,78	5,00

Different from the tariffs faced by product requests from Indonesia to IORA countries, imported products that enter Indonesia are facing relatively lower tariff rate, ranging from 0.46% to 15%.

TABLE IV
IORA REQUESTED PRODUCTS

Exporting Country	GTAP Sectors Classification	RCA	Tariff
AUS	<i>Animal products</i>	31,81	3,45
	<i>Meat: Cattle, sheep</i>	22,77	5,00
BGD	<i>Textiles</i>	1 071,1	6,34
	<i>Wearing apparel</i>	116,39	14,76
IND	<i>Crops n.e.c</i>	7,69	3,71
	<i>Vegetables, fruits, nuts</i>	7,09	5,77
IRN	<i>Chemical, rubber, plastics</i>	2,03	5,08
	<i>Machinery and equipment</i>	3,02	5,00
KEN	<i>Textiles</i>	0,55	9,20
	<i>Crops n.e.c.</i>	440,59	5,00
MDG	<i>Crops n.e.c.</i>	306,93	5,00
	<i>Wearing apparel</i>	21,42	15,0
MYS	<i>Food products</i>	4,86	7,73
MUS	<i>Wearing apparel</i>	32,66	14,77
MOZ	<i>Vegetable oils</i>	30,18	5,00
	<i>Textiles (tex)</i>	40,89	9,22
OMN	<i>Fishing (fsh)</i>	5,23	5,11
	<i>Chemical, rubber, plastics</i>	0,14	5,38

TABLE IV
IORA REQUESTED PRODUCTS

Exporting Country	GTAP Sectors Classification	RCA	Tariff
ZAF	<i>Ferrous metals</i>	2,04	0,46
	<i>Vegetables, fruits, nuts</i>	7,66	5,46
LKA	<i>Wearing apparel</i>	76,78	14,85
	<i>Machinery and equipment</i>	164,42	5,15
TZA	<i>Metals nec</i>	23,60	0,71
	<i>Crops n.e.c</i>	56,22	5,00
ARE	<i>Machinery and equipment</i>	3,82	5,41
	<i>Chemical, rubber, plastics</i>	0,89	6,33

A. The Impact of IORA PTA on Indonesian Macroeconomic Indicators

The impact of IORA PTA framework on Indonesian macroeconomic performance which includes welfare (as measured by Equation Variation), real GDP, trade balance, exports and imports, government and private consumption levels is analyzed using GTAP model. The simulation of the IORA PTA framework shows there is a positive impact from the reduction in tariffs on welfare and real GDP. However, the IORA PTA in the simulation scheme decreases rates 1, 3 and 4 causing huge deficit in trade balance. The effect of tariff elimination on several Indonesian macroeconomic indicators as a whole can be seen in Table 5.

TABLE V
IMPACT OF IORA ECONOMIC INTEGRATION ON INDONESIAN MACROECONOMIC INDICATORS

Macroeconomic Indicators	SIM 1	SIM 2	SIM 3	SIM 4
Welfare (EV Million USD)	1.180,6	2.896,1	1.962,5	4.565,6
Trade Balance (Million USD)	-75,582	312,257	-733,41	-1.590,8
GDP Riil (%)	0,013	0,022	0,035	0,062

*SIM 1 = Tariff reduction 50% on request offer sectors

**SIM 2 = Tariff reduction 95% on request offer sectors

***SIM 3 = Tariff reduction 50% on all sectors

****SIM 4 = Tariff reduction 95% on all sectors

The tariff reduction impact on welfare shows a positive number in all simulations. The highest increase in welfare numbers was obtained in the simulation of a tariff reduction of 95% in all sectors (SIM 4), while the lowest welfare improvement was found in simulation of 50% tariff reduction in request-offer products (SIM 1). Positive welfare

responses in all simulations show that the benefits of trade liberalization in the form of reduced tariffs for Indonesia at the macroeconomic level can be transmitted to the welfare of the community. In addition, improving welfare in all simulations of tariff reduction indicates a trade creation effect, in which Indonesians can obtain goods at lower prices.

In addition, all simulations of tariff reduction lead to an increase in Indonesia's real GDP and the largest increase in real GDP in simulations of 95% tariff reduction in all sectors (0.062%). However, as a developing country that still relies on exports as an instrument to pursue economic growth (Firdaus 2011), Indonesia has a relatively small increase in real GDP performance because its growth rate is still below 1%.

B. The Impact of IORA PTA on Indonesian Sectoral Economy

The impact of the elimination of tariffs on Indonesian output shows that most sectors experienced a decline in output levels with largest decrease in wheat sector by 20.285% in simulation 4. Only few sectors gain from tariff reduction, namely oil seeds, vegetable oils and fats, motor vehicles and parts, constructions, and sea transports. IORA PTA has a negative impact which tends to be large in several sectors, indicating that Indonesia does not have strong competitiveness in those sector.

TABLE VI
TARIFF REDUCTION IMPACT ON INDONESIAN OUTPUT

Sectors	Output			
	SIM 1	SIM 2	SIM 3	SIM 4
Oil seeds	5,8	12,39	5,4	11,32
Vegetable oils and fats	12,6	28,02	12,3	27,2
Motor vehicles and parts	2,9	9,3	3,01	9,3
Construction	0,2	0,3	0,5	1,2

Sea transport	0,09	0,3	0,2	0,5
Plant-based fibers	-2,45	-5,8	-2,69	-6,2
Metals nec	-2,2	-5,2	-3,3	-7,7
Wearing apparel	-2,3	-5,6	-2,9	-5,8
Leather products	-1,9	-4,1	-3,18	-6,4
Wheat	-4,9	-12,1	-9,2	-20,3

In simulations 1 and 2, almost all production sectors experienced a decline in export figures except for vegetable oils and fats, motor vehicles and parts, crops, and dwellings. The four sectors also experienced an increase in the number of exports in simulations 3 and 4, along with 48 other sectors. Vegetable oils and fats consistently gain highest increase in exports, showing that this sector has high competitiveness among other sectors in IORA market. The highest benefit derived from simulation of 95% tariff reduction in request-offer sectors compared to other tariff reduction schemes.

TABLE VII
TARIFF REDUCTION IMPACT ON INDONESIAN EXPORTS

Sectors	Exports			
	SIM 1	SIM 2	SIM 3	SIM 4
<i>Vegetable oils and fats</i>	18,95	42,26	18,58	41,24
<i>Motor vehicles and parts</i>	18,26	55,43	20,51	60,07
<i>Crops nec</i>	2,95	12,71	4,03	17,12
<i>Dwellings</i>	0,15	0,42	0,20	0,48
<i>Transport equipment nec</i>	-4,18	-9,72	5,80	14,23
<i>Metal products</i>	-3,17	-7,71	8,96	18,91
<i>Processed rice</i>	-8,81	19,97	-8,70	19,29
<i>Raw milk</i>	12,30	27,22	13,41	29,69
<i>Wheat</i>	13,44	30,53	13,81	32,17
<i>Wool, silk-worm cocoons</i>	16,54	35,57	-9,34	24,43
<i>Oil seeds</i>	18,66	36,91	16,67	33,77

In terms of imports, the majority of sectors experienced an increase in all simulations (Table 8).

This indicates that the elimination of tariffs within the PTA framework causing people's preference for more use of imported goods increases. Higher imports can also occur because the sector experiencing an increase in output which uses inputs originating from other countries (imports).

TABLE VIII
TARIFF REDUCTION IMPACT ON INDONESIAN IMPORTS

Sektor	Imports			
	SIM 1	SIM 2	SIM 3	SIM 4
<i>Oil seeds</i>	20,68	50,61	22,07	54,28
<i>Vegetable oil, fats</i>	12,65	29,92	13,73	32,64
<i>Paddy rice</i>	9,91	25,69	11,65	30,39
<i>Meat</i>	8,75	19,80	9,66	22,43
<i>Wool</i>	6,66	16,81	7,88	20,52
<i>Gas</i>	-0,60	-1,25	-0,50	-1,10
<i>Plant-based fibers</i>	-1,76	-4,32	-2,09	-4,12

IV. CONCLUSION

Indonesian potential sectors that has high competitiveness in Indian Ocean Rim Association market are vegetable oil and fats, motor vehicles and parts, and crops. These sectors have high RCA values and still facing high tariffs before tariff reduction. Moreover, GTAP analysis shows their contribution to exports under IORA economic integration has increased in all simulations.

The impact of IORA's economic integration in the form of tariff reduction has a positive effect on the welfare, mounting up to US \$ 4 565.59 million and the real GDP growth rate is 0.062%. On the other side, IORA economic integration leads Indonesian imports from other IORA countries increased sharply compared to exports, which causing deficit in trade balance. In sectoral economy, below the scheme of tariff reduction, the majority of output declined and exports of most sectors are deteriorated. This shows

that Indonesia still faces challenges to improve competitiveness in the IORA market.

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