ACHIEVING ECONOMIC BENEFITS THROUGH AGRICULTURAL TRADE REFORMS IN INDONESIA[1]

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ABSTRAK

Ekonomi Indonesia telah mencapai suatu perubahan bentuk yang luar biasa, yakni menjadi ekonomi modern yang diperkirakan mencapai pertumbuhan sebesar 6 persen. Untuk tetap mempertahankan pertumbuhan sebesar itu, diperlukan perbaikan ekonomi secara berkesinambungan seperti perdagangan bebas yang sesuai dengan kebijakan pemerintah. Tujuan dari tulisan ini adalah untuk mengkaji pengaruh ekonomi dari model program liberalisasi perdagangan bilateral seperti antara Australia dan Indonesia. Kerangka pikir tulisan ini didasarkan pada model ekuliberium dari GTAP (Global Trade Analysis Project). Hasil analisis menunjukkan bahwa pertumbuhan perdagangan antara Australia dan Indonesia akan memperoleh keuntungan dari pendapatan yang lebih tinggi dan adanya efisiensi dari alokasi sumberdaya. Dalam studi ini diketahui bahwa dari pemotongan tarif perdagangan pertanian diperoleh efisiensi sebesar US$ 1,67 – 3,35 juta dan peningkatan GDP sebesar US$ 3,55 – 7,08 juta. Hal ini menunjukkan bahwa perdagangan bebas memberikan kontribusi dalam proses pertumbuhan ekonomi Indonesia.

Kata kunci : *perdagangan bilateral, perdagangan pertanian*

ABSTRACT

The Indonesian economy has achieved a remarkable transformation from an agricultural economy to a modern economy that is estimated to grow at a high rate of 6 per cent. Sustaining it requires the continual adoption of economic reforms. Part of it requires the adoption of freer trade practices in sectors of the economy where resources are retained due to large government assistance. This paper aims to examine the economy-wide effects of a bilateral agricultural trade liberalization program between Australia and Indonesia. The analytical framework adopted in this paper is a global general equilibrium model known as GTAP (Global Trade Analysis Project). Increasing the agricultural trade between Australia and Indonesia will lead to benefits arising from higher incomes and resource allocation efficiency. In this study, the removal of tariffs on agricultural imports in Indonesia resulted in efficiency gains of US$ 1.67 – 3.35 million and GDP increase by US$ 3.55 – 7.08 million. This shows that freer trade practices contribute to the economic growth process in Indonesia.

Key words : *agricultural trade, bilateral trade*

[1] This project was done in Australian Leadership Awards Fellowship 2007 Program, April-June 2007

INTRODUCTION

The Indonesian economy has achieved a remarkable transformation from an agricultural economy to a modern economy where manufacturing and services account for 85 per cent of the gross domestic product (GDP) through government programs that led to a better macroeconomic management and liberalization of the economy.

Currently, the economy is estimated to grow at a high rate of 6 per cent. Sustaining it requires the continual adoption of economic reforms. Part of it requires the adoption of freer trade practices in sectors of the economy where resources are retained due to large government assistance. Some of these sectors are agricultural in nature. For example, rice and sugar received substantial government support through technological assistance and import regulations. For some agricultural commodities, government policies emphasise self-sufficiency due to its importance in the diets of poor households. A case in point is rice.

The Indonesian self-sufficiency policy requires substantial resources. The total amount spent by the government on fertiliser, pesticide and irrigation subsidies alone amounted to US$725 billion in 1989. Subsidies led to excessive use of inputs that sometimes caused environmental damages. For example, the outbreak of a pesticide resistant brown planthopper species that affected rice production in 1986-87 was due to the excessive use of pesticides. Expansion of rice production in upland areas in Java caused annual soil erosion damages amounting to US$139.8 million (Barbier, 1989).

Allowing more agricultural imports from countries like Australia may lower the costs of the Indonesian agricultural self-sufficiency policy since resources can then be re-allocated to sectors where they are most profitable while consumers can purchase more diverse and cheaper goods. This paper aims to examine the economywide effects of a bilateral agricultural trade liberalization program between Australia and Indonesia.

The paper is organised in the following manner. The second section discusses the trade patterns between Indonesia and Australia. The third section presents the analytical framework used in estimating the economic effects of freeing agricultural trade in Indonesia and Australia. The fourth section provides the key modelling results of the study. Conclusions and other future issues are in the last section.

THE BILATERAL TRADE BETWEEN INDONESIA AND AUSTRALIA

In 2000, the bilateral trade transactions between Indonesia and Australia, Indonesia imported close to US$1.694 billion from Australia. By 2005, this has

grown to US$ 2.567 billion. Close to 40.77 per cent of the imports of Indonesia is accounted by agricultural products. Australia's imports from Indonesia amounted to US$1.519 billion in 2000. It grew to US$2.228 billion in 2005. A large share of it are accounted by petroleum and forestry products that acccounted for 49.48 per cent in 2005.

The continued growth experienced by both economies (see figure 1) means that the rising incomes of Indonesian and Australian consumers may increase their demand for more diverse and cheaper imported products. Also, Indonesia is experiencing resources moving from the agricultural sector to the manufacturing and service sectors. This results in the declining share of agriculture in the economy. The GDP share of agriculture fell from 49 per cent in 1970 to 13.08 per cent in 2005 while the shares of the non-agricultural sectors rose from 51 per cent to 86.92 per cent in 2005.

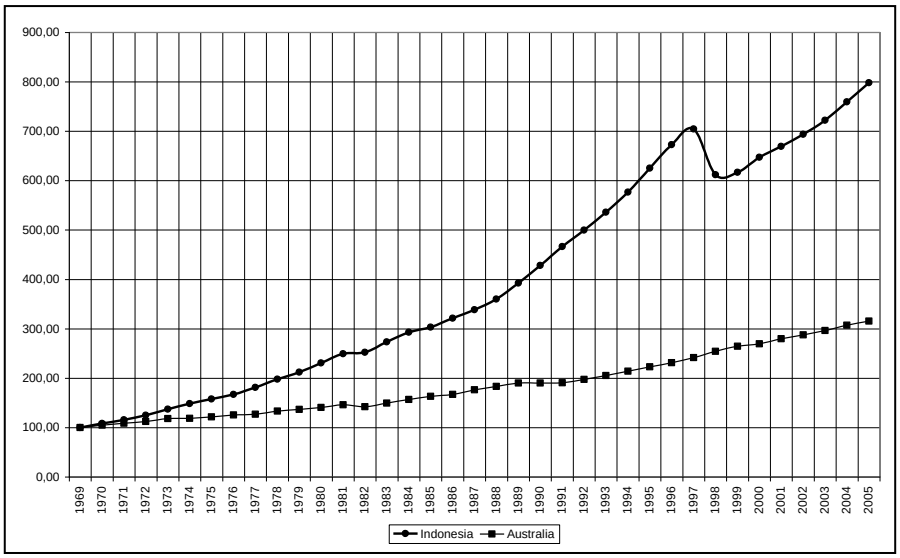


Figure 1. Relatively GDP of Indonesia dan Australia, 1969-2005 (1969=100)

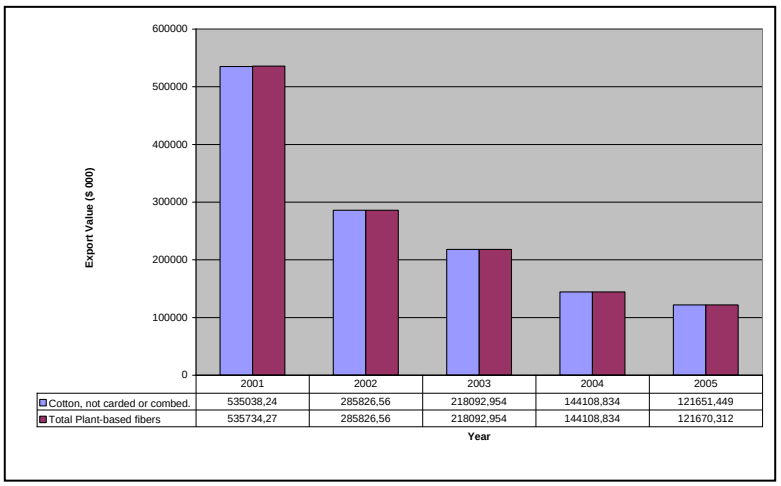
With the re-allocation of resources from agriculture to the other sectors, the costs of producing some agricultural goods may increase as fewer factors of production becomes available to it and as innovative technological options such as the availability of modern rice varieties become scarce. Consequently, the competitiveness of Indonesia in producing agricultural products may be declining while it may be rising in the case of labour-intensive manufactures like textiles and garments.

The trade implication of the changing comparative advantage in Indonesia is that Australia may be a key source of their agricultural imports. Current trade

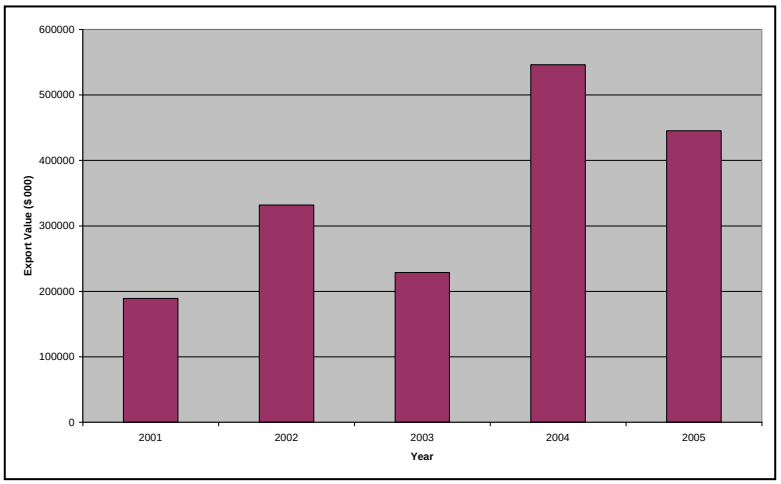
figures indicate that Australia is the leading exporter of agricultural products to Indonesia such as wheat, cotton, live animals and beef and dairy products. As shown in figures 2, wheat, dairy, fruit and vegetables, beef and live cattle imports from Australia are rising. The continued growth in incomes in Indonesia may partly be causing this pattern since demand for these products are highly sensitive to changes in it (Fabiosa, 2006; Andayani and Tilley, 1997; Fabiosa, 2005; and Hutasuhut *et al.*, 2001).

However, to realise the benefits from trade, Indonesia and Australia must adopt freer trade practices. These will create opportunities for the availability of cheaper and differentiated goods relative to what domestic producers are selling currently.

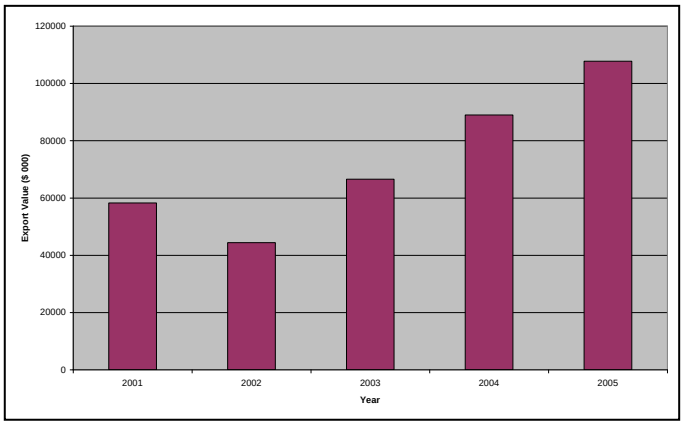
(a) Cotton and Total Plant-based fibers



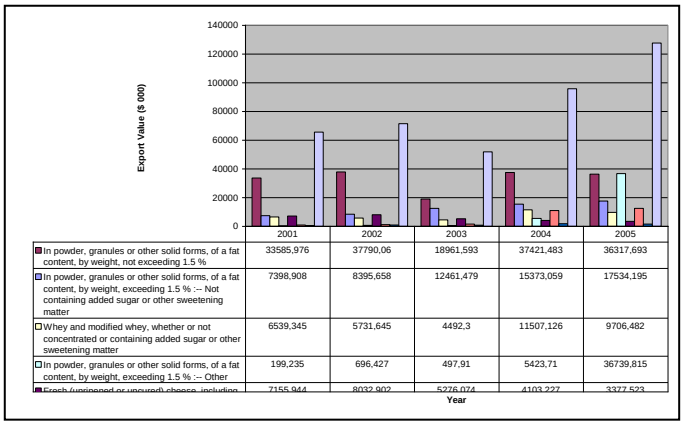
(b) Wheat and meslin (for human consumption)



(c) Live Bovine Animals

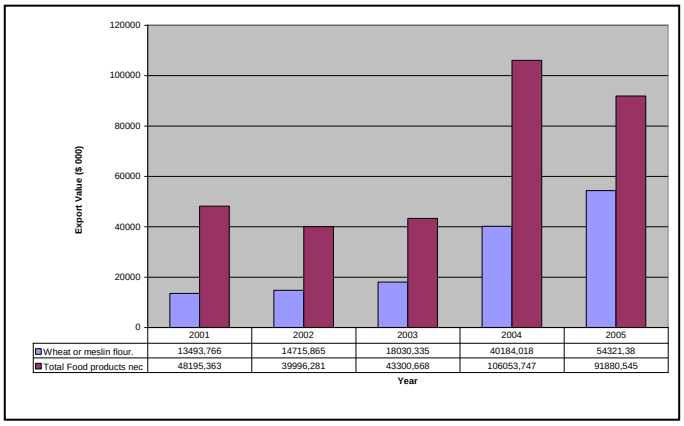


(d) Dairy products



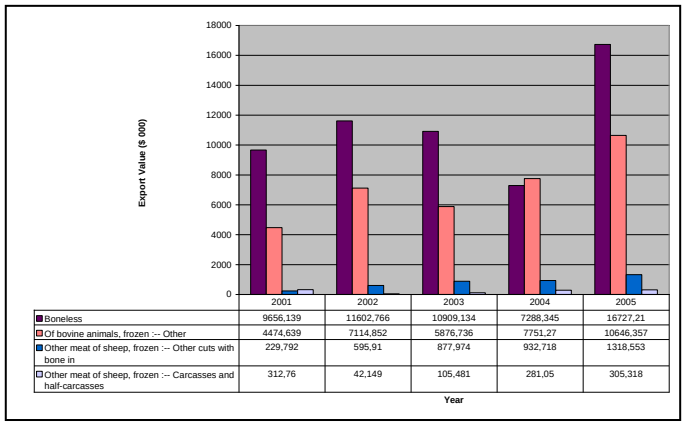
	2001	2002	2003	2004	2005
In powder, granules or other solid forms, of a fat content, by weight, not exceeding 1.5 %	33585,976	37790,06	18961,593	37421,483	36317,693
In powder, granules or other solid forms, of a fat content, by weight, exceeding 1.5 % :-- Not containing added sugar or other sweetening matter	7398,908	8395,658	12461,479	15373,059	17534,195
Whey and modified whey, whether or not concentrated or containing added sugar or other sweetening matter	6539,345	5731,645	4492,3	11507,126	9706,482
In powder, granules or other solid forms, of a fat content, by weight, exceeding 1.5 % :-- Other	199,235	696,427	497,91	5423,71	36739,815
Fresh (unripened or uncured) cheese, including	7155,944	8032,902	5276,074	4103,227	3377,523

(e) Food Product nec

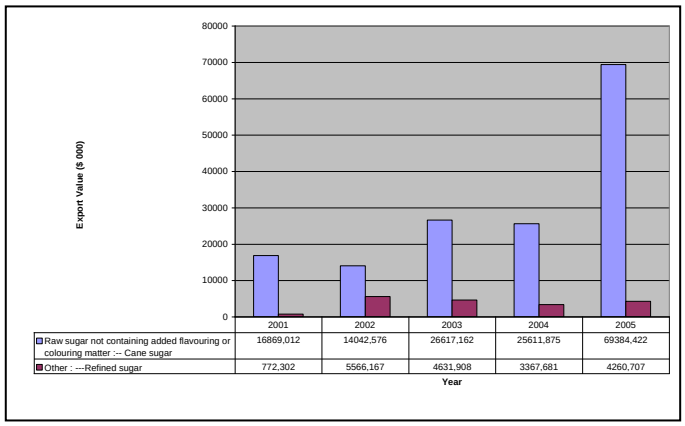


	2001	2002	2003	2004	2005
Wheat or meslin flour.	13493,766	14715,865	18030,335	40184,018	54321,38
Total Food products nec	48195,363	39996,281	43300,668	106053,747	91880,545

(f) Meat



(g) Sugar



(h) Fruit and Vegetables

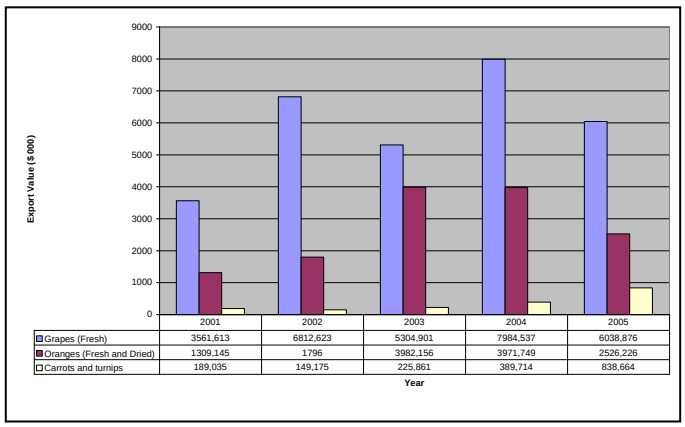


Figure 2. The Main Agriculture Export of Australia to Indonesia, 2001-2005

TRADE BARRIERS IN INDONESIA AND AUSTRALIA

In the case of Australia, trade impediments are low. The average tariff of Australia on agricultural and manufactured imports are 1.64 and 3.8 respectively. Indonesia has pursued substantial trade reforms in three decades: (1) from an inward looking import substitution strategy during the oil boom in the early 1970s, (2) to limited liberalization and deregulation in the early 1980s, and (3) extensive deregulation and liberalization after the end of oil boom in the mid 1980s.

Indonesia has pursued substantial trade reforms since it joined the WTO and since the implementation of the structural reforms in 1997-98. For example, Bulog ceased to be the sole importer of agricultural products like rice and wheat. Applied tariffs on agricultural imports are low (5 per cent). The applied tariff rates used in this study are given in table 1.

As shown in table 1, Australia is providing full market access to foreign producers. This means that trade impediments in Australia are low. Indonesia's tariff rate tend to be high for milled rice (31.3 per cent), sugar (42.2 per cent) and Beverages and tobacco products (42.2 per cent) while the rest of agriculture products ranges from 1.7 to 5 per cent. In contrast, Australia's applied tariff rates in agriculture products are low with the exception of beverages and tobacco products (22.7 per cent).

Table 1. Sectoral and Regional Aggregations

Short title	Item included	Import Tariff Rate	
		Indonesia	Australia
Agriculture			
Paddy rice	Paddy rice	14.2	0.0
Wheat	Wheat	1.7	0.0
Cereal grains nec	Cereal grains nec	4.8	0.0
Vegetables, fruit, nuts	Vegetables, fruit, nuts	5.0	0.0
Oil seeds	Oil seeds	4.0	5.0
Sugar cane, sugar beet	Sugar cane, sugar beet	0.0	0.0
Plant-based fibers	Plant-based fibers	0.0	0.0
Crops nec	Crops nec	4.9	0.0
Cattle, sheep, goats, horses	Cattle, sheep, goats, horses	1.7	0.0
Animal products nec	Animal products nec	2.7	0.0
Raw milk	Raw milk	0.0	0.0
Wool, silk-worm cocoons	Wool, silk-worm cocoons	5.0	0.0
Meat: cattle, sheep, goats, horse	Meat: cattle, sheep, goats, horse	5.0	0.0
Meat products nec	Meat products nec	0.7	0.6
Vegetable oils and fats	Vegetable oils and fats	3.6	0.4
Dairy products	Dairy products	5.0	2.6
Processed rice	Processed rice	13.3	0.0
Sugar	Sugar	20.2	0.0
Food products nec	Food products nec	3.9	1.5
Beverages and tobacco products	Beverages and tobacco products	42.2	22.7

Table 1. continued

Short title	Item included	Import Tariff Rate	
		Indonesia	Australia
Non_Agriculture			
Forestry	Forestry	0.2	0.8
Fishing	Fishing	3.7	0.2
Oil	Oil	0.0	5.6
Textiles	Textiles	6.3	8.6
Wearing apparel	Wearing apparel	13.7	23.4
Leather products	Leather products	5.0	11.5
Wood products	Wood products	3.6	4.7
Paper products, publishing	Paper products, publishing	5.9	3.7
Petroleum, coal products	Petroleum, coal products	3.5	0.0
Financial services nec	Financial services nec	0.0	0.0
Insurance	Insurance	0.0	0.0
Business services nec	Business services nec	0.0	0.0
Recreation and other services	Recreation and other services	0.0	0.0
PubAdmin/Defence/Health/Educat	PubAdmin/Defence/Health/Educat	0.0	0.0
Dwellings	Dwellings	0.0	0.0
Others	Coal, Gas, Minerals nec, Chemical, rubber, plastic prods, Mineral products nec, Ferrous metals, Metals nec, Metal products, Motor vehicles and parts, Transport equipment nec, Electronic equipment, Machinery and equipment nec, Manufactures nec, Electricity, Gas manufacture, distribution, Water, Construction, Trade, Transport nec, Sea transport, Air transport, Communication	5.2	2.4

Source: GTAP Database (2003)

ESTIMATING THE TRADE GAINS OF A UNILATERAL AGRICULTURAL TRADE LIBERALIZATION IN INDONESIA

For illustrative purposes, the following sections discuss the estimation of trade gains arising from a partial and full agricultural tariff liberalization in Indonesia and Australia.

Modelling the trade liberalization : The GTAP model

The analytical framework adopted in this paper is a global general equilibrium model known as GTAP (Global Trade Analysis Project). Kowalcyzk (2000) noted that a complete assessment of trade issues would require estimates of the trade and price changes in a fully specified general equilibrium model of the world economy. GTAP meets this requirement since it accounts fully for the impacts of policies on bilateral trade flows of all commodities between all regions. In this paper, GTAP (version 6) contains equations and data that represent the

production, consumption, trade and investment decisions of representative producers and consumers in regions across commodity and service groupings.

Details of the GTAP model are provided in Hertel (1997). Its key features that are relevant to the study are the following. First, the model represents perfect competitive conditions. This means that the zero profit condition prevails, meaning all excess profits are eliminated by the unrestricted entry and exit of firms. Second, all production functions in the model are homogeneous and exhibit constant returns to scale. Production in each sector of the economy is represented by a nested CES (Constant Elasticity of Substitution) function. Each firm in the model uses a CES composite of domestic and imported intermediate inputs in fixed proportions with a CES composite of primary factors of production such as skilled and unskilled labour, land, capital and natural resources. Finally, demand relationships in the model use the constant differences in elasticities (CDE) which are calibrated to represent the differing income and price responses across commodities and regions. Goods demanded in the model are a CES composite of domestic and imported items.

The policy experiment was undertaken under the assumption of a long run model closure[2]. This means that the capital stock is endogenous and consequently, freer trade begets more capital investments. There is perfect capital mobility in the model and capital will be re-allocated across the various sectors until the change in the rate of return on capital stock become equal across all regions (Nakajima, 2002). There will be two policy simulations, a partial 50 per cent and a 100 per cent reduction in the applied tariffs on agricultural imports in Australia and Indonesia. To model the impact of trade liberalization, the world economy is aggregated into 3 regions (Australia, Indonesia, Rest of the world-ROW) and 36 commodities. The commodities are seperated into agriculture and non-agriculture groupings (see table 2).

Table 2. Sectoral and Regional Aggregations

Sectoral Aggregation

Short title	Item included
Agriculture	
Paddy rice	Paddy rice
Wheat	Wheat
Cereal grains nec	Cereal grains nec
Vegetables, fruit, nuts	Vegetables, fruit, nuts
Oil seeds	Oil seeds
Sugar cane, sugar beet	Sugar cane, sugar beet
Plant-based fibers	Plant-based fibers

[2] A long run model closures in GTAP : EXPAND is exogenous and qo(capital) is endogenous. EXPAND: change in investment levels relative to endowment stock. qo(capital) : beginning of period capital stock

Table 2. continued

Sectoral Aggregation

Short title	Item included
Agriculture	
Crops nec	Crops nec
Cattle, sheep, goats, horses	Cattle, sheep, goats, horses
Animal products nec	Animal products nec
Raw milk	Raw milk
Wool, silk-worm cocoons	Wool, silk-worm cocoons
Meat: cattle, sheep, goats, horse	Meat: cattle, sheep, goats, horse
Meat products nec	Meat products nec
Vegetable oils and fats	Vegetable oils and fats
Dairy products	Dairy products
Processed rice	Processed rice
Sugar	Sugar
Food products nec	Food products nec
Beverages and tobacco products	Beverages and tobacco products
Non_Agriculture	
Forestry	Forestry
Fishing	Fishing
Oil	Oil
Textiles	Textiles
Wearing apparel	Wearing apparel
Leather products	Leather products
Wood products	Wood products
Paper products, publishing	Paper products, publishing
Petroleum, coal products	Petroleum, coal products
Financial services nec	Financial services nec
Insurance	Insurance
Business services nec	Business services nec
Recreation and other services	Recreation and other services
PubAdmin/Defence/Health/Educat	PubAdmin/Defence/Health/Educat
Dwellings	Dwellings
Others	Coal, Gas, Minerals nec, Chemical, rubber, plastic prods, Mineral products nec, Ferrous metals, Metals nec, Metal products, Motor vehicles and parts, Transport equipment nec, Electronic equipment, Machinery and equipment nec, Manufactures nec, Electricity, Gas manufacture, distribution, Water, Construction, Trade, Transport nec, Sea transport, Air transport, Communication

Regional Aggregation

Region	Countries included
Australia	Australia
Indonesia	Indonesia
ROW	ROW

RESULTS

Macroeconomic effects

Overall, the GDPs of Australia and Indonesia increase through the bilateral cuts on agricultural imports. When tariffs are eliminated completely, Indonesia's GDP grew by 0.005 per cent or US$ 7.07 million while that of Australia by 0.003 percent or US$10.8 million. While the gains are appear to be miniscule, this reflects largely the fact that the liberalizing sectors are not the dominant enterprises in the economy and that tariffs are generally low on average in both countries.

Welfare effects

The welfare criterion used in GTAP is the equivalent variation (EV). It approximates the change in income at initial prices needed by the regional representative household to reach the level of welfare corresponding to the simulated tariff cuts. To determine the sources of welfare gains, the EV decomposition developed by Huff and Hertel (1997) was adopted in this paper. The largest gains for Indonesia arise from the increase in resource allocation efficiency. The gains from it range from US$1.63 to US$3.35 million for the 50 percent and 100 percent tariff cuts respectively. The highest tariff laden industry in Indonesia, which is the beverage and tobacco products and sugar industries were the main sources of the resource allocation efficiency gains (see table 3).

Also, as tariffs are reduced on agricultural imports, other sectors such as the labour intensive textile manufactures of the Indonesian economy expand as they receive resource transfers from them. The welfare gains of Australia emanate from favorable terms of trade changes. Higher prices for its exports occur as the Indonesian demand for agricultural products increases due to higher incomes.

Table 3. Decomposition of the Regional Allocative Efficiency Effects by Commodity (US$ million)

Commodity	Indonesia		Australia		ROW	
	50 %	100 %	50 %	100 %	50 %	100 %
Land	0.0000	0.0000	-0.0997	-0.1995	0.1331	0.2630
Un-Skill Labor	0.0000	0.0000	0.0000	0.0000	0.0462	0.0972
Skill Labor	0.0000	0.0000	0.0000	0.0000	0.0042	0.0050
Capital	0.1742	0.3483	0.4951	0.9903	-1.6697	-3.2346
Natural Resource	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table 3. continued

Commodity	Indonesia		Australia		ROW	
	50 %	100 %	50 %	100 %	50 %	100 %
Agriculture						
Paddy rice	0.0016	0.0031	0.0000	0.0000	-0.1054	-0.2100
Wheat	0.0033	0.0066	-0.0319	-0.0633	-0.7981	-1.5878
Cereal grains nec	0.0020	0.0040	0.0004	0.0007	-0.1342	-0.2675
Vegetables, fruit, nuts	0.0307	0.0614	-0.0015	-0.0031	-0.0466	-0.0925
Oil seeds	0.0016	0.0032	0.0007	0.0014	0.0206	0.0411
Sugar cane, sugar beet	-0.0009	-0.0017	-0.0010	-0.0020	0.0044	0.0089
Plant-based fibers	0.0002	0.0004	0.0012	0.0024	-0.0248	-0.0494
Crops nec	0.0112	0.0223	-0.0024	-0.0049	0.0147	0.0295
Cattle, sheep, goats, horses	0.0052	0.0103	-0.0005	-0.0009	-0.0085	-0.0170
Animal products nec	0.0027	0.0054	0.0000	-0.0001	-0.0122	-0.0242
Raw milk	-0.0005	-0.0010	-0.0003	-0.0006	0.0134	0.0269
Wool, silk-worm cocoons	0.0006	0.0013	0.0157	0.0313	0.0060	0.0119
Meat: cattle, sheep, goats, horse	0.0740	0.1479	0.0000	0.0001	-0.1203	-0.2392
Meat products nec	0.0078	0.0157	0.0007	0.0014	0.0439	0.0880
Vegetable oils and fats	0.0031	0.0062	0.0003	0.0006	0.0230	0.0465
Dairy products	0.0661	0.1322	0.0012	0.0023	0.3276	0.6555
Processed rice	-0.0086	-0.0172	0.0000	-0.0001	-0.0693	-0.1379
Sugar	0.4294	0.8591	0.0004	0.0008	-0.1321	-0.2632
Food products nec	0.0491	0.0979	0.0477	0.0952	-0.0144	-0.0281
Beverages and tobacco products	0.5089	1.0177	0.1387	0.2774	-0.1830	-0.3620
Non_Agriculture	0.3113	0.6231	0.7170	1.4339	-1.3230	-2.5355
Forestry	0.0009	0.0018	-0.0005	-0.0010	-0.0014	-0.0028
Textiles	0.0136	0.0274	0.0248	0.0495	-0.0158	-0.0314
Total	1,6732	3,3464	1,2819	2,5633	-4,0044	-7,7756

Production

As expected protected sectors where Indonesia has no comparative advantage manifested output declines when tariffs are reduced or eliminated. The sugar, vegetable, livestock and the beverages and tobacco industries incur output declines (see table 4). Industries where Indonesia has a comparative advantage such as the textile industries expanded.

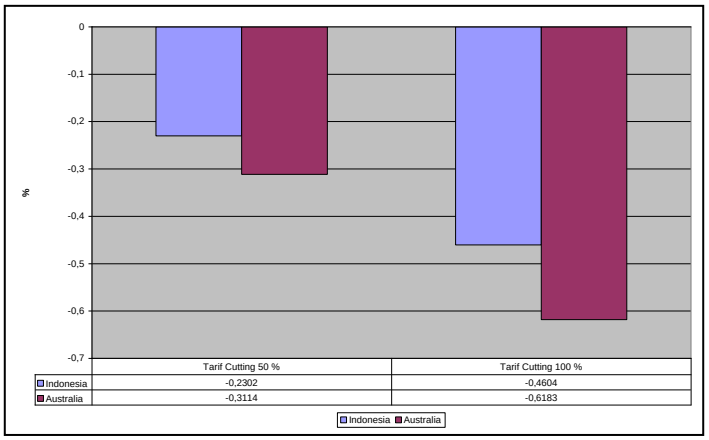
Table 4. Percent Change in Output by Commodity (%)

Commodity	Indonesia		Australia		ROW	
	50 %	100 %	50 %	100 %	50 %	100 %
Agriculture	-0.7332	-1.4652	0.9718	1.9443	0.0002	0.0009
Paddy rice	0.0039	0.0079	-0.0062	-0.0122	0.0001	0.0002
Wheat	0.0283	0.0567	0.131	0.2600	-0.0022	-0.0043
Cereal grains nec	0.0117	0.0234	-0.0091	-0.0180	0.0001	0.0002
Vegetables, fruit, nuts	**-0.0077**	**-0.0154**	0.0202	0.0404	-0.0001	-0.0002
Oil seeds	0.0137	0.0274	-0.0602	-0.1200	0.0001	0.0003
Sugar cane, sugar beet	**-0.1796**	**-0.3594**	0.1377	0.2754	-0.002	-0.004
Plant-based fibers	0.0288	0.0576	-0.0529	-0.1056	0.0019	0.0037
Crops nec	0.0226	0.0452	0.0052	0.0104	-0.0005	-0.001
Cattle, sheep, goats, horses	**-0.1888**	**-0.3759**	0.0225	0.0450	0.0002	0.0005
Animal products nec	0.0168	0.0337	-0.0136	-0.0270	-0.0001	-0.0002
Raw milk	**-0.0427**	**-0.0854**	0.1346	0.2693	-0.0012	-0.0024
Wool, silk-worm cocoons	0.0077	0.0153	-0.0785	-0.1566	0.0114	0.0227
Meat: cattle, sheep, goats, horse	**-0.1036**	**-0.2074**	0.0225	0.0452	0.0001	0.0002
Meat products nec	0.0249	0.0498	-0.0063	-0.0126	-0.0002	-0.0003
Vegetable oils and fats	0.0054	0.0109	-0.0008	-0.0015	-0.0003	-0.0006
Dairy products	**-0.1981**	**-0.3963**	0.1618	0.3238	-0.0026	-0.0051
Processed rice	0.0040	0.0080	0.0184	0.0368	-0.0001	-0.0001
Sugar	**-0.1854**	**-0.3710**	0.4869	0.9745	-0.0036	-0.0072
Food products nec	0.0192	0.0383	0.0282	0.0562	-0.0005	-0.001
Beverages and tobacco products	**-0.0143**	**-0.0286**	0.0304	0.0608	-0.0003	-0.0005
Non_Agriculture	0.1509	0.3019	-0.0544	-0.1088	-0.0031	-0.0059
Forestry	0.0018	0.0036	0.0019	0.0037	-0.0001	-0.0001
Textiles	0.0024	0.0049	-0.0137	-0.0274	0.0000	0.0000

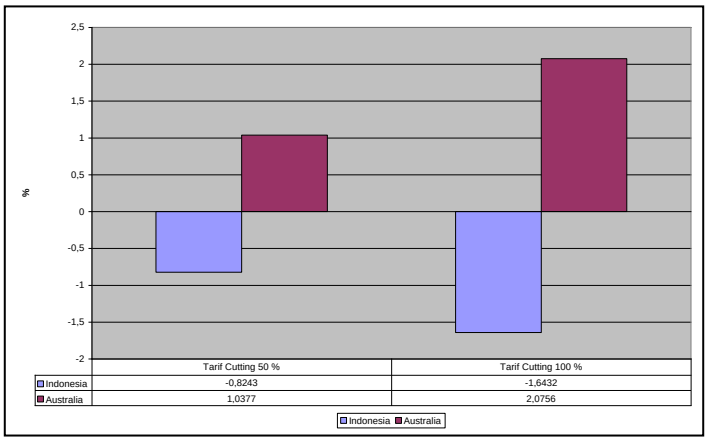
Demand for Endowment

With trade liberalization, Indonesia showed different patterns of demand for factor endowments except for land. Agriculture is a land intensive enterprise in Australia. Hence, a rising demand for Australian agricultural commodities will lead to an increase in its land use while in the case of Indonesia, declines in its agricultrual outputs led to less demand for land. Furthermore, since most low-skilled is employed in the agricultural sector of Indonesia, lower economic activity arising from the tariff cuts in it would lower the labour demand for these labourers. Trade liberalization has affected demand of natural resources, as seen in Figure 4 (e), the demand of natural resources of Indonesia is expected to decline in all scenarios, but the demand of natural resources of Australia is different.

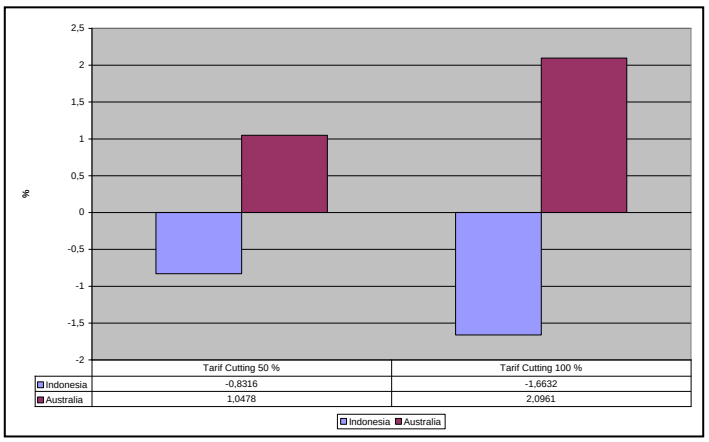
(a) Land



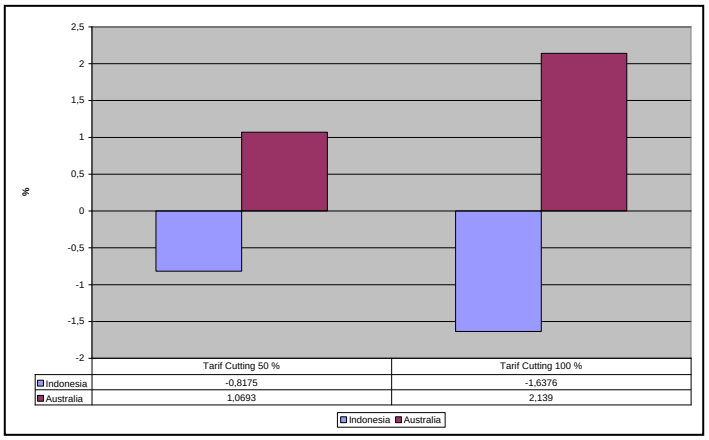
(b) Un-skilled Labor



(c) Skilled Labor



(d) Capital



(e) Natural Resources

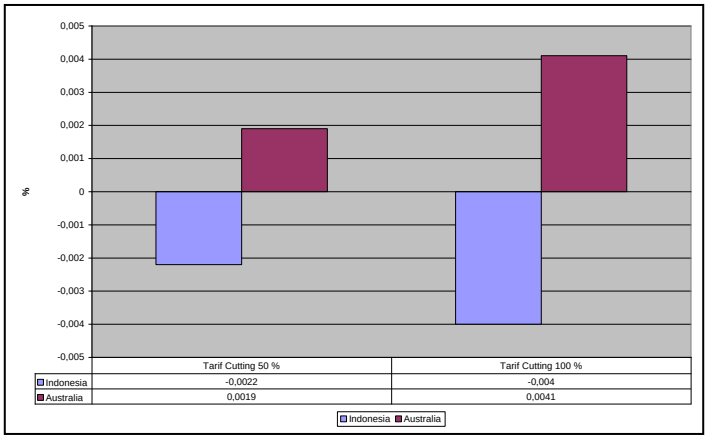


Figure 4. Impact of Free Trade Between Indonesia and Australia on Demand for Endowment

CONCLUDING REMARKS

The economy of Indonesia is evolving from an agricultural to a manufacturing and service based one. In the process, incomes grow and resources transfers from the agricultural to other sectors occur. In this setting, the Indonesia is faced with the rising demand for agricultural goods and a declining domestic supply of agricultural products. Hence, importation of particular agricultural commodities where Indonesia have no comparative advantage may be inevitable. Currently, Australia is already a major exporter of wheat, beef and live cattle, dairy products, sugar and cotton to Indonesia.

Increasing the agricultural trade between Australia and Indonesia will lead to benefits arising from higher incomes and resource allocation efficiency. In this study, removal of tariffs on agricultural imports in Indonesia resulted in efficiency gains of US$ 1.67 – 3.35 million and GDP increase of US$ 3.55 – 7.08 million. This shows that freer trade practices contribute to the economic growth process, particularly in Indonesia, as viewed in terms of the analysis conducted in this paper.

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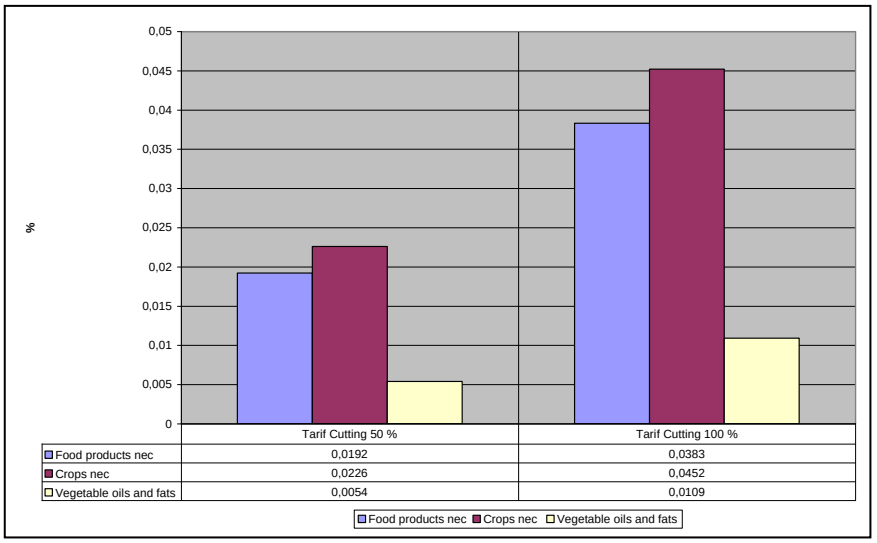
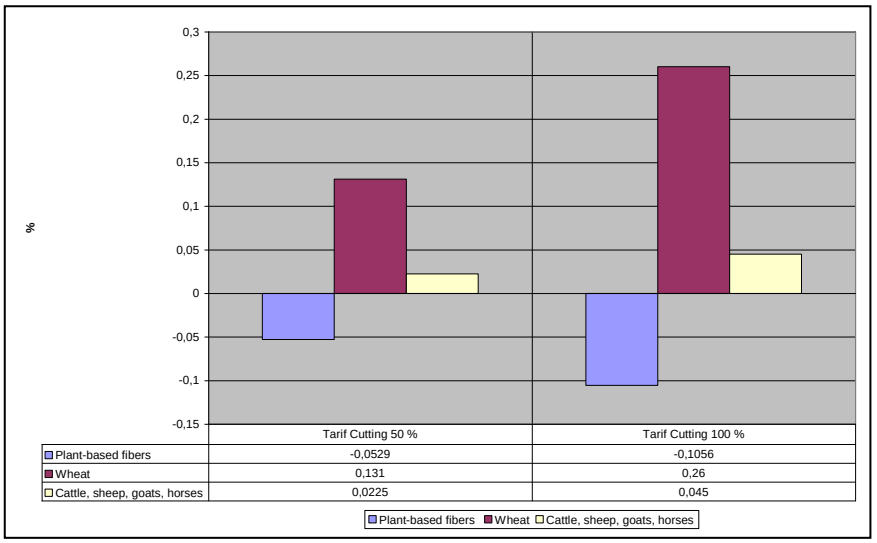
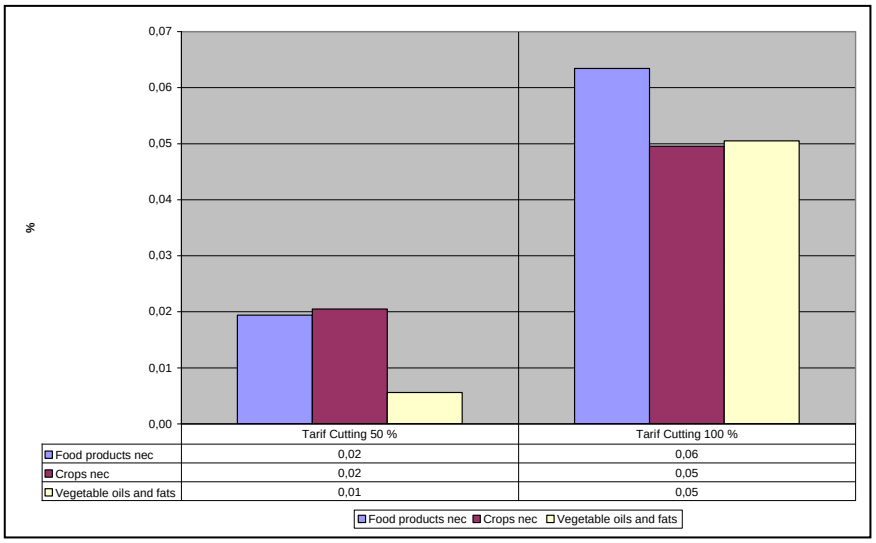
Annex 1. Impact of Free Trade Between Indonesia and Australia on Output of the main of Indonesia's commodities



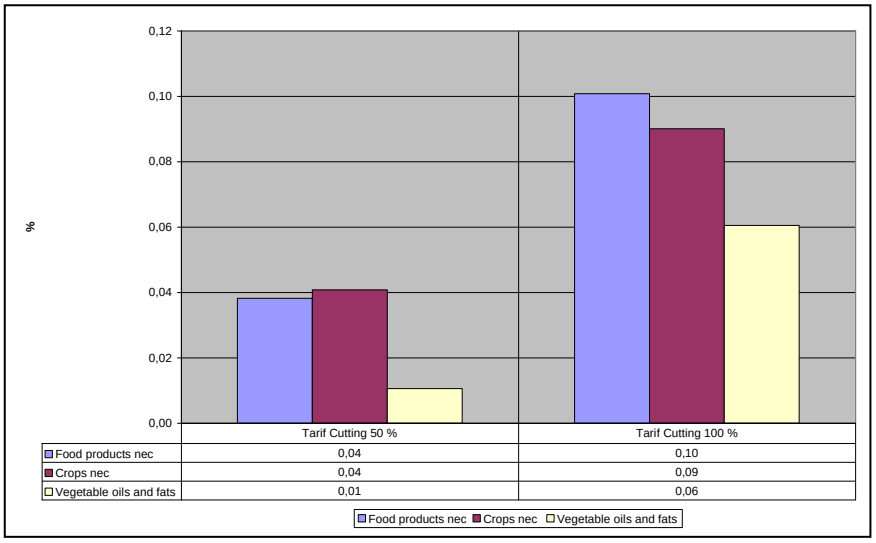
Annex 2. Impact of Free Trade Between Indonesia and Australia on Output of the main of Australia's commodities



Annex 3. Impact of Free Trade Between Indonesia and Australia on Demand of Land of Indonesia



Annex 4. Impact of Free Trade Between Indonesia and Australia on Demand of Labor of Indonesia



Annex 5. Impact of Free Trade Between Indonesia and Australia on Demand of Capital of Indonesia