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Can Japan Afford to Exclude Agricultural Trade from an FTA with Australia: Some Preliminary Findings*

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Abstract

The Australia-Japan Free Trade Agreement (AUJA-FTA) is already in the process of negotiation by the two governments. The success of this FTA will depend on the manner in which it deals with the problem of agricultural trade between the two countries. This paper analyses the economic effects of the proposed FTA between Australia and Japan on both economies and on their trading partners. We use the Global Trade Analysis Project (GTAP) model and its version 6 database to simulate the effects of AUJA-FTA. The paper offers some preliminary evidence concerning the welfare impact of the FTA with special reference to the sensitivity of the decision to include agricultural trade into the proposed FTA. The responses of various production sectors to the FTA show the structural changes that may take place in the two economies. The results show that the inclusion of agricultural trade into the FTA is essential for Japan to maximize its gains. The benefits from the FTA will outweigh the costs.

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1. Introduction

On 9 May 2002, Prime Minister Junichiro Koizumi of Japan formally announced during his official state visit to Canberra that Japan sought a Free Trade Agreement (FTA) with Australia and was willing to negotiate towards that end. The Australian Prime Minister John Howard responded positively to this proposal. This initiated a complex negotiation process over the period September 2002 to June 2003 that culminated in the signing of an Australia-Japan Trade and Economic Framework Agreement on 17 July 2003 in Tokyo. The Economic Framework Agreement formally obliged both countries to “work the liberalisation of trade and investment” on a “balanced and comprehensive basis” through an ongoing Joint Consultative Committee (JCC) composed of representatives of both countries (Australian Department of Foreign Affairs and Trade, 2003, p.1). The JCC, as part of its commitments, completed its comprehensive study in April 2005. Following the report, Prime Minister Howard and Prime Minister Koizumi further agreed to carry out a joint study covering various policy options to enhance economic relations between Japan and Australia. This included a feasibility study of an FTA between the two countries.

The joint government study report was published in early December 2006. It concluded that a comprehensive WTO-consistent FTA between Australia and Japan would produce substantial benefits to both countries. The Australian Prime Minister Howard and the present Japanese Prime Minister Abe welcomed the findings in the report towards finalising an FTA. Consequently both Prime Ministers agreed on 12 December 2006 to commence negotiations on an FTA in early 2007. The first round of negotiations was to be held in Canberra from 23-24 April 2007 (DFAT, 2007).

It would thus appear that a protracted period of negotiations between the two countries will now begin in order to eventually draft a mutually satisfactory bilateral FTA. An FTA between Australia and Japan would represent part of the broader “hub-and-spokes” Growing East Asia Community strategy developed by Japan (Scollay, 2001). In this sense it would augment the existing FTAs with Singapore, Malaysia, Philippines, Mexico, and Chile. Under this strategy, Japan would cement its role as the dominant

economy at the centre of Asia and strengthen its ties with surrounding nations in the Asia-Pacific region.

A critical feature of the Japanese FTAs so far is that they exclude important agricultural commodities. Japan's FTA strategy appears to be dominated by its long-run objective of securing the steady supply of energy and natural resources that are needed by the country to maintain a strong economic growth while remaining internationally competitive. As Japan is the largest market for Australia for its agriculture, fisheries and forestry exports, the question of agricultural trade between Australia and Japan is bound to raise many difficulties, especially the problem of Australian access to the Japanese domestic market. It is the intension of Australia that the negotiation should take place to include all the goods without exemptions. The strong farming lobby that has substantial influence on the agricultural trade policy in Japan needs to be convinced that the gains from AUJA-FTA are far above the cost to reach a reasonable solution to this issue. Given that Australia is Japan's fourth largest supplier of agricultural and food imports supplying 10 per cent of Japan's requirements, the inclusion of important agricultural goods into the FTA with Australia surely cannot be ruled out.

This paper offers some preliminary findings relating to macroeconomic and sectoral impact of the proposed FTA on both the economies of Japan and Australia. We use a computable general equilibrium (CGE) model developed at the Global Trade Analysis Project (GTAP) to examine the effects of trade liberalisation envisaged by the FTA. The analysis focuses on two different scenarios highlighting the importance of agricultural trade and potential benefits and costs of its inclusion to the FTA.

The paper is organised as follows: Section 2 provides a brief synopsis of the development of FTA activities in Australia and Japan. Section 3 outlines the Australia-Japan trade and investment relationships. Section 4 briefly explains two trade liberalisation scenarios used in the GTAP simulations: an FTA including agriculture and an FTA excluding agriculture. Section 5 analyses the results of the simulation exercises. The paper ends with some brief concluding comments on potential policy implications of an AUJA-FTA in section 6.

2. Brief Review of FTA Developments in Australia and Japan

Australia's involvement in bilateral trade treaties goes back to 1983 when Closer Economic Relations Agreement (CERA) between Australia and New Zealand was signed. The CERA is regarded as one of the most successful FTAs and it has contributed to a phenomenal growth in bilateral trade between the two countries (see Lloyd and Maclaren, 2004). Australia has become New Zealand's number one trading partner while New Zealand is Australia's 7th important trading partner. After a period of deep involvement in multilateral arrangements, now Australia has an 'open mind' about FTAs. In recognition of the fact that the trade isolation could hinder the long-run growth prospects of the country, Australia actively began seeking opportunities for regional trade agreements (RTAs). The first successful negotiation occurred between Australia and Singapore and an FTA between the two countries was signed in February 2003 (Siriwardana and Dollery, 2003). The agreement came into effect in the second half of 2003. Australia also signed a free trade agreement with Thailand which came into effect in early 2005.

The Australia-US FTA (AUSFTA) is the fourth bilateral FTA that Australia has negotiated and it came into effect from 1st January 2005 (Siriwardana, 2007). The US is Australia's third largest single trading partner. Under this agreement, Australia and the US agreed to trade bilaterally about 86 per cent of the commodities import tax-free. By 2022, almost every bilaterally traded commodity will achieve tax-free status with the exception of sugar and dairy products (CIE, 2004).

The most recent developments in relation to RTAs in the North East Asian region indicate that Australia is unlikely to be left alone. At a meeting held in Laos on 30 November 2004, the leaders from ASEAN, Australia and New Zealand have mutually agreed to establish an ASEAN Free Trade Area (AFTA) including Australia and New Zealand. This opens up new exciting prospects for full free trade in the region and it could well be regarded as an extension of CERA beyond Australia and New Zealand. Australia has also made a significant progress on a bilateral free trade agreement with China. There have been five rounds of negotiations to exchange information that are important to both Australia and China (DFAT, 2006a, DFAT, 2006b). It is anticipated that the Australia-China FTA will be concluded within a short period.

Japan on the other hand had pursued its trade liberalisation under the General Agreement on Tariffs and Trade (GATT) and the World Trade Organisation (WTO) until the late 1990s. Hence Japan has been slow to enter the FTA arena. It is now widely recognised that these multilateral trade negotiations are making a slow progress and hence FTAs are emerging as an option for achieving trade liberalisation. Japanese government now wants FTAs to play a significant role in promoting its economic growth by creating business opportunities for Japanese firms in FTA partner countries. The domestic agricultural sector reforms are also considered to be necessary in achieving success through bilateral trade treaties. FTAs can promote economic stability in East Asia and they would have a positive impact on Japan (Urata, 2005).

Japan signed its first FTA with Singapore in 2002. Under this agreement Singapore has removed tariffs on all imports from Japan while Japan has removed tariffs on 94 per cent of imports from Singapore. Mexico is the second country that Japan has successfully negotiated an FTA in 2004. Japan's strong resistance to liberalise its farm products such as pork, beef, chicken products, oranges and orange juice was a major obstacle for the FTA negotiation with Mexico. Eventually Japan opened up the market for these products by increasing import quotas but not by the usual removal of tariffs. Mexico on the other hand agreed to open up its market to all imports from Japan. Japan has finally agreed to include 84 per cent of imports from Mexico into the FTA. Japan also subsequently negotiated FTAs with Malaysia, Philippines and these agreements have also excluded agricultural goods. The most recent FTA has been the one with Chile where Japan has agreed to include 94 per cent of its trade with Chile into the agreement.

3. Trade Pattern between Australia and Japan

FIG. 1 depicts Australia's trade with Japan from 1986 to 2005. Over this 20-year period, trade between Australia and Japan has shown substantial growth. Furthermore, Australian exports exceed imports throughout the period showing a significant trade surplus with Japan.

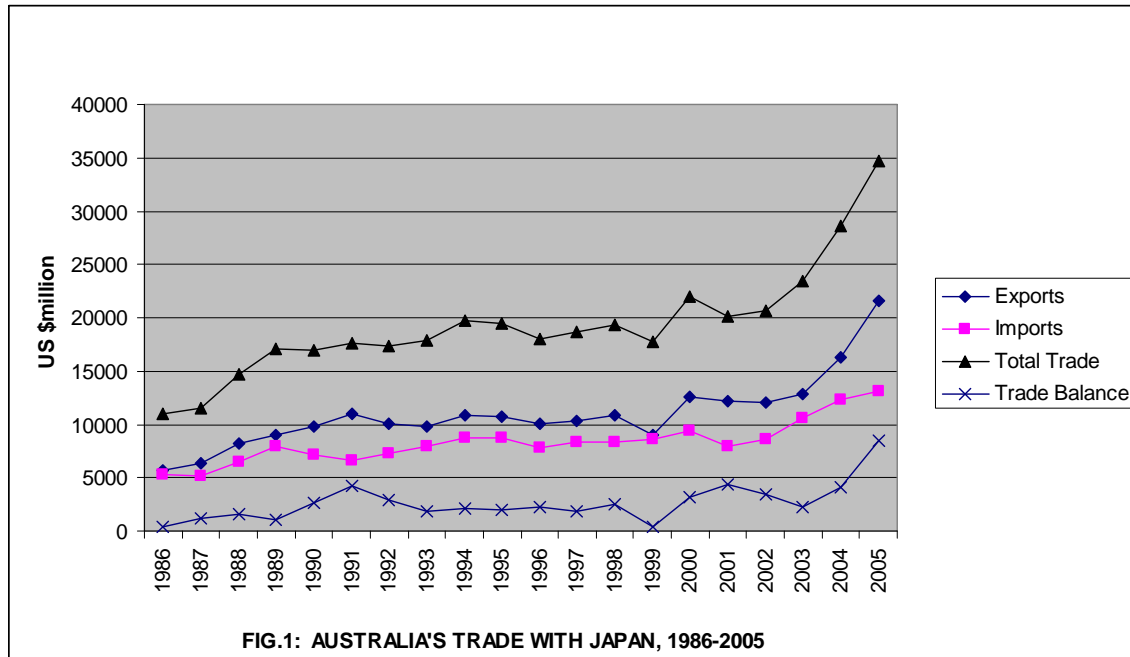


FIG.1: AUSTRALIA'S TRADE WITH JAPAN, 1986-2005

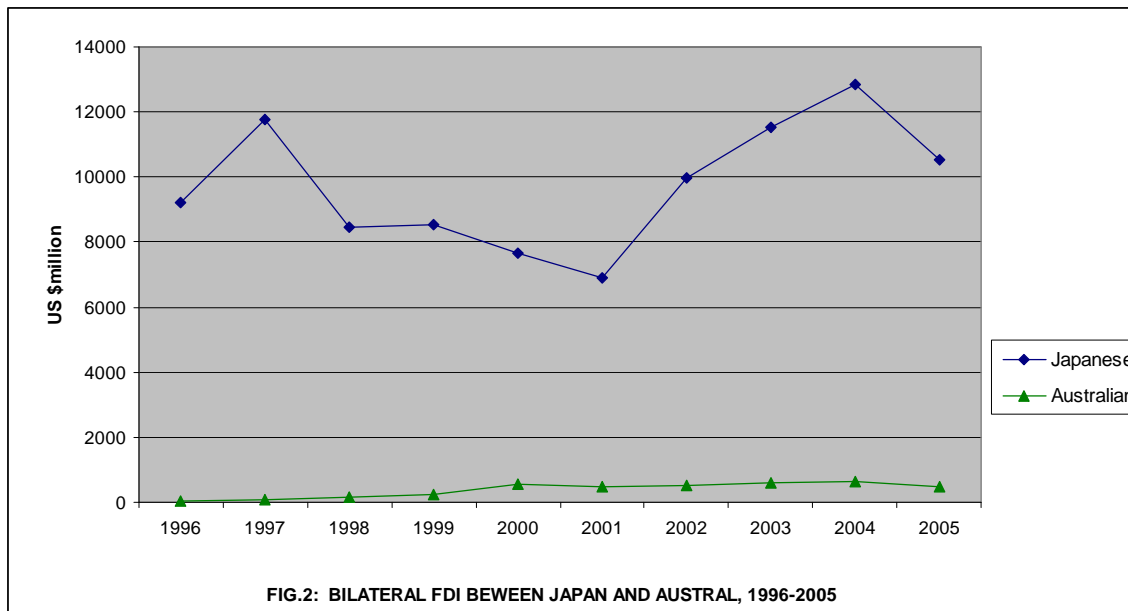
Source: Based on data from IMF, Direction of Trade Statistics Yearbook (various issues)

Table 1 displays Australia's bilateral trade with Japan in 1995 and 2005 by commodity group. Over the ten-year period, the composition of exports to Japan has undergone some changes whereas the composition of imports remained relatively stable. In 2005, 75 per cent of Australian exports to Japan were primary goods (Food & live animals, Crude martial, inedible, except fuel, and Mineral fuels, lubricants & related materials). With regard to imports from Japan, 'Machinery & transport equipment' dominated the total accounting for nearly 80 per cent. This trade pattern between the two countries provides evidence to support the view that Australia-Japan bilateral trade takes place according to the comparative advantage and it can further be strengthened by removing tariffs under the proposed FTA.

TABLE 1: AUSTRALIA'S BILATERAL TRADE (MERCHANDISE) WITH JAPAN (US\$ MILLION)

Commodity group	1995				2005			
	Exports to Japan	%	Imports from Japan	%	Exports to Japan	%	Imports from Japan	%
Food & live animals	2252.88	21.0	26.82	0.3	3520.19	16.3	34.39	0.3
Beverage & tobacco	20.95	0.2	21.09	0.2	39.34	0.2	2.47	0.0
Crude materials, inedible, except fuel	2349.05	21.9	36.84	0.4	4454.78	20.6	31.34	0.2
Mineral fuels, lubricants & related materials	3362.01	31.3	9.03	0.1	8228.63	38.1	230.17	1.8
Animal & vegetable oils, fats & waxes	9.88	0.1	3.29	0.0	26.29	0.1	0.83	0.0
Chemical & related products	125.41	1.2	340.70	3.9	196.23	0.9	431.98	3.3
Manufactured goods	1053.65	9.8	1004.36	11.5	1411.64	6.5	1080.61	8.3
Machinery & transport equipment	358.54	3.3	6691.28	76.7	157.75	0.7	10437.73	79.9
Miscellaneous manufactures	103.62	1.0	580.82	6.7	85.82	0.4	575.52	4.4
Commodities not included elsewhere	1095.92	10.2	8.70	0.1	3467.34	16.1	233.56	1.8
Total	10731.91	100.0	8722.93	100.0	21588.00	100.0	13058.61	100.0

Source: Australian Bureau of Statistics, International Merchandise Trade (Cat. No. 5422), various issues.



Source: Japan Ministry of Finance web site, <http://www.jetro.go.jp/en/stats/statistics/>

FIG. 2 shows the bilateral FDI (stock) between Australia and Japan from 1996 to 2005. It is clear that Japanese investment in Australia is considerably greater than the Australian investment in Japan. It is also widely recognized that the proposed FTA should be used as a vehicle for lifting FDI flows to higher levels and the liberalisation of services are hence another priority area that has attracted attention of trade policy negotiators on both sides.

4. GTAP Model and the Trade Policy Simulations

The specific model used to quantify the impact of the Australia-Japan FTA is the GTAP model. It is a multi-regional CGE model of the Johansen type that has been used extensively in the literature. It has been well documented in Hertel (1997). The modelling of each region in GTAP is based on the ORANI model (Dixon et al., 1982). In this paper, we used the GTAP model with version six of the database that disaggregates the world into 87 regions and 57 sectors.

We aggregate the GTAP database into 10 regions and 20 sectors to suit our needs (see Appendix Table A1). Since our focus is on the bilateral FTA between Australia and

Japan, the regional aggregation is designed to capture the importance of other trading partners to both countries. The sectoral aggregation framework is adopted to distinguish commodities (or sectors) that are important for the present analysis, especially separating agricultural goods from others. The elasticity parameters (i.e., Armington elasticities of import-domestic substitution, primary factor substitution, and export demand elasticities) are crucial to GTAP simulations. The present study uses the parameters that are standard to the GTAP database.

TABLE 2: AVERAGE TARIFFS ON DIFFERENT COMMODITIES

	Australian Tariffs on Imports from Japan	Japanese Tariffs on Imports from Australia
Grains	0.0	162.8
Other crops	0.0	1.4
Animal products	0.0	9.6
Forestry and fishing	0.0	2.5
Mining and energy	3.2	0.0
Meat products	0.2	46.5
Other food products	0.7	55.7
Dairy	0.6	45.7
Sugar	7.1	316
Beverages and tobacco	6.6	44.1
Textiles	9.2	0.9
Wearing apparels	13.6	10.5
Wood and paper products, publishing	4.2	0.2
Chemical, rubber and plastic	5.4	1.4
Ferrous metals	4.7	0.4
Metal products	8.1	1.6
Motor vehicles and parts	16.3	0.0
Machinery and equipment	3.1	0.1
Miscellaneous manufactures	2.2	0.4
Services	0.0	0.0

Source: GTAP data base Version 6, 2005

Table 2 shows bilateral import tariffs estimated from the GTAP database version 6. In Australia, the highest import tariffs on imports from Japan are recorded for ‘Motor vehicles and parts’ (16.3 per cent), and ‘Wearing apparels’ (13.6 per cent). In Japan, the tariff level is relatively high compared with Australia. The highest import tariffs on

Japanese imports from Australia are noted in ‘Grains’ (162.8 percent) followed by many other agricultural goods.

The elimination of tariff barriers on bilateral basis under the FTA needs to be implemented via simulations of GTAP in order to quantify the effects of the agreement. A number of changes are expected to occur in bilateral tariff with the formation of an FTA between Australia and Japan. If both economies are fully open to each other’s imports, both Japan and Australia will abolish tariff barriers on imports bilaterally (shown in Table 2). It is assumed that tariffs imposed on imports from other trading partners (non-members of the FTA) will remain unchanged. The prices of both Japanese goods sold in Australia and the Australian goods sold in Japan are expected to fall by the extent of import duties shown in Table 2. In order to quantify the effects of the proposed FTA, we carry out two GTAP simulations. These two simulation scenarios may reflect the options that have been discussed by the two parties at different stages of negotiations.

Scenario 1: All bilateral tariffs between Australian and Japan are removed while the existing tariff barriers against non-FTA countries are maintained. This is called ‘the full liberalisation’ scenario under the FTA. If this is adopted, all tariff rates that appear in Table 2 will be reduced to zero.

Scenario 2: Even though Australian is keen to liberalise everything, Japan’s position is not yet certain when it comes to agricultural goods. Hence the second scenario is designed to implement the AUJA-FTA by excluding agricultural commodities. This implies that goods 1-4 in Table 2 are subject to existing import duties while the other 16 goods are imported free of duty on bilateral basis.

We adopt the standard long-run macroeconomic closure for the simulations reported in the paper. This is sometimes known as the “steady state” closure. Here the rate of return on capital is fixed exogenously and the level of capital stock is allowed to adjust in response to the policy shock. Investment occurs in each region during the period of tariff reduction with the effect that sum of the regional investment matches with the changes in the global savings. The current account is fixed by setting the trade balance fixed exogenously. The period is long enough for the capital stocks of different industries in a given region to respond to the shock. The reallocation of capital stock among sectors

equilibrates rates of return across sectors restoring the rates of returns to their initial levels. Thus in the process of adjustment, industries which are favoured by the trade liberalisation experience their capital stock growing while those industries which are adversely affected experience their capital stock shrinking.

In the simulation of GTAP, we assume that in the long-run the aggregate employment at national level is affected by the demographic factors that are not sensitive to the implementation of the FTA. Thus it is reasonable to assume that the elimination of merchandise tariffs under the FTA has no long-run effect on aggregate employment levels both in Australia and in Japan. In the model simulation, the fixed employment level is maintained in the long-run by the endogenous adjustments in the real wage. This implies that the benefits from the FTA are seen in terms of the increase in the real wage rather than the increase in aggregate employment.

5. Simulation Results

To assess the effectiveness of the FTA with and without agricultural goods, we report results of full liberalisation and partial liberalisation (i.e., excluding agricultural goods) separately. It is important to determine whether the maintenance of high tariff barriers by Japan against agricultural goods imported from Australia make economic sense in the negotiation of the proposed FTA. From the perspective of Japanese trade negotiators and farming lobby groups, these findings will have significant policy implications. Reported in the next sections is the impact of the bilateral trade liberalisation on important macroeconomic variables, trade, industry outputs and economic welfare.

Full Trade Liberalisation

The first panel of Table 3 shows the macroeconomic effects of full trade liberalisation under the proposed FTA between Australia and Japan. The projections highlight important findings that are crucial to both parties. Japan will experience an increase in real GDP by 0.33 per cent whereas Australia is projected to have 0.22 per cent

increase. Except USA and Hong Kong, all other non-member regions are showing a decline in real GDP as a consequence of the FTA. Among these losers, ASEAN(6) is reported to have the most significant negative effect in terms of real GDP. This is a reflection of their strong trade relations with Australia and Japan and the trade diversion due to the FTA has adverse impact on them.

The proposed FTA seems to have substantial effect on the trade performance of both countries. As far as exports are concerned, Japan has a better outcome (1.91 per cent increase) than that of Australia (0.69 per cent increase). However, a significant gain in the terms of trade for Australia allows it to import more than what Japan may be able to achieve in imports under the FTA. Unlike for Australia, the terms of trade for Japan deteriorate by about half a per cent, which could explain its less strong capacity to import.

The projection of the equivalent variation (EV) as reported in Table 3 is a measure of the welfare impact of the FTA. The EV is an absolute monetary measure of changes in welfare in terms of income that eventuates from the fall in import prices when tariffs are eliminated. The EV estimates follow the same pattern of changes in real GDP. These improvements in welfare are attributed to the gains from trade creation. A more meaningful way to view the welfare effects is to consider the EV as a percentage of country's GDP. The AUJA-FTA with full trade liberalisation seems more favourable to Australia than to Japan according to the EV to GDP ratio. Our projections indicate that Australia has a ratio of 1.33 per cent compared to the Japanese 0.17 per cent. The change in real consumption (see column 6 of Table 3) which is regarded as an alternative measure of welfare outcomes also confirms this finding.

Conventionally, trade creation and trade diversion are two key features that govern the welfare outcomes of preferential trade agreements. In the case of AUJA-FTA, the discriminatory behaviour towards non-members will reduce global welfare via trade diversion. All non-member nations have negative EV projections. This is the impact of trade diversion. As can be seen from Table 3, there is a small welfare loss globally which amounts to US\$ 3413 million due to the AUJA-FTA.

TABLE 3: MACROECONOMIC AND TRADE PERFORMANCE RESULTS OF THE FTA

	Real GDP	Export Volume	Import Volume	Terms of Trade	Equivalent Variation (EV) (US\$ million)	EV as (%) of GDP	Real Consumption Expenditure
<i>Full Trade Liberalisation</i>							
AUS	0.22	0.69	6.41	5.58	4750.84	1.33	1.41
USA	0.00	-0.12	-0.14	-0.07	-515.16	-0.01	0.00
ASEAN(6)	-0.15	-0.20	-0.30	-0.06	-860.10	-0.16	-0.19
CHI	-0.04	-0.10	-0.21	-0.07	-534.23	-0.05	-0.06
JPA	0.33	1.91	1.61	-0.56	7261.85	0.17	0.25
KOR	-0.02	-0.12	-0.20	-0.06	-145.98	-0.03	-0.05
TWN	-0.02	-0.06	-0.10	-0.03	-72.97	-0.03	-0.03
HKG	0.00	-0.01	-0.01	0.00	-2.28	0.00	0.00
EU	-0.01	-0.03	-0.04	-0.01	-664.97	-0.01	-0.01
ROW	-0.01	-0.06	-0.07	-0.01	-617.44	-0.01	-0.01
<i>Trade Liberalisation Excluding Agricultural Goods</i>							
AUS	0.39	2.39	5.51	2.98	3259.99	0.91	0.97
USA	0.00	-0.11	-0.1	-0.04	-771.64	-0.01	-0.01
ASEAN(6)	-0.07	-0.08	-0.16	-0.06	-508.45	-0.09	-0.11
CHI	0.00	-0.05	-0.14	-0.06	-196.46	-0.02	-0.02
JPA	0.16	1.36	1.34	-0.21	3482.18	0.08	0.12
KOR	-0.03	-0.06	-0.13	-0.05	-187.12	-0.04	-0.05
TWN	-0.02	-0.05	-0.1	-0.03	-79.04	-0.03	-0.03
HKG	0.00	0.00	0.00	0.00	7.11	0.00	0.00
EU	0.00	-0.02	-0.03	-0.01	-514.04	-0.01	0.00
ROW	-0.01	-0.05	-0.06	-0.01	-631.73	-0.01	-0.02

Source: Author's simulation of GTAP.

Columns 2 and 3 of Table 4 report the sectoral output changes in response to the AUJA-FTA being implemented in its full liberalisation form. Australia is projected to experience more significant structural adjustments in terms of sectoral outputs in comparison to Japan. The sectors that export agricultural and related goods from Australia emerge as key winners whereas main manufacturing sectors that may face import competition become the losers. The performance of sectors such as 'Grains', 'Meat products' and 'Sugar' are quite exceptional. Conversely, the same agricultural sectors in Japan appear to be the significant losers from the FTA. Nevertheless Japanese

manufacturing sectors show a consistent positive output response to the removal of tariffs and ‘Motor vehicles and parts’ has the highest output growth (1.79 per cent) among them.

The factor market adjustments arising from the trade liberalisation are another aspect of structural changes that occur in both countries. Table 5 (columns 2-5) reports changes in the demand for land, labour (skilled and unskilled) and capital in production sectors of Australia and Japan. While these changes are quite complex, they closely follow the output response that was previously described. For example, while Australia’s agricultural sectors will require more labour and capital to meet the new demand for its output from Japan, their Japanese counterparts will experience the opposite. However the demand for primary inputs by the Japanese manufacturing sectors will increase and the demand by Australian industries will decrease. These shifts in factor demands are quite consistent with the respective comparative advantage which is further strengthened by the FTA.

TABLE 4: CHANGE IN SECTORAL OUTPUTS UNDER THE FTA

	Full Trade Liberalisation		Trade Liberalisation Excluding Agricultural Goods	
	Australia	Japan	Australia	Japan
Grains	93.25	-24.15	-11.61	0.52
Other crops	-10.65	0.28	-2.37	-0.60
Animal products	5.69	-4.21	19.39	-7.97
Forestry and fishing	0.41	0.30	0.67	-0.15
Mining and energy	-5.83	0.64	-4.65	0.40
Meat products	53.43	-9.56	74.61	-15.18
Other food products	16.55	0.56	21.92	-0.73
Dairy	4.65	-2.09	12.87	-3.29
Sugar	57.22	-10.29	64.87	-10.94
Beverages and tobacco	-1.79	0.41	-0.21	0.17
Textiles	-12.40	0.82	-8.75	0.54
Wearing apparels	-7.16	0.44	-5.53	0.25
Wood and paper products, publishing	-2.78	0.38	-1.71	0.13
Chemical, rubber and plastic	-7.12	0.60	-5.47	0.44
Ferrous metals	-14.29	1.17	-11.75	0.81
Metal products	-4.42	0.55	-3.17	0.31
Motor vehicles and parts	-11.00	1.79	-9.79	1.52
Machinery and equipment	-12.10	0.89	-10.11	0.54
Miscellaneous manufactures	-6.68	0.66	-5.31	0.25
Services	0.30	0.26	0.40	0.12

Source: Author’s simulation of GTAP.

A quite robust export performance by industries in both countries can be expected under the FTA. As can be seen from Table 6, Australia will strengthen its position in trade with Japan by exporting more of its agricultural goods. The most significant winners are 'Grains', 'Sugar', and 'Meat products'. The export performance of Japanese sectors is also very encouraging. While there is an overall stimulus from the FTA to various sectors to do better, the manufacturing sectors are particularly advantaged by the removal of tariffs. For Japan, sectors such as 'Textiles', 'Wearing apparels', 'Metal products', and 'Motor vehicles and parts' promise to be the key players in exporting to Australia under free trade.

Trade Liberalisation Excluding Agricultural Goods

From the outset of the negotiations, Australia has persuaded the Japanese government to consider the FTA with the full liberalisation option. Of course this appears to be the best option for Australia, though for Japan the protection of its agricultural sector has been a priority in many previous FTA treaties. Therefore its position is still unclear with the FTA with Australia. Japanese farmers have consistently opposed to the liberalisation of the agricultural trade (Scollay, 2001). Surely, the role of agriculture and any associated level of protection afforded it will be a major concern in the forthcoming process of negotiations.

We have also attempted to project the potential outcome of an AUJA-FTA without liberalising agricultural trade between the two countries. This may provide a preliminary estimate to trade policy negotiators who may be concerned with the ramifications of full free trade with Australia. Can Japan reap the full benefits by excluding agriculture from the proposed FTA? Will Japanese farmers be better off by not allowing free market access for Australian agricultural exports in Japan? Given Australia is a key supplier of agricultural goods to Japan, does it make sense to exclude such trade from the FTA? Some preliminary answers to these questions are found in the projected

TABLE 5: CHANGES IN DEMAND FOR KEY PRIMARY INPUTS IN AUSTRALIA AND JAPAN

	Full Trade Liberalisation				Trade Liberalisation Excluding Agricultural Goods			
	Land	Unskilled labour	Skilled labour	Capital	Land	Unskilled labour	Skilled labour	Capital
<i>In Australia</i>								
Grains	57.51	108.42	108.76	109.06	-13.76	-11.11	-11.02	-10.79
Other crops	-19.61	-7.65	-7.49	-7.35	-6.18	-1.37	-1.27	-1.01
Animal products	-7.14	10.34	10.53	10.7	11.32	21.84	21.96	22.27
Forestry and fishing	-11.95	0.57	0.71	0.84	-3.67	0.98	1.06	1.28
Mining and energy	-30.65	-8.29	-7.86	-7.49	-13.92	-6.8	-6.54	-5.89
Meat products	-20.21	52.75	53.98	55.07	12.61	73.91	74.74	76.78
Other food products	-29.91	15.64	16.57	17.4	-5.25	20.94	21.52	22.97
Dairy	-33.65	3.7	4.55	5.29	-8.81	11.79	12.34	13.69
Sugar	-17.13	56.11	57.27	58.33	10.62	63.69	64.42	66.25
Beverages and tobacco	-35.59	-2.89	-2.1	-1.4	-14.08	-1.42	-0.94	0.26
Textiles	-40.15	-12.99	-12.18	-11.48	-17.86	-9.35	-8.84	-7.59
Wearing apparels	-38.5	-7.66	-6.81	-6.06	-16.52	-6	-5.48	-4.18
Wood and paper products, publishing	-37.28	-3.63	-2.74	-1.97	-15.18	-2.59	-2.05	-0.71
Chemical, rubber and plastic	-38.61	-8.04	-7.19	-6.45	-16.69	-6.42	-5.9	-4.61
Ferrous metals	-40.83	-15.15	-14.37	-13.68	-19.22	-12.68	-12.19	-10.99
Metal products	-37.7	-5.08	-4.2	-3.44	-15.67	-3.83	-3.3	-1.98
Motor vehicles and parts	-39.73	-11.78	-10.97	-10.25	-18.37	-10.61	-10.12	-8.88
Machinery and equipment	-40.08	-12.79	-11.98	-11.28	-18.45	-10.79	-10.29	-9.06
Miscellaneous manufactures	-38.4	-7.35	-6.5	-5.75	-16.52	-6	-5.48	-4.18
Services	-37.53	-0.68	0.32	1.19	-14.9	-0.55	0.05	1.54
<i>In Japan</i>								
Grains	-15.97	-25.58	-25.59	-25.49	1.33	0.32	0.31	0.39
Other crops	5.8	-0.83	-0.86	-0.72	0.38	-0.84	-0.84	-0.77
Animal products	1.86	-5.4	-5.43	-5.29	-5.86	-8.43	-8.43	-8.37
Forestry and fishing	5.96	0.39	0.37	0.49	0.71	-0.25	-0.25	-0.19
Mining and energy	13.92	0.51	0.45	0.82	2.36	0.33	0.31	0.51
Meat products	13.21	-9.81	-9.91	-9.31	-4.8	-15.32	-15.35	-15.05
Other food products	19.03	0.37	0.25	0.92	2.53	-0.84	-0.87	-0.53
Dairy	17.53	-2.31	-2.42	-1.78	1.27	-3.42	-3.45	-3.11
Sugar	12.72	-10.5	-10.6	-10.01	-2.62	-11.07	-11.09	-10.79
Beverages and tobacco	18.89	0.1	-0.01	0.65	2.93	-0.02	-0.05	0.3
Textiles	20.32	0.7	0.57	1.32	3.31	0.46	0.43	0.82
Wearing apparels	20.1	0.26	0.14	0.89	3.17	0.14	0.11	0.5
Wood and paper products, publishing	20.06	0.18	0.06	0.8	3.11	0.01	-0.02	0.36
Chemical, rubber and plastic	20.14	0.34	0.21	0.96	3.23	0.27	0.24	0.63
Ferrous metals	20.44	0.92	0.79	1.55	3.41	0.66	0.63	1.02
Metal products	20.16	0.38	0.25	1	3.2	0.2	0.17	0.56
Motor vehicles and parts	20.81	1.61	1.49	2.24	3.74	1.4	1.37	1.76
Machinery and equipment	20.31	0.67	0.55	1.29	3.29	0.41	0.38	0.77
Miscellaneous manufactures	20.2	0.45	0.33	1.08	3.16	0.12	0.09	0.48
Services	20.85	0.03	-0.1	0.71	3.22	-0.02	-0.06	0.37

Source: Author's simulation of GTAP.

TABLE 6: CHANGE IN BILATERAL EXPORT VOLUMES UNDER THE FTA

	Full Trade Liberalisation		Trade Liberalisation Excluding Agricultural Goods	
	From Australia to Japan	From Japan to Australia	From Australia to Japan	From Japan to Australia
Grains	1290.39	285.74	-26.70	45.06
Other crops	-43.17	54.77	-24.24	21.62
Animal products	-25.55	73.77	-29.35	39.26
Forestry and fishing	-1.73	8.74	-10.13	10.86
Mining and energy	-8.29	32.88	-6.68	32.54
Meat products	522.14	91.74	630.28	55.06
Other food products	371.68	28.48	420.01	15.89
Dairy	322.11	64.52	373.93	44.49
Sugar	804.72	334.28	825.77	312.20
Beverages and tobacco	105.57	24.92	114.52	22.02
Textiles	-23.43	101.70	-15.22	98.25
Wearing apparels	73.09	182.92	81.51	178.12
Wood and paper products, publishing	-13.89	38.69	-11.41	37.25
Chemical, rubber and plastic	-8.53	45.17	-4.96	43.90
Ferrous metals	-14.75	37.09	-11.78	36.57
Metal products	-10.33	88.51	-6.59	85.85
Motor vehicles and parts	-7.81	87.15	-5.04	85.77
Machinery and equipment	-18.92	29.92	-15.70	28.92
Miscellaneous manufactures	-18.85	26.79	-14.72	23.52
Services	-1.00	8.41	-10.81	6.76

Source: Author's simulation of GTAP.

macroeconomic outcomes reported in the second panel in Table 3. These results are obtained by excluding commodity 1-4 in Table 2 from the FTA.

A quick glance at the GDP projections indicates that Japan's gain in GDP under full free trade is halved (from 0.33 to 0.16 per cent) if agriculture is excluded from the liberalisation. Australia on the other hand improves its position in GDP (from 0.22 to 0.39 per cent). It appears that the benefits projected under the full liberalisation for Japan are reduced substantially by removing agriculture from the proposal. A most noticeable change for Australia is the significantly reduced terms of trade improvement and the associated trade outcome. Australia exports more and imports slightly less than before.

Overall, the welfare of both countries is reduced as measured in absolute as well as relative terms. Consistent with income changes, real consumption is also estimated to be less. Overall, the macroeconomic projections in Table 3 imply that Japan will eventually experience much reduced benefits in terms of income, trade, and welfare in the event it decided to exclude key agricultural goods from the FTA. Australia's experience is relatively less sensitive to the decision on agricultural goods. The effects of trade creation and diversion are also reflected in the welfare projections.

As can be seen from Table 4, the sectoral output projections also changed substantially as a result of removing agricultural goods from the agreement. The extent of the change is a reflection of how producers respond to the policy decision on agricultural trade. In both Australia and Japan, 'Grain' sector's output performance is reversed dramatically. On examining the rest of the sectoral output responses, it is seen that different sectors in the Australian economy improve their position relative to their Japanese counterparts. This sectoral performance could perhaps explain why Australia's real GDP increases under this scenario compared to the full liberalisation. For Japan, the decision on agricultural trade is critical and it could certainly change the outcome for Japan considerably. Trade negotiators on the Japanese side need to be aware of such effects prior to concluding an FTA with Australia.

The employment projections shown in Table 5 suggest that the opposition to the FTA by the farming community in Japan does have some merit. The demand for skilled and unskilled labour in 'Grain' is reduced significantly under full liberalisation but the removal of agricultural goods from the FTA may reverse the demand to be positive. But it comes at the expense of the rest of economy facing somewhat reduced employment prospects as the FTA is transformed from full to partial liberalisation mode. The magnitudes of the bilateral exports volumes are also affected and the main shift again occurring in 'Grains'. Interestingly, except 'Grains', Australia's export performance shows an overall improvement whereas as Japan's is somewhat adversely affected.

6. Conclusion

This paper provides some preliminary estimates of the economic cost and benefits of the proposed AUJA-FTA which may become a significant change in the bilateral trade policy for both countries. The simulations conducted using the GTAP model examined two plausible bilateral trade policy scenarios: full trade liberalisation and trade liberalisation excluding agriculture. Naturally, as Australia's comparative advantage lies in the agricultural commodities and Japan's in the manufactured goods, the full liberalisation option appears to be giving a balance outcome that can be regarded as superior to any other alternative. Both countries gain in welfare at a higher level and trade would occur according to their respective comparative advantage if trade is liberalised across the board. Any exceptions to this policy could lead to possibly a sub-optimal outcome to both parties.

The liberalisation of trade in agricultural goods has become a politically sensitive issue in Japan since its possible negative impacts on employment. The analysis presented in this paper clearly demonstrates that Japan is likely to experience a reduction in its benefits that are possible from fully-liberalised trade with Australia if it decides to exclude key agricultural goods from the agreement. Compared to many countries that import agricultural goods, Japan's average tariffs on such imports are fairly low (12 per cent). What is special for agricultural protection in Japan is extremely high protection given to several specific products with a complicated system that combines quotas and high tariff rates. For example, ad valorem tariffs equivalents on goods such as rice, wheat, sugar, butter, and potatoes are well above 200 per cent. As we can see from our second simulation scenario, the exclusion of commodities of this type from the FTA makes a significant difference. For Japan, it would be more beneficial to liberalise agricultural trade under the FTA and seek appropriate adjustment policies to deal with negatively impacted sectors at a subsequent stage. In the long run, it is an affordable policy option for Japan and the important positive impacts that eventuate from the free trade treaty will surely outweigh the costs. Moreover, the FTAs of this nature will ensure stable supply of food and natural resources that are paramount to the long-term growth of the Japanese economy.

APPENDIX A.1 AGGREGATION OF REGIONS AND COMMODITIES

Aggregated Region	GTAP Region	Aggregated Commodity	GTAP Commodity
1. Australia (AUS)	Australia	1. Grains	Paddy rice; wheat; cereal grains nec
2. Unites States (US)	United States	2. Other crops	Vegetables, fruits, nuts; Oil seeds; Plant-based fibers; Crops nec Sugar cane, sugar beet,
3. ASEAN (6)	Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam	3. Animal products	Cattle, sheep, goat, horses; Animal products nec; Wool, silk-worm cocoons, Raw milk
4. China (CHI)	China	4. Forestry and fishing	Forestry, fishing
5. Japan (JPA)	Japan	5. Mining and energy	Coal; Oil; Gas; Minerals nec; petroleum and coal products
6. Korea (KOR)	Korea	6. Meat products	Meat: cattle, sheep, goats, horse; Meat products nec,
7. Taiwan (TWN)	Taiwan	7. Other food products	Vegetable oil and fats; processed rice; food products nec
8. Hong Kong (HKG)	Hong Kong	8. Dairy	Dairy products
9. European Union (EU)	United Kingdom, Germany, Denmark, Sweden, Finland, Austria, Belgium, France, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Cyprus, Czech Republic, Hungary, Malta, Poland, Slovakia, Slovenia, Estonia, Latvia, Lithuania	9. Sugar	Sugar
		10. Beverages and tobacco	Beverages and tobacco products
		11. Textiles	Textiles
		12. Wearing apparels	Wearing apparel; leather products
		13. Wood and paper products, publishing	Wood products; Paper products, publishing
10. Rest of Europe (RU)	All other regions	14. Chemicals, rubber and plastic	Chemical, rubber, plastic prods
		15. Ferrous metals	Ferrous metals; Metals nec
		16. Metal products	Metal products
		17. Motor vehicles and parts	Motor vehicles and parts; Transport equipment nec
		18. Machinery and equipment	Electronic equipment; Machinery and equipment nec
		19. Miscellaneous manufacturing	Manufacturing nec
		20. Services	Electricity; Gas manufacture and distribution; Water; construction; PublicAdministration/Defence/Health/Education; Dwellings; Trade, Sea transport, Air transport, Communication; Financial services nec, Insurance, Business services nec, Recreation and other services

Source: Purdue University 2005, GTAP database version 6

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