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Implications of a Trilateral FTA between China, Japan and Korea for Australian Bilateral FTAs with China, Japan and Korea

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Abstract

After many years and many rounds of negotiations seeking bilateral free trade agreements (FTA) between Australia and China, Japan and Korea, progress has been minimal because they cannot agree on access to markets for agricultural products. To add to the complications and lack of progress made in these negotiations, China, Japan and Korea have started negotiating a trilateral FTA. If a China-Japan-Korea Trilateral FTA is struck, it could affect Australian negotiation of bilateral FTAs with each of these countries, with consequential implications for Australian agricultural exports. These concerns are the main focus of this paper. However when the comparative advantages of agricultural production and agricultural trade complementarities of these countries are examined, it seems that if a China-Japan-Korea trilateral FTA is struck, it ought to not further complicate Australia's bilateral FTA negotiations. A trilateral FTA between China, Japan and Korea would have limited negative impacts on Australia's agricultural exports to these countries. Australia has a strong comparative advantage in producing many land-intensive products that these three countries will continue to need to import. Nonetheless, successfully concluding bilateral FTAs with each of China, Japan and Korea remains a formidable challenge because agreement on agricultural trade negotiations remains elusive. In future, Australia's FTA negotiators may need to be even more pragmatic, strategic and flexible in their approach to agricultural trade negotiations.

1. Introduction

The aim of establishing a China-Japan-Korea trilateral free trade area was first raised publicly in 2002. In late 2012, it was officially announced that China, Japan and Korea would start negotiating a trilateral free trade agreement (FTA). The first round of negotiations was held in Seoul in late March 2013. A further two rounds of negotiations are scheduled in 2013 in China and Japan respectively. China, Japan and Korea are the largest, second-largest and fourth largest economies in Asia, respectively. Their combined GDP was $14 trillion in 2011, accounting for one fifth of global GDP. They are also major trading nations with combined international trade worth $690 billion in 2011.

These three countries are also major trading partners of Australia, with China being Australia's largest trading partner, Japan the second-largest trading partner and Korea the fourth largest trading partner. In recent decades trade with these three countries has contributed significantly to the high and sustained economic growth of Australia. These countries are also major destinations for Australian agricultural exports, with almost 40 per cent of Australia's agricultural exports landing in these three countries. Not surprisingly, Australia has devoted great effort to improve the access of agricultural

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exports into these three markets; particularly the attempts to negotiate bilateral FTAs with China, Japan and Korea. The signing of such FTAs, if achieved, is expected to significantly improve the access of Australia's agricultural exports to these markets.

Ironically, it is agreement on agricultural market access that has been one of the major obstacles preventing the signing of FTAs between Australia and each of these countries. In other words, China, Japan and Korea all have reservations about granting full access for Australia's agricultural exports to their markets as would happen under a FTA arrangement. Given these difficulties, it is instructive to analyse agricultural trade among these four countries involved, to identify the production strengths, consumer demands and patterns of agricultural trade among them.

Since the intention to investigate a trilateral China-Japan-Korea FTA was made public in 2002, there has been a growing number of studies on the trade in agricultural goods between China, Japan and Korea, and studies of the likely impacts of a trilateral FTA on each country's agricultural sector. Tian (2007) and Si, *et al.* (2012) explored patterns of agricultural trade among these three countries. Zeng and Zhang (2006) elaborated on the evolution of comparative advantages of China, Japan and Korea's agricultural trade and competition and cooperation between them in the trade of agricultural goods. Liu and Liu (2005) and Bai and Tian (2010) analysed agricultural intra-industry trade among the three countries. Park (2002) discussed trade disputes and counter-measures. Jung, *et al.* (2003) emphasised the importance of dealing with political and security issues between the three countries for a successful trilateral FTA to be concluded. Moon (2012) calculated price competitiveness and revealed comparative advantages (RCAs) for major agricultural commodities of these three countries. Choi et al. (2010) used a partial equilibrium model to estimate the effects on the Korean agricultural sector of removing tariffs under the trilateral FTA. However there have been no studies into the implications of a trilateral FTA between China, Japan and Korea for Australia's agricultural trade with these countries, and how such a FTA could impact on Australia's future negotiations for bilateral FTAs with each of them.

In this paper the dynamics of Australia's agricultural trade with three of its major trading partners in Asia, China, Japan and Korea, is investigated, along with the likely implications for Australia's FTA negotiations with each of them if they sign a trilateral FTA. Thus this study is a start to filling the gap in the literature identified above.

In the next section, agricultural trade between Australia, China, Japan and Korea are highlighted, followed by a brief account of FTA negotiations that have occurred hitherto among these countries. In Section 3 is presented the key conceptual considerations and analytical methods used to identify the comparative advantages of various agricultural products of each country. Also, a method to evaluate complementarities of agricultural trade between countries is established. In Section 4 the empirical findings are reported and discussed. In the last section, conclusions are drawn with a particular focus on whether there would be added complications for Australia's FTA negotiations with China, Japan and Korea if a trilateral FTA was signed among them, and what Australias' FTA negotiators may need to do in carrying on FTA negotiations with each of these countries.

2. Background

2.1 Agricultural Trade between Australia, China, Japan, and Korea

2.1.1 Importance of agricultural trade

The four countries under investigation are major trading nations in agricultural products. Since the early 1990s, China's share of world agricultural trade has increased steadily, increasing from 2.3 per cent in 1992 to 6.6 per cent in 2011 (Table 1). In this time, total agricultural trade of China in aggregate value (imports plus exports) expanded from US$19.5 billion to a staggering US$209.3 billion; increasing over 10 times. Korea's share of world trade remained relatively stable at around 1.5 per cent, while Japan's share declined from 6.9 per cent in 1992 to 3.4 per cent in 2011. Aggregate value of trade tripled for Korea and doubled for Japan. For the three countries, their combined share of total world agricultural trade has been relatively stable at around 10 per cent. This share has been stable since 2007 (see Table 1) – the decline in Japan's share has been largely offset by the increase in China's share. The share of China's agricultural trade is expected to continue rising. Australia's share of world agricultural trade is between 1.5-2.0 per cent, with aggregate value of trade more than tripling since the early 1990s. Agricultural trade remains highly important to Australia, especially considering it has a small population.

Table 1. Share of Agricultural Trade of World Total (%)

	World	Australia		China		Japan		Korea		China, Japan and Korea
	US$ b	US$ b	%	US$ b	%	US$ b	%	US$ b	%	%
1992	864	15.1	1.7	19.5	2.3	59.3	6.9	13.4	1.5	10.7
1993	822	15.2	1.8	18.1	2.2	63.2	7.7	13.5	1.6	11.5
1994	952	17.9	1.9	25.0	2.6	71.9	7.6	15.4	1.6	11.8
1995	1125	18.5	1.6	31.1	2.8	79.5	7.1	19.2	1.7	11.5
1996	1166	21.6	1.9	30.2	2.6	77.5	6.6	20.1	1.7	11.0
1997	1154	22.6	2.0	30.4	2.6	71.6	6.2	18.5	1.6	10.4
1998	1107	18.1	1.6	26.9	2.4	60.7	5.5	13.3	1.2	9.1
1999	1087	19.2	1.8	28.1	2.6	64.0	5.9	15.3	1.4	9.9
2000	1095	20.4	1.9	35.9	3.3	66.6	6.1	17.1	1.6	10.9
2001	1105	20.3	1.8	36.8	3.3	62.2	5.6	16.4	1.5	10.4
2002	1167	21.4	1.8	40.6	3.5	59.6	5.1	17.4	1.5	10.1
2003	1350	21.5	1.6	52.6	3.9	63.3	4.7	18.7	1.4	10.0
2004	1551	28.0	1.8	66.4	4.3	70.9	4.6	21.0	1.4	10.2
2005	1669	27.8	1.7	73.9	4.4	72.0	4.3	22.1	1.3	10.1
2006	1847	29.4	1.6	84.2	4.6	72.1	3.9	23.9	1.3	9.8
2007	2203	31.3	1.4	104.2	4.7	76.5	3.5	28.4	1.3	9.5
2008	2606	36.6	1.4	129.1	5.0	88.9	3.4	33.9	1.3	9.7
2009	2266	33.3	1.5	117.5	5.2	75.8	3.3	28.3	1.2	9.8
2010	2613	38.1	1.5	159.9	6.1	87.6	3.4	36.0	1.4	10.8
2011	3164	50.9	1.6	209.3	6.6	106.9	3.4	47.4	1.5	11.5

Source: calculated by the authors based on UN Comtrade Database SITC Revision III.

The critical importance of agricultural trade to Australia is starkly illustrated by the share of total trade that comprises agricultural traded goods (Figure 1). In 2011, agricultural trade accounted for 10 per cent of Australia's total trade with a value being US$51 billion. For Australia the agricultural component of total trade is more than twice that for the other three countries. While the agricultural share of total trade has been declining for all four countries, Australia's agricultural share of total trade is much higher than for China, Japan and Korea.

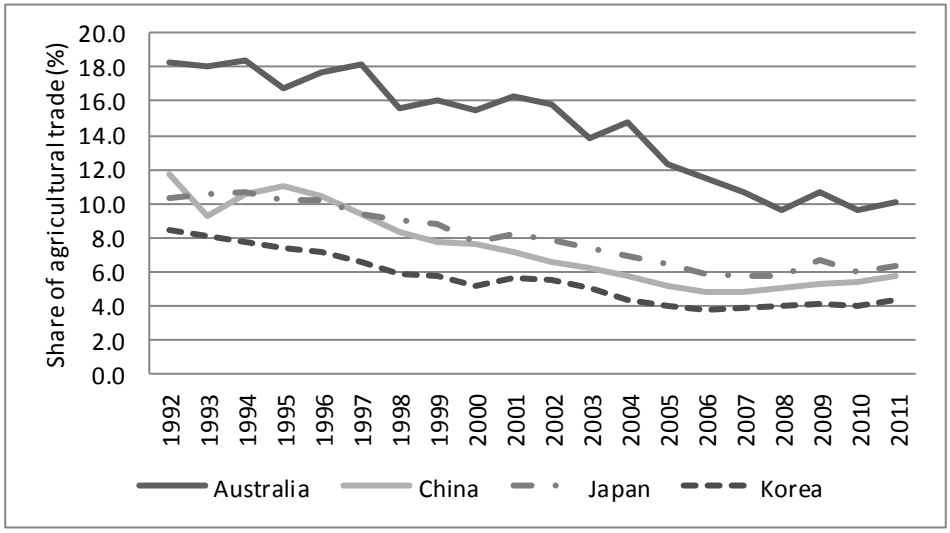
In sum, agricultural trade is important to all four countries, but for different reasons. In Japan and Korea, agricultural trade is to obtain supply that domestic resources cannot produce. This is shown in Figure 2. Agricultural imports of Japan and Korea far exceed agricultural exports. For China, agricultural exports were instrumental in earning foreign exchange to finance economic take-off in the early 1980s. But, by 2000, agricultural imports exceeded exports. After joining the WTO in late 2001, China's agricultural imports increased much faster than exports, making it nowadays a major net importer of agricultural goods (Figure 2). China's deficit in agricultural trade is expected to continue to increase because of limited domestic resources to produce more agricultural product. For Australia, agricultural trade has always been a major source of export earnings and a major contributor to economic growth (Figure 2). Naturally, Australia attends closely to market access for its agricultural exports to the three significant net agricultural importing nations in the world, China, Japan and Korea.

2.1.2 Dynamics of agricultural trade

Developments in agricultural trade between each pair of the four countries are shown in Figure 3. Japan has a deficit in agricultural trade with each of the other three countries; the largest deficit is with China. Korea has a small surplus in agricultural trade with Japan, and large and increasing deficits with China and Australia. China maintains an agricultural trade surplus with Japan and Korea, and

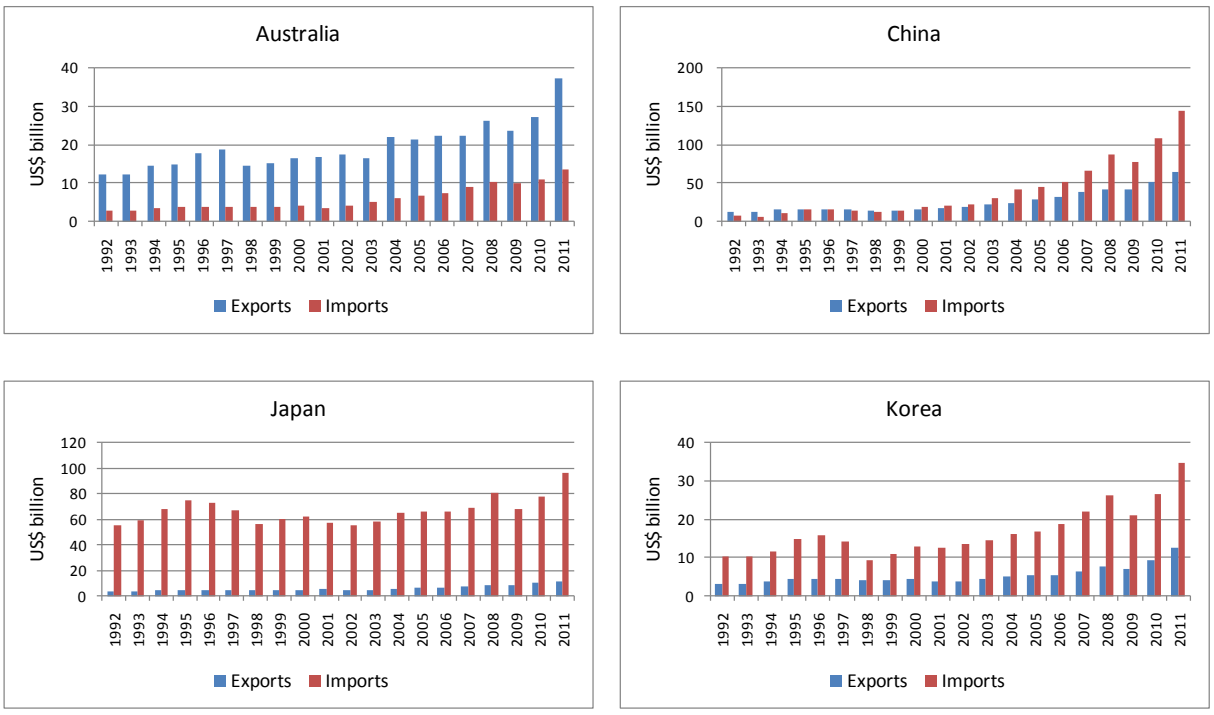
has a rapidly expanding trade deficit with Australia. Australia's surplus in agricultural trade is increasing with all the three countries.

Figure 1. Share of Agricultural Trade of Total Trade (%)



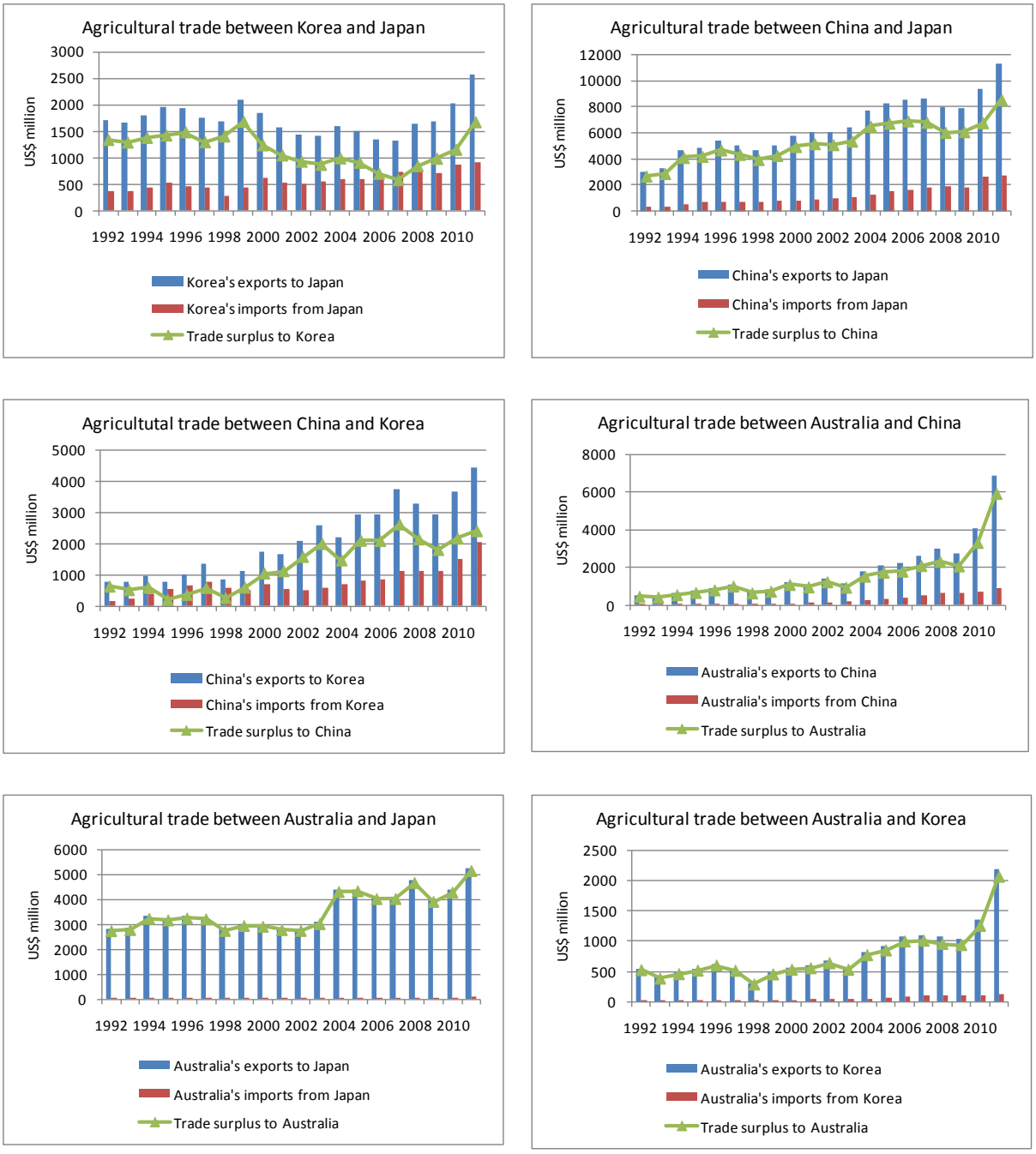
Source: based on UN Comtrade Database SITC Revision III.

Figure 2. Changes in Agricultural Exports and Imports



Source: based on UN Comtrade Database SITC Revision III.

Figure 3. Agricultural Trade Between Australia, China, Japan and Korea



Source: based on UN Comtrade Database SITC Revision III.

Figure 3 also suggests that the importance of the Chinese and Korean markets to Australia's agricultural exports is rapidly increasing. Although Japan is still a major market for Australia's agricultural products, the potential for further large increase in imports from Australia is likely to be limited due to its aging population. On the other hand, such a potential can be much larger in the Chinese and Korean markets.

2.1.3 Major agricultural products traded

Agricultural products for trade statistics can be classified in several different ways. One classification adopted in the United Nations Comtrade Database, i.e., the Standard International Commodity Classification (SITC Revision III), has been widely used in the literature. According to SITC, traded agricultural products include 'food' and 'agricultural raw material'. 'Food' includes SITC0 (Food and live animals), SITC1 (Beverages and tobacco), SITC4 (Animal and vegetable oils, fats and waxes). The subgroup SITC22 (Oil seeds and oleaginous fruits) of SITC2 (Crude materials, inedible, except fuels) is also placed in 'food'. Agricultural raw material includes several subgroups of SITC2 (Crude materials, inedible, except fuels), i.e., SITC21 (Hides, skins and furskins, raw), SITC23 (Crude rubber), SITC25 (Pulp and waste paper), SITC26 (Textile fibres), and SITC29 (Crude animal and vegetable materials). In this study, data used is from the United Nations Comtrade Database SITC Revision III and 'agricultural products' include SITC0 (Food and live animal), SITC1 (Beverages and tobacco), several subgroups of SITC2 (Crude materials, inedible, except fuels), namely, SITC21(Hides, skins and furskins, raw), SITC22 (Oil seeds and oleaginous fruits), SITC23 (Crude rubber), SITC24 (Cork and wood), SITC25 (Pulp and waste paper), SITC26 (Textile fibres), and SITC29 (Crude animal and vegetable materials), and SITC4 (Animal and vegetable oils, fats and waxes). In this study, all the analyses of the bilateral trade and calculations of the indices are based on the values of exports and imports between the countries.

In Table 2 it is shown that, in most cases, agri-foods are the most traded products between these countries; the value of food trade doubles that of agricultural raw materials. The severe constraint of land supply in Japan means that, compared with the other three countries, it has the lowest proportion of food exports out of its total agricultural exports, and high food imports. In 2011, total food exports by Japan to the other three countries amounted to US$760 million only. Japan's total food imports from China, Korea and Australia were over US$16 billion, with about US$10 billion worth of the imports coming from China. The value of Japan's trade in agricultural raw materials was about one eighth that of trade in food. Its raw materials trade is with China mainly. These raw materials include products that are inputs for industrial processing, such as rubber, paper and textile fibres. While Japan's imports from China are *real* raw agricultural materials, Japan's exports of 'raw' materials to China are mostly wastes for recycling purposes (see Tables A5 and A6; further details of the breakdown of foods and raw materials traded between each pair of the four countries can be found in Appendix A).

The proportion of Korea's food exports in total agricultural exports is slightly higher than for Japan. In 2011, food exports from Korea to other three countries were worth around US$3 billion. The majority of the Korean food exports go to Japan, being about US$2 billion annually (Table 2). Food imports amounted to almost US$6 billion in 2011. Trade in agricultural raw materials by Korea has a pattern similar to that of Japan, exporting mostly wastes for recycling purposes to China (like Japan, Korea does not have the resources to produce land-intensive raw agricultural materials) and importing real raw agricultural materials from China (see Tables A3 and A4).

Agricultural exports from China to the other three countries comprise mainly food products; food accounts for over 80 per cent of all agricultural exports. In 2011, China exported around US$14 billion of foodstuff to the other three countries and imported about US$3 billion worth of foods from them. It is noteworthy that China's food imports are increasing. The major destination of food exports from China is to Japan. China's exports of foods to Japan have been increasing in the past two decades, amounting to almost US$10 billion in 2011 (Table 2). Food exports by China to Korea are also extensive, reaching US$3.5 billion in 2011. China's food exports to Australia are relatively small. China's imports of raw agricultural materials far exceed its exports, reflecting China's limited resources to produce those land-intensive materials. In 2011, in addition to importing "wastes" from Japan and Korea for recycling (worth a little under US$4 billion), China imported about US$5 billion worth of real agricultural raw materials from Australia, including US$1.5 billion of cotton and US$2.1 billion of wool (Table A7).

Table 2. Major Agricultural Products Traded between Australia, China, Japan and Korea

	SITC	Product	1992		1995		2000		2005		2011	
			US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
Korea to Japan	0	Food and live animals	1440	84.4	1680	85.9	1557	83.9	1123	74.5	1637	63.4
	1	Beverages and tobacco	13	0.7	46	2.4	109	5.9	150	10.0	367	14.2
	2	Crude materials, inedible, except fuels	249	14.6	227	11.6	188	10.1	232	15.4	566	21.9
Japan to Korea	0	Food and live animals	66	18.6	86	16.9	197	37.7	286	50.4	334	39.1
	1	Beverages and tobacco	29	8.2	142	28.0	46	8.8	18	3.1	60	7.0
	2	Crude materials, inedible, except fuels	250	70.2	262	51.7	267	50.9	255	44.8	425	49.8
China to Korea	0	Food and live animals	676	84.2	413	53.1	1382	79.0	2524	85.9	3532	79.2
	2	Crude materials, inedible, except fuels	115	14.3	267	34.3	357	20.4	366	12.5	867	19.5
Korea to China	0	Food and live animals	5	3.2	90	14.4	123	19.3	264	30.1	921	37.0
	2	Crude materials, inedible, except fuels	139	96.6	519	82.9	505	79.2	591	67.3	1463	58.8
China to Japan	0	Food and live animals	2236	74.5	3979	81.6	4844	83.9	7179	86.8	9883	87.3
	2	Crude materials, inedible, except fuels	720	24.0	858	17.6	890	15.4	996	12.1	1347	11.9
Japan to China	0	Food and live animals	32	10.2	89	14.7	137	21.8	347	23.9	299	11.5
	2	Crude materials, inedible, except fuels	276	89.0	510	84.2	487	77.3	1087	75.0	2261	87.2
Australia to China	0	Food and live animals	76	14.1	50	6.6	243	20.0	403	19.3	1474	21.5
	2	Crude materials, inedible, except fuels	458	84.9	667	87.7	931	76.4	1593	76.1	4957	72.4
	4	Animal and vegetable oils, fats and waxes	5	1.0	3	5.6	44	3.6	86	4.1	213	3.1
China to Australia	0	Food and live animals	26	77.7	40	71.4	65	76.1	236	82.1	799	86.3
	1	Beverages and tobacco	1	2.5	2	3.9	10	11.3	22	7.7	32	3.5
	2	Crude materials, inedible, except fuels	5	16.3	13	22.6	9	10.6	26	9.1	85	9.2
Australia to Japan	0	Food and live animals	1706	60.8	2253	69.3	2352	78.8	3520	80.1	4354	83.0
	2	Crude materials, inedible, except fuels	1077	38.4	968	29.8	576	19.3	811	18.4	812	15.5
Japan to Australia	0	Food and live animals	27.9	52.6	25.0	37.2	37.2	66.2	32.3	63.2	54.6	60.3
	1	Beverages and tobacco	5.7	10.7	23.2	34.5	2.5	4.5	3.5	6.8	14.1	15.6
	2	Crude materials, inedible, except fuels	16.2	30.5	15.9	23.6	16.0	28.4	14.7	28.7	20.8	22.9

Australia to Korea	0	Food and live animals	235	43.2	200	36.7	299	53.1	709	77.5	1877	85.7
	2	Crude materials, inedible, except fuels	304	55.9	340	62.4	257	45.6	174	19.0	245	11.2
Korea to Australia	0	Food and live animals	15.4	70.8	17.5	61.3	19.4	60.7	39.3	56.3	75.5	53.4
	1	Beverages and tobacco	0.1	0.3	0.2	0.8	1.0	3.3	2.5	3.6	9.8	6.9
	2	Crude materials, inedible, except fuels	6.3	28.9	10.7	37.7	11.1	34.7	27.9	39.9	54.9	38.8

Source: calculated by the authors based on UN Comtrade Database SITC Revision III.

Australia is a net exporter of both foods and raw agricultural materials to the three Asian countries. In 2011, Australia exported around US$8 billion worth of foods to the three countries, but imported less than US$1 billion from them. Exports of raw materials were worth US$6 billion, but imports from the three Asian countries were less than US$0.2 billion. Exports of food from Australia to Japan and Korea have been increasing both in value terms and in proportion (Table A9 and A11). It is worth noting that although food exported to China by Australia as a proportion of its total agricultural exports is still relatively small (about 22 per cent in 2011), the value of foods exported has increased dramatically, from US$76 million in 1992 to US$1474 million in 2011 (Table 2). This trend is likely to continue and the value of Australia's food exports to China will likely continue to expand. As noted earlier, the majority of Australia's raw agricultural materials are exported to China (Table A7).

2.1.4 Observations

Some important observations arise from the analysis of the statistics of agricultural trade between Australia, China, Japan and Korea.

- All four countries are major participants in world markets for agricultural products.
- China, Japan and Korea are all net importers of agricultural products. Korea's agricultural imports have been increasing steadily. Japan's imports have increased but are slowing. China's imports have been increasing at an increasing rate.
- Australia is a net exporter of agricultural products. Its total exports have been increasing steadily, in both volume and value.
- The most traded product between the four countries is food.
- China, Japan and Korea are net food importers. These countries will continue to be the major destinations for exports of Australian food.
- China's net imports of food are set to continue to increase.
- If the demand for imported food in China replicates what happened in Japan and Korea as economic growth proceeded in these countries, the need to import food by a rapidly growing China will be massive in the foreseeable future.

In the above circumstances, it is not surprising that these three East Asian countries and Australia have markedly different approaches to agricultural trade. Australia is most keen to further expand exports to these three markets. China is determined to increase exports of food to Japan and Korea, and remains cautious about the increasing food imports from Australia. Korea is interested in exporting food to Japan while likely increased food imports from China is of concern. Of all the countries, Japan is the least interested in promoting freer agricultural trade because of the traditional imperative of protecting heavily their highly inefficient farmers. For the above-mentioned reasons, each country has different motivations in agricultural trade, and in negotiations involving such trade, especially in handling questions of market access for agricultural products under FTAs. Currently, these three Asian countries and Australia are negotiating various FTAs between themselves and with various other countries. Unsurprisingly agricultural trade has always been a major issue in these FTA negotiations.

2.2 Negotiations about Free Trade Agreements between the Four Countries

2.2.1 China-Japan-Korea FTA negotiations

Following the opening up of China from the early 1980s, economic exchanges have increased massively between China, Japan and Korea and Australia, greatly benefiting all. Trade with low or no barriers would render even greater economic benefits. In November 2002, China's Premier proposed the establishment of a China-Japan-Korea trilateral free trade area. The proposal immediately received favourable responses from Japan and Korea. A feasibility study of a trilateral free trade agreement was conducted from 2003-09. Subsequently, in 2010-2012, a joint China-Japan-Korea FTA study was conducted, by representatives from government, industry and academia. In May 2012, officials of all the three countries agreed to start trilateral FTA negotiations, and these started officially in November 2012. In late March 2013 the first round of negotiations was held in Seoul. The second round of negotiations was held in Shanghai in late July and early August. The third round of negotiations is planned to be held in Tokyo late 2013.

A trilateral FTA has the potential to deliver considerable benefits to China, Japan and Korea, not only in economic benefits, but also in terms of regional peace and stability. Access to markets for agricultural products is expected to be the major obstacle to China, Japan and Korea achieving a trilateral FTA. The other main hurdles are the bitter, long-standing territorial disputes that have raised

diplomatic and military tensions and hampered economic cooperation (China and Japan are arguing about sovereignty over an archipelago in the East China Sea, while Japan and South Korea have a historic dispute over ownership of islands in waters between the two countries).

2.2.2 Australia-China FTA negotiations

A joint Australia-China FTA Feasibility Study was completed in March 2005. It concluded there would be significant economic benefits for both Australia and China from a free trade agreement. Shortly thereafter Australia and China agreed to commence negotiations about a FTA.

Since the first round of China-Australia negotiations in May 2005, there have been further 18 rounds of negotiations with the latest being held in June 2013. These negotiations have been complex, achieving minimal progress. While issues such as trade in manufactured goods, services, temporary entry of people and foreign investment all complicate the negotiations, the crux has been striking agreement on agricultural trade. China is concerned about the effect of an influx of large quantities of cheap agricultural products from Australia on the livelihoods of Chinese farmers and, ostensibly, implications for China's food security. Such concerns appear strategic negotiating points more than genuine potential problems. Even if all of Australia's agricultural production was exported to China (which is not possible), this would account only for a tiny proportion of the total agricultural output of China. Yet, spurious arguments such as threat to local farmers and security of domestically-produced food supply have prevented meaningful progress of the Australia-China FTA negotiations.

2.2.3 Australia-Japan FTA negotiations

Following a joint Australia-Japan government study on the feasibility of a bilateral FTA, the first round of negotiations about the Australia-Japan Free Trade Agreement commenced in late April 2007. Despite the talks reportedly getting off to a promising start, after sixteen rounds of negotiations, an agreement has not been reached. The profound commitment of Japanese politicians to continue to protect their highly subsidised, highly inefficient, farmers remains the major obstacle to reaching any agreement.

2.2.4 Australia-Korea FTA negotiations

In March 2009 the Australian and Korean governments agreed to launch bilateral FTA negotiations. The first round of the negotiation was held in Melbourne and Canberra in May 2009. To date, five rounds of negotiations have been carried out, with the last meeting in June 2010. Since then, there have been no official negotiations, although senior government officials have reaffirmed on several occasions, when they have been meeting on other business, that they intend to conclude FTA negotiations 'as soon as possible'. In effect, the talks have stalled. A key obstacle remains agriculture, chiefly beef and dairy products. Australia is demanding the same access to markets for beef and dairy products applies in the FTA between the USA and Korea. Korea insists that Australia is a more competitive supplier of beef and dairy products than the USA and thus is not prepared to offer the same level of access to their markets.

2.3 Other Free Trade Agreements and Negotiations

In addition to the above-mentioned negotiations, each country has signed or been in the process of negotiating FTAs with various other countries. For instance, Australia has concluded seven FTAs and is in the process of negotiating nine more (Australian Department of Foreign Affairs and Trade 2013a). China has signed FTAs with 11 countries or regions, including Hong Kong and Macau and is negotiating with eight more countries (Chinese Ministry of Commerce 2013). Japan has concluded 13 FTAs (all but four of those in Asia) and is in the process of negotiating nine more agreements, including the Trans-Pacific Partnership (TPP), for which Japan was recently accepted as a new member (Japanese Ministry of Foreign Affairs 2013). To date, Korea has signed 10 FTAs and is negotiating five more agreements (Korean Ministry of Trade, Industry and Energy 2013). These various FTAs with countries other than Australia or between China, Japan and Korea are not the major focus of this paper. However, given the large number of such agreements in place or in process, and the compounding complications involved, these other FTAs could directly or indirectly affect the negotiations of the FTAs between Australia, China, Japan and Korea.

Further, the recent acceptance of Japan as a new member of the TPP (Trans-Pacific Partnership), but with China not admitted, will complicate negotiations for the proposed trilateral FTA. The upshot may be Japan devoting greater effort to negotiating the TPP and putting less emphasis on the trilateral FTA. To place more pressure on Japan to work with China and Korea on the trilateral FTA –

assuming Japan does not want to be left out of a powerful free trade area in north Asia – China and Korea have already acted strategically by revitalizing their efforts at negotiating the China-Korea bilateral free trade agreement.

To complicate matters further, all four countries have recently involved themselves in the negotiations of the Regional Comprehensive Economic Partnership (RCEP). The RCEP is an ASEAN-centred proposal for a regional free trade area. It is intended to include initially the ten ASEAN member states and the countries that have existing FTAs with ASEAN – Australia, China, India, Japan, Korea and New Zealand. The RCEP negotiations were launched in November 2012. It is likely that the RCEP negotiations too will take a long time to reach a successful conclusion, if any conclusion is reached at all, considering the large number of countries involved and the diverse social and economic conditions and interests of the participating countries.

Precisely how this flurry of trade-related activities, negotiations about negotiations and occasionally, actual steps forward, will continue to affect Australia's negotiations with China, Japan and Korea for a bilateral FTA remains to unfold. Concerning the China-Japan-Korea trilateral FTA negotiations, it is possible trilateral trade negotiations could divert much valuable attention of China, Japan, and Korea away from their talks for a FTA with Australia. The trilateral FTA, whether reached or not, unavoidably complicates the talks seeking a FTA between Australia and each of these countries. If the trilateral FTA between China, Japan and Korea is reached, will it significantly negatively affect the quantities and value of Australian agricultural trade with each of them? Such questions are of great interest to agricultural industry leaders, rural producers, and government trade officials and negotiators. In the rest of this paper an attempt is made to illuminate the nature of some answers to these questions.

3. Methodology

3.1 Conceptual Considerations

The question of interest is how a successful conclusion of the China-Japan-Korea trilateral FTA negotiations might affect Australia's FTA negotiations and agricultural trade with each of them. These questions can be examined from the following perspectives: (i) what is the comparative advantage each country has in producing products that Australia also produces; (ii) to what extent is the agricultural trade between these three countries complementary; and (iii) what is the likelihood and extent that trade diversion will occur as a result of a successful, well-functioning trilateral China, Japan, Korea FTA arrangement being established.

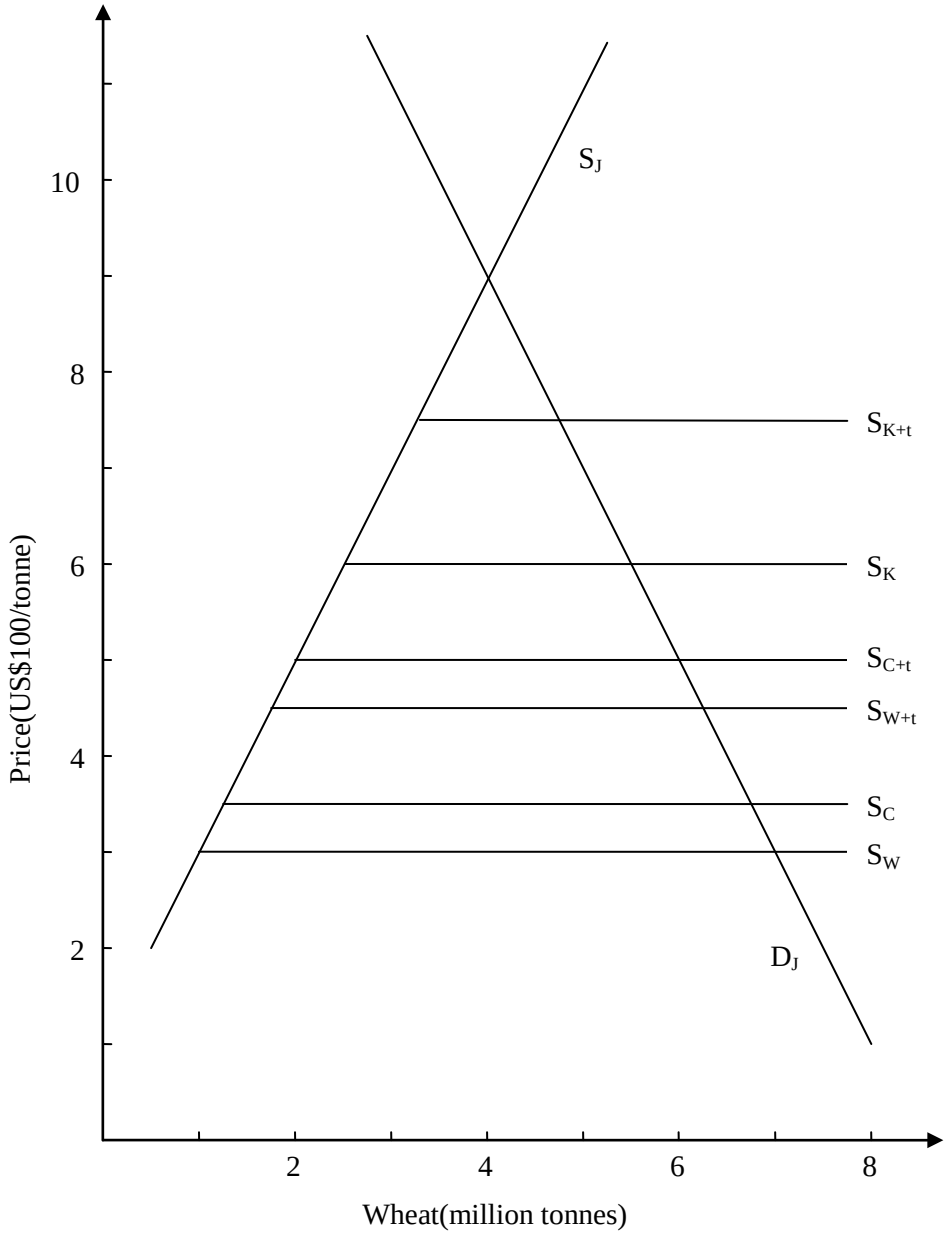
A central point is the following: if one of the three Asian countries has a significant comparative advantage that is comparable to Australia's comparative advantage in producing a product that Australia also produces, then that country will gain a competitive advantage under the trilateral FTA to export this product to the other two member countries, thus replacing Australia's exports. Taking the wheat market as an example, in Figure 4 is depicted a hypothetical wheat market of Japan. Without trade, Japan produces and consumes four million tonnes of wheat at a price of US$900 per tonne. With free trade, the world wheat price is US$300 per tonne, the price at which Australia sells its wheat (for simplicity, we assume the world only has four countries and the price at which Australia exports its wheat is the world price under free trade). Under free trade, Japan produces one million tonnes of wheat at home and imports six million tonnes of wheat at the price of US$300 per tonne. Suppose, Japan imposes a tariff of US$150 per tonne, making the price in Japan US$450 per tonne. Japan produces two million tonnes of wheat at home and imports four million tonnes of wheat at the tariff-enhanced price of US$450 per tonne.

Suppose that China's wheat price is only US$50 per tonne higher than Australia's. If a trilateral FTA is struck, China will be able to export wheat to Japan and Korea at a price of US$350 per tonne, US$100 per tonne lower than Australia's price of US$450 per tonne (with tariff). In these circumstances, trade diversion is inevitable. The higher cost wheat from China replaces Australia's lower cost wheat. This, however, would happen only if China is able to significantly increase its wheat output. If wheat production in China is constrained by resource limits, China would not be able to increase its wheat output significantly. In this case, Japan may still have to buy wheat from Australia at US$450 per tonne.

If wheat growers in the three Asian countries do not have a comparative advantage anywhere approaching the capacity of Australian wheat growers, a trilateral FTA would have little impact on Australia's exports of wheat. This obvious truth would apply to all products for which Australia has a marked superiority in comparative advantage in production. For example, suppose, in Figure 4, that

China's wheat price is US$500 per tonne before Japan imposes a tariff, then, even if a trilateral FTA is concluded, imports from Australia would still be cheaper. The FTA would not affect Australia's wheat exports to Japan and Korea, and even to China.

Figure 4. A Hypothetical Japanese Wheat Market



Complementarities in agricultural trade between the three Asian countries may also affect Australia's FTA negotiations and agricultural trade with them. If, for the three countries, there are low levels of complementarities in trade for agricultural products that Australia exports, then, a north-Asia trilateral FTA is likely to have little impact on Australia's export to some or all of them. Alternatively, if, between the three countries, trade of agricultural products is highly complementary and Australia also exports these products, then Australia may lose out from a trilateral FTA. Still, this would happen only if (a) one of the Asian countries has a comparative advantage that is very close to Australia's and (b) that country has sufficient resource endowments and is able to expand the production.

As such it is useful to estimate the comparative advantage each country has in producing the agricultural products that have been regularly traded between them, and calculate the extent of

complementarities in agricultural trade between them. Comparing such information to Australia's situation, and together taking the three countries' resource endowments into consideration, can help form judgements about whether a north-Asia trilateral FTA would result in significant trade diversion away from the *status quo* situation and if significant diversion was a possibility, whether this should significantly affect Australia's agricultural trade and FTA negotiations with each of the three Asian countries.

3.2 Analytical Methods

To compare export potential and competitiveness of each country in trade of a particular product (or a product group) of sector s (e.g., the agricultural sector), the Revealed Comparative Advantage (RCA) index, as proposed by Balassa (1965), can be computed using the following formula:

$$\mathrm{RCA_{ik}} = \frac{\mathrm{X_{ik}}/\mathrm{X_{it}}}{\mathrm{X_{wk}}/\mathrm{X_{wt}}} \quad (1)$$

where:

$\mathrm{RCA_{ik}}$: revealed comparative advantage index of product group k for country i

$\mathrm{X_{ik}}$: value of exports of product group k by country i

$\mathrm{X_{it}}$: value of total exports of s products by country i

$\mathrm{X_{wk}}$: value of world exports of product group k

$\mathrm{X_{wt}}$: value of total world exports of s products.

Country i has a comparative advantage in exporting product group k when $\mathrm{RCA_{ik}}$ has a value greater than unity. That is, when country i's export share of product group k is larger than the world export share of the same product group. Otherwise, if $\mathrm{RCA_{ik}}$ is less than unity, country i has a comparative disadvantage.

The shortcomings of the RCA index warrant noting. The RCA index is estimated using the trade value of a country. A country's trade value could be artificially inflated by some export-promoting measures, such as export subsidies, subsidies on export costs (e.g., transportation costs), tax rebates on products exported. Hence, the calculated RCAs may deviate from actual comparative advantages. Further, the RCA index is asymmetric as it ranges from one to infinity for products in which a country has a comparative advantage but ranges from zero to one for the case where a comparative disadvantage exists (Yeats 1985). To correct this skewed distribution, several symmetric RCA indices have been proposed (e.g., Dulum *et al.* 1998 and Laursen 1998).

To measure how well the composition of exports of two countries matches the composition of their imports, a trade complementarity index (TCI) is computed (Sharma 2008; Castro 2012). The TCI correlates country i's export specialisation pattern with country j's import specialisation pattern across the spectrum of all traded products of a particular sector. It is a trade-weighted measure for sector s (e.g., the agricultural sector) of the degree to which the relative-export-share structure of country i's exports ($\mathrm{RXS_i}$) corresponds with the relative-import-share structure of country j's imports ($\mathrm{RMS_j}$) across all k products within the s sector (Vollrath and Johnston 2001). The formula to calculate TCI is as follows:

$$\mathrm{TCI_{ij}} = \sum[\theta^{\mathrm{k}} \times \mathrm{RXS_{ik}} \times \mathrm{RMS_{jk}}] \quad (2)$$

where:

$$\mathrm{RXS_{ik}} = \frac{\mathrm{X_{ik}}/\mathrm{X_{it}}}{\mathrm{X_{wk}}/\mathrm{X_{wt}}} = \frac{\text{Share of k in country i}'\text{s exports of s goods}}{\text{Share of k in the world}'\text{s exports of s goods}}$$

$$\mathrm{RMS_{jk}} = \frac{\mathrm{M_{jk}}/\mathrm{M_{jt}}}{\mathrm{M_{wk}}/\mathrm{M_{wt}}} = \frac{\text{Share of k in country j}'\text{s imports of s goods}}{\text{Share of k in the world}'\text{s imports of s goods}}$$

$$\theta^{\mathrm{k}} = \frac{\mathrm{X_{wk}}}{\mathrm{X_{wt}}} = \text{Share of k in the world}'\text{s exports of s goods}$$

The $\mathrm{TCI_{ij}}$ denotes the trade complementarity index between country i and country j. $\mathrm{X_{ik}}$, $\mathrm{X_{it}}$, $\mathrm{X_{wk}}$, and $\mathrm{X_{wt}}$ are the same as in Equation 1 above. $\mathrm{M_{jk}}$ is the value of imports of product group k by country j and $\mathrm{M_{jt}}$ is the value of total imports of s products by country j. $\mathrm{M_{wk}}$ is the value of world imports of product group k and $\mathrm{M_{wt}}$ is the value of total world imports of s products.

The RXS_{ik} is Balassa's revealed comparative advantage. The RMS_{jk} has the same structure, except that import rather than export data are used. Hence, the TCI can be interpreted as being a trade-weighted measure for sectors of the degrees to which an exporter i's profile of "comparative advantages" corresponds with the profile of "comparative disadvantages" for the importer j. In other words, this index depicts how specialisation in the product composition of country i's exports to the global market mirrors the specialisation in the product composition of country j's imports. There is always some degree of complementarity in bilateral specialisation patterns, provided i exports some products that j imports within the same sector.

The TCI with a value of unity represents a threshold. A value greater (less) than one shows a greater (lesser) level of complementarity in the composition of what country i exports and what country j imports, than occurs between the average pair of countries. The larger the TCI value, the more complementary is the two countries' trade. Again, as in the case of the RCAs, the TCI is asymmetric in the sense that it ranges from one to infinity when two countries' trade is complementary, but from zero to one for the case of low levels of complementarity (Weldemicael 2010).

4. Results, Discussion and Analysis

4.1 Results

The RCAs for each of the major agricultural products of the four countries of interest are calculated using the 3-digit level of the SITC code. The full results which contain RCAs for five years with detailed product descriptions are given in Appendix B. An abbreviated set of the results are reported in Table 3.

In Table 3 is shown that Korea and Japan do not have a comparative advantage in producing almost all of the agricultural products. In 1992, Korea had a comparative advantage in producing a few items in subgroup 3 of Chapter 0 (seafood - SITC codes 034, 036 and 037). By 2011, the comparative advantage in producing these few items disappeared. Japan had no comparative advantages.

China has a comparative advantage in producing some agricultural products, relative to Japan and Korea. Note that (a) the level of the comparative advantage in the production of the majority of these products has declined over the past two decades (see Appendix B for more details about the trends); and (b) the comparative advantage in production of a large number of products has been eroded to the point where it no longer exists. In 2011 Chinese production of only a small number of products had some comparative advantage, chiefly in seafood, vegetables and products, fruits and products, spices, tea, and silk. Most of these activities are labour-intensive.

Contrary to their potential FTA partners, Australia has a comparative advantage in producing many agricultural products, especially land-intensive products such as wheat, meats, wool and cotton. Data in Table 3 shows that Australia has high comparative advantage in producing many agricultural products. In most cases the comparative advantage of Australian farmers is much higher than their competitors in China.

The results of the TCI are shown in Figure 5. The TCIs indicate that agricultural trade among each pair of the four nations is generally complementary. That is, countries import the goods and services for which they have a comparative disadvantage and export those in which they have some specialized comparative advantage.

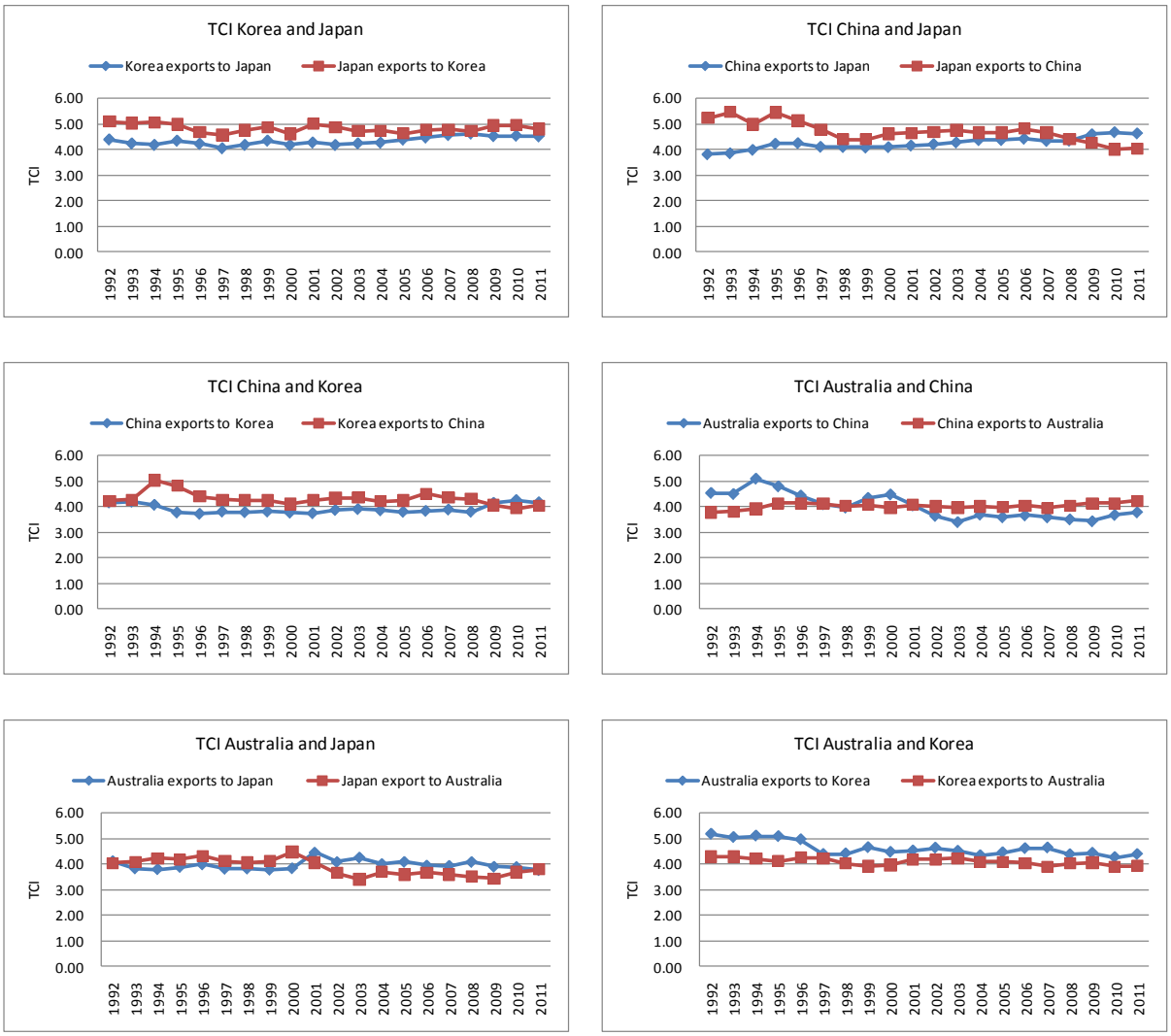
Table 3. Revealed Comparative Advantages

SITC code	Product	Australia			China			Japan			Korea		
		1992	2000	2011	1992	2000	2011	1992	2000	2011	1992	2000	2011
001	Live animals	1.511	5.025	3.488	2.157	1.071	0.255	0.006	0.012	0.023	0.092	0.006	0.003
011	Meat of bovine animals	12.26	13.922	7.828	0.109	0.041	0.027	0.002	0.005	0.023	0.000	0.000	0.011
012	Other meat and edible meat offal	2.333	3.37	2.181	0.765	0.777	0.12	0.004	0.002	0.003	0.176	0.119	0.011
022	Milk and cream and milk products	2.86	6.035	1.901	0.076	0.09	0.02	0.004	0.008	0.011	0.001	0.013	0.034
023	Butter and other fats and oils	2.003	6.049	1.642	0.001	0.003	0.013	0.000	0.000	0.000	0.000	0.000	0.000
024	Cheese and curd	1.846	5.136	1.666	0.000	0.003	0.001	0.000	0.002	0.003	0.000	0.008	0.001
025	Eggs, birds', and egg yolks	0.061	0.113	0.04	1.195	0.577	0.334	0.003	0.006	0.006	0.000	0.004	0.002
034	Fish, fresh (live or dead)	0.547	1.188	0.343	1.101	1.618	1.161	0.238	0.248	0.288	2.128	1.201	0.702
036	Crustaceans, molluscs and aquatic invertebrates	3.762	3.58	1.526	3.45	1.23	1.05	0.066	0.095	0.302	1.549	0.784	0.511
037	Fish, crustaceans, molluscs and other aquatic invertebrates	1.087	0.982	0.195	1.458	3.714	2.225	0.564	0.349	0.547	2.356	1.205	0.255
041	Wheat (including spelt) and meslin, unmilled	5.504	15.138	8.364	0.001	0.000	0.003	0.000	0.000	0.000	0.000	0.001	0.000
042	Rice	3.058	3.427	0.735	1.99	2.16	0.164	0.001	0.027	0.019	0.008	0.002	0.008
043	Barley, unmilled	7.126	13.262	12.26	0.001	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.001
044	Maize (not including sweet corn), unmilled	0.024	0.087	0.031	4.957	2.96	0.012	0.000	0.000	0.000	0.000	0.000	0.000
045	Cereals, unmilled (other than wheat, rice, barley and maize)	2.929	1.642	1.395	1.833	0.534	0.302	0.000	0.001	0.000	0.002	0.015	0.004
054	Vegetables, fresh, chilled, frozen or simply preserved	1.197	1.941	1.109	2.462	1.619	1.036	0.006	0.008	0.01	0.272	0.181	0.072
056	Vegetables, roots and tubers	0.134	0.217	0.113	3.372	2.577	1.818	0.079	0.038	0.022	0.312	0.347	0.134
057	Fruit and nuts (not including oil nuts)	1.087	1.132	0.434	0.582	0.319	0.317	0.028	0.01	0.027	0.307	0.166	0.047
058	Fruit, preserved, and fruit preparations	1.455	1.096	0.184	1.78	2.277	1.376	0.015	0.024	0.023	0.21	0.081	0.107
061	Sugars, molasses and honey	5.503	0.649	0.386	3.099	0.45	0.186	0.01	0.017	0.01	0.487	0.306	0.247

074	Tea and mate	0.069	0.196	0.109	6.659	2.821	1.372	0.021	0.058	0.23	0.021	0.029	0.044
075	Spices	0.378	0.206	0.106	3.396	1.437	1.004	0.024	0.033	0.033	0.156	0.099	0.047
081	Feeding stuff for animals	1.371	2.702	1.05	1.147	0.371	0.28	0.061	0.052	0.026	0.078	0.059	0.064
091	Margarine and shortening	2.376	3.051	1.001	0.043	0.239	0.025	0.058	0.069	0.05	0.009	0.028	0.085
211	Hides and skins (except furskins), raw	5.858	6.624	6.936	0.362	0.031	0.011	0.157	0.087	0.366	0.08	0.067	0.021
222	Oil-seeds and oleaginous fruits of a kind used for extraction	0.33	2.884	1.285	1.918	0.719	0.101	0.007	0.001	0.001	0.001	0.002	0.000
223	Oil-seeds and oleaginous fruits, whole or broken	1.386	1.454	0.535	3.063	0.707	0.323	0.006	0.002	0.001	0.043	0.004	0.004
246	Wood in chips or particles and wood waste	16.073	22	8.197	1.236	1.62	0.009	0.001	0.002	0.003	0.000	0.000	0.000
261	Silk	0.002	0.796	0.002	25.731	19.375	7.621	0.11	0.066	0.115	0.042	0.028	0.013
263	Cotton	11.604	13.457	7.892	1.905	1.192	0.035	0.036	0.008	0.007	0.151	0.095	0.037
264	Jute and other textile bast fibres	0.148	0.018	0.036	3.121	0.333	0.029	0.003	0.006	0.002	0.000	0.019	0.008
265	Vegetable textile fibres	0.084	0.003	0.003	3.181	0.509	0.093	0.003	0.003	0.001	0.017	0.069	0.004
268	Wool and other animal hair	36.483	40.378	24.679	2.15	2.061	1.416	0.011	0.012	0.007	0.066	0.065	0.003
411	Animal oils and fats	5.464	8.319	4.297	0.031	0.15	0.207	0.174	0.181	0.115	0.014	0.054	0.023

Source: based on Appendix B.

Figure 5. Trade Complementarity Index Among Australia, China, Japan and Korea



Source: calculated by the authors based on UN Comtrade Database SITC Revision III.

4.2 Discussion and Analysis

The RCA results indicate unambiguously that Japan and Korea have no comparative advantage in producing agricultural products. Although China has a degree of comparative advantage in producing some lines of agricultural products, the level of such advantage seems to have been declining, with comparative advantage for some products declining rapidly in recent times. China has had little comparative advantage in producing wheat and barley over the past two decades. Historically their producers demonstrated some comparative advantage in producing rice and maize, but such advantage has dissipated. The same applies to producing animal products: any one time comparative advantage is gone. China retains a comparative advantage, albeit a declining benefit, in producing highly labour-intensive products like aquatic products, vegetables, fruits, and silk. As expected, exports from China to Japan and Korea comprise mainly these products (see Table A3 and A5 in Appendix A).

Exports from China to Japan and Korea are not strong competitors with exports from Australia. Regardless whether the proposed trilateral FTA comes to fruition or not, Australia's trade with each of the parties to the tripartite FTA would be little affected. This is because Australia does not produce or does not export the products in which China has a significant comparative advantage (e.g., silk, vegetables). And, for products that both countries produce (e.g., wheat, rice), Australia has a far higher comparative advantage in production than does China.

Nonetheless, if a trilateral FTA is struck, China may well take advantage of any higher prices of agricultural products in Japan and Korea than is achievable in China, and produce some products specifically for the Japanese and Korean markets. A subsequent effect could be that such products may end up competing with Australian exports to these two more lucrative markets. A substantial challenge for China exporting agricultural products to Japan and Korea, especially foods, is the ability of its producers to meet stringent food safety standards. Currently in China, problems of pollution of air, water and soil is widespread. Producing agricultural products to meet safety standards is a formidable challenge, though not an insurmountable one. Given that China has a large land area, it is likely to be possible for China to use small areas of land that is relatively unpolluted to make products that meet high standards of food safety, and reap the higher returns from 'opened up' Japanese and Korean markets. Despite such possibilities, the amount of agricultural products China can produce for exporting to Japan and Korea will never be large. Resource constraints already limit the ability of producers in China to increase agricultural output. This is reflected in the fact that China has started to import agricultural products in large quantities, such as soybean and other oilseeds, and recently, wheat and meats.

A trilateral FTA will make it easier for China to export more agri-foods to Japan and Korea. A major concern for both Japan and Korea is whether China will export more agricultural products, especially some staple food products, to Japan and Korea as a consequence of lower trade barriers under a trilateral FTA. Bureaucrats and the wider population in Japan and Korea are not keen to see increased imports of staple foods from China. Apart from food quality considerations, they do not want to end up with high reliance on the supply of food from China. In Japan and Korea great concerns, even fears, are evident about potentially large adverse impact of increased agricultural imports from China on their domestic-orientated agricultural sectors. Such concern will most likely be the major obstacle to China, Japan and Korea reaching a trilateral FTA.

These concerns are also the key obstacles to the signing of Australia's bilateral FTAs with each of the three countries. The worries of China, Japan and Korea over likely competitive impacts on their domestic agricultural sectors are used to delay the signing of the bilateral FTAs, and these concerns are not likely to diminish or disappear any time soon.

As Australia is anxious to have increased access to their markets with lower barriers it may be prudent, and wise, for Australia to act pragmatically by compromising, to some extent, the extent of the demands being made for access to markets for its agricultural products. Australia claims to have consistently strived to sign high quality and WTO-rule comparable FTAs (Australian Department of Foreign Affairs and Trade 2013b). Compromise about access to markets for agricultural products in its negotiations with any of these three countries will compromise goals of realizing high quality FTAs. Nonetheless, some kind of compromise would be necessary. Otherwise, little or nothing would be achieved in practice; instead majoring in futility, wasting scarce resources engaging in endless rounds of pointless 'negotiations', will remain the order of proceedings.

5. Conclusions and Implications

In this paper, questions have been investigated about how agricultural trade may affect the successful conclusion of a trilateral FTA among China, Japan and Korea, and in turn, whether the successful conclusion of a trilateral FTA would have a significant impact on Australia's negotiations of bilateral FTAs with each of these countries. Agricultural trade situations among each pair of the four countries were highlighted. Revealed comparative advantages in producing agricultural products of each country were calculated. The trade complementarity index between each pair of the countries were also estimated and analysed.

Japan and Korea do not have comparative advantage in producing almost all the agricultural products they produce. China has comparative advantage in producing some agricultural products, chiefly those labour-intensive ones, but the advantage has been declining or disappearing over the past two decades. Australia has comparative advantage in producing most agricultural products, especially the land-intensive ones that is much higher than China. Agricultural trade between these four countries are generally complementary.

The results suggest that signing a trilateral FTA among China, Japan and Korea will be unlikely to cause many extra complications for Australia's bilateral FTA negotiations with each of them. This is because Australia has a strong comparative advantage in producing agricultural products. A trilateral FTA among the three major Asian economies will, *ceteris paribus*, have limited impacts on Australia's agricultural exports to them. This is because none of these trade partners have the resources to

produce more agricultural products and to increase agricultural exports to the other two members by taking the advantage of reduced trade barriers under the trilateral FTA. Even if China may be able to produce some products for the higher returns from the Japanese and Korean markets (and subsequently, importing the same products from other countries to meet domestic demand), the quantities are likely to be small. As far as Australia's agricultural trade is concerned, the trade diversion effect resulting from a trilateral FTA between the three Asian countries is likely to be minimal.

As it happens, in the near future, signing a trilateral FTA among China, Japan and Korea is an unlikely event. The same concerns held by Japan and Korea over access to agricultural markets that had prevented the signing of a bilateral FTA with Australia will similarly hinder the negotiations of the FTA among the three countries. Further, territorial and political disputes will also burden the trilateral FTA negotiations. In this context, the proposed China-Japan-Korea trilateral FTA is unlikely to affect Australian agricultural trade with them, although keeping track of the development of negotiations will be beneficial.

The results of this study strongly endorse the intent, and sense, of signing bilateral FTAs between Australia and each of the three Asian countries. Doing so will further boost agricultural trade among them, bringing about worthwhile gains in economic welfare to all parties involved. There is a long way to go for Australia to conclude successfully its FTA negotiations with each of the three Asian countries. Disagreements about access to agricultural markets remain the main hindrance. None of the three countries is prepared to grant Australia the degree of access for its agricultural exports that is being requested. If Australian trade policy continues to hold to the original demands for agricultural trade, striking an agreement will remain an extremely formidable challenge. A more flexible approach by Australia may be worth considering – second or third best – can still be valuable. If a platform of trade trust is built, as economic growth proceeds apace, better can be done later.

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Appendix A. Major Agricultural Products Traded Between Australia, China, Japan and Korea

Table A1. Korea's agricultural exports to Japan: volume and the share of its total agricultural exports to Japan

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**1440**	**84.4**	**1680**	**85.9**	**1557**	**83.9**	**1123**	**74.5**	**1637**	**63.4**
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	1006	58.9	1143	58.4	1036	55.8	644	42.8	835	32.3
034	Fish, fresh (live or dead), chilled or frozen	527	30.9	598	30.5	567	30.5	395	26.2	542	21.0
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	342	20.0	306	15.6	260	14.0	122	8.1	185	7.1
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	126	7.4	234	11.9	201	10.8	124	8.3	106	4.1
05	Vegetables and fruit	230	13.5	272	13.9	286	15.4	213	14.2	217	8.4
054	Vegetables, fresh, chilled, frozen or simply preserved (including dried leguminous vegetables); roots, tubers and other edible vegetable products, n.e.s., fresh or dried	89	5.2	89	4.5	95	5.1	89	5.9	84	3.3
058	Fruit, preserved, and fruit preparations (excluding fruit juices)	19	1.1	15	0.8	10	0.5	9	0.6	21	0.8
09	Miscellaneous edible products and preparations	34	2.0	51	2.6	53	2.8	86	5.7	207	8.0
098	Edible products and preparations, n.e.s.	34	2.0	51	2.6	53	2.8	86	5.7	207	8.0
1	**Beverages and tobacco**	**13**	**0.7**	**46**	**2.4**	**109**	**5.9**	**150**	**10.0**	**367**	**14.2**
11	Beverages	13	0.7	42	2.1	109	5.9	146	9.7	359	13.9
112	Alcoholic beverages	8	0.4	35	1.8	104	5.6	126	8.3	300	11.6
2	**Crude materials, inedible, except fuels**	**249**	**14.6**	**227**	**11.6**	**188**	**10.1**	**232**	**15.4**	**566**	**21.9**
23	Crude rubber (including synthetic and reclaimed)	14	0.8	3	0.2	31	1.7	55	3.7	288	11.2
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	14	0.8	3	0.2	31	1.7	55	3.7	288	11.2
29	Crude animal and vegetable materials, n.e.s.	195	11.4	194	9.9	131	7.1	154	10.2	225	8.7

292	Crude vegetable materials, n.e.s.	185	10.8	187	9.6	128	6.9	147	9.8	213	8.2

Table A2. Japan's agricultural exports to Korea: volume and the share of its total agricultural exports to Korea

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**66**	**18.6**	**86**	**16.9**	**197**	**37.7**	**286**	**50.4**	**334**	**39.1**
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	23	6.6	35	6.9	124	23.8	167	29.3	143	16.7
034	Fish, fresh (live or dead), chilled or frozen	20	5.6	29	5.7	108	20.5	131	23.0	112	13.1
09	Miscellaneous edible products and preparations	20	5.8	21	4.1	33	6.3	64	11.2	114	13.4
098	Edible products and preparations, n.e.s.	20	5.7	18	3.6	32	6.1	60	10.6	108	12.6
1	**Beverages and tobacco**	**29**	**8.2**	**142**	**28.0**	**46**	**8.8**	**18**	**3.1**	**60**	**7.0**
12	Tobacco and tobacco manufactures	25	7.0	135	26.8	43	8.3	10	1.7	22	2.5
122	Tobacco, manufactured (whether or not containing tobacco substitutes)	25	7.0	135	26.8	43	8.3	6	1.1	20	2.4
2	**Crude materials, inedible, except fuels**	**250**	**70.2**	**262**	**51.7**	**267**	**50.9**	**255**	**44.8**	**425**	**49.8**
23	Crude rubber (including synthetic and reclaimed)	86	24.0	93	18.4	85	16.2	124	21.8	223	26.1
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	86	24.0	93	18.4	85	16.2	123	21.7	223	26.1
25	Pulp and waste paper	4	1.1	9	1.9	64	12.2	42	7.4	91	10.6
251	Pulp and waste paper	4	1.1	9	1.9	64	12.2	42	7.4	91	10.6
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	116	32.5	121	23.9	86	16.5	50	8.8	52	6.1
266	Synthetic fibres suitable for spinning	65	18.1	55	10.9	35	6.7	27	4.8	19	2.2
267	Other man-made fibres suitable for spinning; waste of man-made fibres	43	12.0	62	12.2	48	9.2	18	3.1	15	1.7
29	Crude animal and vegetable materials, n.e.s.	30	8.4	28	5.6	28	5.4	28	4.9	33	3.8
292	Crude vegetable materials, n.e.s.	27	7.5	22	4.3	23	4.4	26	4.6	32	3.7

Table A3. China's agricultural exports to Korea: volume and the share of its total agricultural exports to Korea

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**676**	**84.2**	**413**	**53.1**	**1382**	**79.0**	**2524**	**85.9**	**3532**	**79.2**
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	32	3.9	120	15.4	427	24.4	969	33.0	1574	35.3
034	Fish, fresh (live or dead), chilled or frozen	21	2.6	56	7.2	304	17.4	485	16.5	719	16.1
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	9	1.1	57	7.3	91	5.2	246	8.4	519	11.6
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	2	0.2	4	0.5	20	1.1	188	6.4	271	6.1
04	Cereals and cereal preparations	507	63.2	32	4.1	651	37.2	834	28.4	249	5.6
044	Maize (not including sweet corn), unmilled	472	58.8	3	0.3	604	34.5	749	25.5	0	0.0
05	Vegetables and fruit	53	6.6	113	14.5	144	8.2	389	13.2	1002	22.5
054	Vegetables, fresh, chilled, frozen or simply preserved (including dried leguminous vegetables); roots, tubers and other edible vegetable products, n.e.s., fresh or dried	10	1.3	35	4.5	54	3.1	177	6.0	463	10.4
056	Vegetables, roots and tubers, prepared or preserved, n.e.s.	30	3.7	45	5.8	52	3.0	126	4.3	353	7.9
081	Feeding stuff for animals (not including unmilled cereals)	66	8.2	90	11.6	65	3.7	78	2.7	291	6.5
2	**Crude materials, inedible, except fuels**	**115**	**14.3**	**267**	**34.3**	**357**	**20.4**	**366**	**12.5**	**867**	**19.5**
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	38	4.7	40	5.1	151	8.7	98	3.3	285	6.4

Table A4. Korea's agricultural exports to China: volume and the share of its total agricultural exports to China

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**5**	**3.2**	**90**	**14.4**	**123**	**19.3**	**264**	**30.1**	**921**	**37.0**
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	1	0.4	63	10.1	82	12.9	100	11.4	433	17.4
034	Fish, fresh (live or dead), chilled or frozen	0	0.0	15	2.4	21	3.3	52	5.9	254	10.2
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	0	0.3	47	7.5	60	9.4	44	5.0	159	6.4
06	Sugars, sugar preparations and honey	3	1.9	19	3.0	13	2.1	53	6.0	161	6.5
061	Sugars, molasses and honey	2	1.5	15	2.4	12	1.9	37	4.2	146	5.9
098	Edible products and preparations, n.e.s.	1	0.7	2	0.3	10	1.5	35	4.0	133	5.4
2	**Crude materials, inedible, except fuels**	**139**	**96.6**	**519**	**82.9**	**505**	**79.2**	**591**	**67.3**	**1463**	**58.8**
23	Crude rubber (including synthetic and reclaimed)	4	2.8	31	4.9	94	14.7	272	31.0	1123	45.2
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	4	2.5	25	4.0	93	14.6	271	30.9	1121	45.1
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	132	91.5	457	73.0	17	2.7	271	30.8	196	7.9
266	Synthetic fibres suitable for spinning	130	90.3	441	70.4	373	58.5	255	29.1	184	7.4

Table A5. China's agricultural exports to Japan: volume and the share of its total agricultural exports to Japan

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**2236**	**74.5**	**3979**	**81.6**	**4844**	**83.9**	**7179**	**86.8**	**9883**	**87.3**
01	Meat and meat preparations	160	5.3	556	11.4	783	13.6	944	11.4	1355	12.0
012	Other meat and edible meat offal, fresh, chilled or frozen (except meat and meat offal unfit or unsuitable for human consumption)	150	5.0	507	10.4	433	7.5	0	0.0	0	0.0
017	Meat and edible meat offal, prepared or preserved, n.e.s.	9	0.3	45	0.9	347	6.0	932	11.3	1355	12.0
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	837	27.9	1690	34.7	1952	33.8	2822	34.1	3911	34.5
034	Fish, fresh (live or dead), chilled or frozen	170	5.6	390	8.0	426	7.4	787	9.5	1171	10.3
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	461	15.4	489	10.0	445	7.7	387	4.7	684	6.0
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	166	5.5	712	14.6	1049	18.2	1588	19.2	1967	17.4
04	Cereals and cereal preparations	307	10.2	58	1.2	89	1.5	294	3.6	247	2.2
05	Vegetables and fruit	682	22.7	1340	27.5	1542	26.7	2170	26.2	3198	28.2
054	Vegetables, fresh, chilled, frozen or simply preserved (including dried leguminous vegetables); roots, tubers and other edible vegetable products, n.e.s., fresh or dried	278	9.3	558	11.4	677	11.7	801	9.7	1050	9.3
056	Vegetables, roots and tubers, prepared or preserved, n.e.s.	237	7.9	454	9.3	467	8.1	817	9.9	1262	11.1
2	**Crude materials, inedible, except fuels**	**720**	**24.0**	**858**	**17.6**	**890**	**15.4**	**996**	**12.1**	**1347**	**11.9**
24	Cork and wood	169	5.6	296	6.1	292	5.0	356	4.3	324	2.9
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	213	7.1	165	3.4	158	2.7	90	1.1	112	1.0
29	Crude animal and vegetable materials, n.e.s.	193	6.4	256	5.2	319	5.5	370	4.5	780	6.9

Table A6. Japan's agricultural exports to China: volume and the share of its total agricultural exports to China

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**32**	**10.2**	**89**	**14.7**	**137**	**21.8**	**347**	**23.9**	**299**	**11.5**
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	6	2.1	32	5.3	55	8.7	241	16.6	207	8.0
034	Fish, fresh (live or dead), chilled or frozen	2	0.8	15	2.5	41	6.5	182	12.5	112	4.3
09	Miscellaneous edible products and preparations	9	2.8	38	6.3	68	10.8	68	4.7	56	2.2
098	Edible products and preparations, n.e.s.	8	2.4	36	6.0	67	10.7	67	4.6	55	2.1
2	**Crude materials, inedible, except fuels**	**276**	**89.0**	**510**	**84.2**	**487**	**77.3**	**1087**	**75.0**	**2261**	**87.2**
23	Crude rubber (including synthetic and reclaimed)	64	20.7	89	14.7	122	19.3	238	16.4	725	27.9
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	64	20.7	89	14.6	120	19.1	238	16.4	724	27.9
25	Pulp and waste paper	0	0.1	9	1.5	10	1.5	398	27.5	930	35.8
251	Pulp and waste paper	0	0.1	9	1.5	10	1.5	398	27.5	930	35.8
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	206	66.4	392	64.8	337	53.5	414	28.5	544	21.0
266	Synthetic fibres suitable for spinning	133	42.8	299	49.4	272	43.1	352	24.3	417	16.1
267	Other man-made fibres suitable for spinning; waste of man-made fibres	72	23.3	91	15.0	61	9.7	57	3.9	120	4.6

Table A7. Australia's agricultural exports to China: volume and the share of its total agricultural exports to China

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**76**	**14.1**	**50**	**6.6**	**243**	**20.0**	**403**	**19.3**	**1474**	**21.5**
04	Cereals and cereal preparations	68	12.7	43	0.4	153	12.5	137	6.5	607	8.9
043	Barley, unmilled	65	12.0	0	0.0	152	12.5	122	5.8	379	5.5
2	**Crude materials, inedible, except fuels**	**458**	**84.9**	**667**	**87.7**	**931**	**76.4**	**1593**	**76.1**	**4957**	**72.4**
21	Hides, skins and furskins, raw	23	4.2	35	4.7	79	6.5	130	6.2	670	9.8
211	Hides and skins (except furskins), raw	23	4.2	35	4.7	79	6.4	130	6.2	670	9.8
22	Oil-seeds and oleaginous fruits	0	0.0	0	0.0	177	14.5	13	0.6	117	1.7
222	Oil-seeds and oleaginous fruits of a kind used for the extraction of "soft" fixed vegetable oils (excluding flours and meals)	0	0.0	0	0.0	177	14.5	13	0.6	116	1.7
24	Cork and wood	0	0.0	0	0.0	2	0.2	56	2.7	356	5.2
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	427	79.1	617	81.0	650	53.3	1298	62.0	3608	52.7
263	Cotton	5	0.8	28	3.7	12	1.0	285	13.6	1519	22.2
268	Wool and other animal hair (including wool tops)	422	78.3	587	77.1	637	52.2	1013	48.3	2089	30.5
4	**Animal and vegetable oils, fats and waxes**	**5**	**1.0**	**3**	**5.6**	**44**	**3.6**	**86**	**4.1**	**213**	**3.1**
41	Animal oils and fats	5	0.9	43	5.6	42	3.4	80	3.8	204	3.0
411	Animal oils and fats	5	0.9	43	5.6	42	3.4	80	3.8	204	3.0

Table A8. China's agricultural exports to Australia: volume and the share of its total agricultural exports to Australia

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**26**	**77.7**	**40**	**71.4**	**65**	**76.1**	**236**	**82.1**	**799**	**86.3**
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	2	7.1	4	8.0	9	10.0	72	24.9	232	25.1
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	1	2.7	2	3.4	3	3.9	41	14.3	91	9.8
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	1	2.4	2	3.5	4	4.2	25	8.7	123	13.3
05	Vegetables and fruit	16	50.2	23	40.5	35	41.2	92	31.9	262	28.3
056	Vegetables, roots and tubers, prepared or preserved, n.e.s.	8	24.1	12	21.9	11	13.0	22	7.6	53	5.7
057	Fruit and nuts (not including oil nuts), fresh or dried	4	13.5	4	8.0	4	4.4	9	3.1	25	2.7
058	Fruit, preserved, and fruit preparations (excluding fruit juices)	4	10.8	2	3.5	6	7.5	22	7.7	74	8.0
059	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter	0	0.1	2	3.7	10	11.1	22	7.6	58	6.3
09	Miscellaneous edible products and preparations	2	7.6	6	10.0	12	14.5	30	10.3	121	13.0
098	Edible products and preparations, n.e.s.	2	7.6	6	10.0	12	14.5	30	10.3	121	13.0
1	**Beverages and tobacco**	**1**	**2.5**	**2**	**3.9**	**10**	**11.3**	**22**	**7.7**	**32**	**3.5**
2	**Crude materials, inedible, except fuels**	**5**	**16.3**	**13**	**22.6**	**9**	**10.6**	**26**	**9.1**	**85**	**9.2**
22	Oil-seeds and oleaginous fruits	3	9.2	7	12.5	4	4.7	3	1.1	4	0.4
222	Oil-seeds and oleaginous fruits of a kind used for the extraction of "soft" fixed vegetable oils (excluding flours and meals)	3	9.2	7	12.4	4	4.5	3	1.1	4	0.4

Table A9. Australia's agricultural exports to Japan: volume and the share of its total agricultural exports to Japan

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**1706**	**60.8**	**2253**	**69.3**	**2352**	**78.8**	**3520**	**80.1**	**4354**	**83.0**
01	Meat and meat preparations	925	33.0	1292	39.7	1018	34.1	2214	50.4	2003	38.2
011	Meat of bovine animals, fresh, chilled or frozen	790	28.2	1158	35.6	878	29.4	1808	41.1	1711	32.6
012	Other meat and edible meat offal, fresh, chilled or frozen (except meat and meat offal unfit or unsuitable for human consumption)	125	4.4	119	3.7	128	4.3	352	8.0	277	5.3
02	Dairy products and birds' eggs	147	5.2	208	6.4	267	8.9	318	7.2	451	8.6
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	270	9.6	332	10.2	430	14.4	291	6.6	268	5.1
04	Cereals and cereal preparations	146	5.2	70	2.2	175	5.9	154	3.5	861	16.4
041	Wheat (including spelt) and meslin, unmilled	0	0.0	0	0.0	0	0.0	1	0.0	478	9.1
08	Feeding stuff for animals (not including unmilled cereals)	133	4.7	170	5.2	288	9.7	298	6.8	491	9.4
081	Feeding stuff for animals (not including unmilled cereals)	133	4.7	170	5.2	288	9.7	298	6.8	491	9.4
2	**Crude materials, inedible, except fuels**	**1077**	**38.4**	**968**	**29.8**	**576**	**19.3**	**811**	**18.4**	**812**	**15.5**
24	Cork and wood	281	10.0	430	13.2	219	7.3	576	13.1	618	11.8
246	Wood in chips or particles and wood waste	280	10.0	417	12.8	201	6.7	563	12.8	611	11.6
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	683	24.3	418	12.9	217	7.3	72	1.6	112	2.1
268	Wool and other animal hair (including wool tops)	480	17.1	295	9.1	62	2.1	24	0.5	42	0.8

Table A10. Japan's agricultural exports to Australia: volume and the share of its total agricultural exports to Australia

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**27.9**	**52.6**	**25.0**	**37.2**	**37.2**	**66.2**	**32.3**	**63.2**	**54.6**	**60.3**
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	13.6	25.7	8.7	12.9	12.1	21.5	6.7	13.1	13.9	15.4
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	3.5	6.5	5.4	8.0	9.4	16.7	4.6	9.0	8.9	9.9
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	8.6	16.2	1.8	2.7	1.9	3.4	2.0	3.9	4.7	5.2
09	Miscellaneous edible products and preparations	5.9	11.2	7.4	11.0	10.2	18.2	14.1	27.5	30.1	33.3
098	Edible products and preparations, n.e.s.	5.9	11.2	7.4	11.0	10.2	18.2	14.1	27.5	30.1	33.3
1	**Beverages and tobacco**	**5.7**	**10.7**	**23.2**	**34.5**	**2.5**	**4.5**	**3.5**	**6.8**	**14.1**	**15.6**
11	Beverages	1.8	3.4	2.2	3.3	2.1	3.8	3.4	6.6	14.1	15.6
12	Tobacco and tobacco manufactures	3.9	7.3	21.0	31.2	0.4	0.7	0.1	0.2	0.0	0.0
121	Tobacco, unmanufactured; tobacco refuse	3.0	5.7	19.6	29.2	0.0	0.0	0.0	0.0	0.0	0.0
2	**Crude materials, inedible, except fuels**	**16.2**	**30.5**	**15.9**	**23.6**	**16.0**	**28.4**	**14.7**	**28.7**	**20.8**	**22.9**
23	Crude rubber (including synthetic and reclaimed)	6.0	11.4	9.4	14.0	5.0	8.8	5.0	9.8	11.8	13.0
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	6.0	11.4	9.4	14.0	5.0	8.8	5.0	9.8	11.8	13.0
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	5.9	11.1	2.7	4.0	8.0	14.2	7.7	15.2	6.7	7.4
267	Other man-made fibres suitable for spinning; waste of man-made fibres	0.5	0.9	1.1	1.6	6.9	12.4	6.6	12.8	6.4	7.1

Table A11. Australia's agricultural exports to Korea: volume and the share of its total agricultural exports to Korea

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**235**	**43.2**	**200**	**36.7**	**299**	**53.1**	**709**	**77.5**	**1877**	**85.7**
01	Meat and meat preparations	195	35.9	142	26.0	164	29.1	526	57.5	902	41.2
011	Meat of bovine animals, fresh, chilled or frozen	183	33.6	128	23.6	141	25.0	468	51.2	799	36.5
012	Other meat and edible meat offal, fresh, chilled or frozen (except meat and meat offal unfit or unsuitable for human consumption)	12	2.2	12	2.2	22	3.8	57	6.2	102	4.6
02	Dairy products and birds' eggs	6	1.0	22	4.1	43	7.7	66	7.2	113	5.2
04	Cereals and cereal preparations	11	2.1	10	1.9	25	4.4	35	3.8	706	32.2
041	Wheat (including spelt) and meslin, unmilled	0	0.0	0	0.0	0	0.0	0	0.0	592	27.0
08	Feeding stuff for animals (not including unmilled cereals)	12	2.3	1	0.1	41	7.3	40	4.3	89	4.1
081	Feeding stuff for animals (not including unmilled cereals)	12	2.3	1	0.1	41	7.3	40	4.3	89	4.1
2	**Crude materials, inedible, except fuels**	**304**	**55.9**	**340**	**62.4**	**257**	**45.6**	**174**	**19.0**	**245**	**11.2**
21	Hides, skins and furskins, raw	34	6.3	13	2.3	2	0.4	2	0.2	3	0.1
211	Hides and skins (except furskins), raw	34	6.3	13	2.3	2	0.4	2	0.2	3	0.1
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	263	48.3	302	55.5	202	35.8	121	13.2	168	7.7
263	Cotton	83	15.2	63	11.7	70	12.4	89	9.8	122	5.6
268	Wool and other animal hair (including wool tops)	180	33.0	239	43.8	131	23.3	31	3.4	44	2.0

Table A12. Korea's agricultural exports to Australia: volume and the share of its total agricultural exports to Australia

SITC	Product	1992		1995		2000		2005		2011	
		US$m	%	US$m	%	US$m	%	US$m	%	US$m	%
0	**Food and live animals**	**15.4**	**70.8**	**17.5**	**61.3**	**19.4**	**60.7**	**39.3**	**56.3**	**75.5**	**53.4**
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	10.9	50.1	7.8	27.3	5.7	17.8	3.3	4.8	8.6	6.1
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s	10.3	47.4	6.9	24.2	4.1	12.9	2.3	3.2	3.3	2.3
04	Cereals and cereal preparations	0.6	2.8	1.5	5.2	3.3	10.3	6.6	9.4	19.0	13.4
048	Cereal preparations and preparations of flour or starch of fruits or vegetables	0.6	2.8	1.5	5.1	3.2	9.9	6.5	9.3	15.7	11.1
07	Coffee, tea, cocoa, spices, and manufactures thereof	0.0	0.1	1.4	4.9	1.0	3.2	10.2	14.5	13.4	9.5
071	Coffee and coffee substitutes	0.0	0.0	1.3	4.6	0.8	2.4	7.2	10.3	10.8	7.6
09	Miscellaneous edible products and preparations	2.1	9.6	3.9	13.7	6.8	21.4	14.1	20.1	23.4	16.6
098	Edible products and preparations, n.e.s	2.1	9.6	3.9	13.7	6.8	21.4	14.1	20.1	23.4	16.5
1	**Beverages and tobacco**	**0.1**	**0.3**	**0.2**	**0.8**	**1.0**	**3.3**	**2.5**	**3.6**	**9.8**	**6.9**
2	**Crude materials, inedible, except fuels**	**6.3**	**28.9**	**10.7**	**37.7**	**11.1**	**34.7**	**27.9**	**39.9**	**54.9**	**38.8**
23	Crude rubber (including synthetic and reclaimed)	0.0	0.1	0.4	1.6	6.1	19.2	15.1	21.6	23.8	16.8
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	0.0	0.1	0.4	1.6	6.1	19.2	15.1	21.6	23.8	16.8
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	4.5	20.7	9.9	34.8	4.5	14.0	11.9	17.1	28.3	20.0
266	Synthetic fibres suitable for spinning	4.3	19.7	9.9	34.7	3.7	11.7	11.8	16.9	26.9	19.1

Source: based on UN Comtrade Database SITC Revision III.

Appendix B. RCAs of Australia, China, Japan and Korea

A: Australia

SITC code	Product	1992	1995	2000	2005	2011
001	Live animals other than animals of division	1.511	3.760	5.025	4.587	3.488
011	Meat of bovine animals, fresh, chilled or frozen	12.260	11.575	13.922	15.627	7.828
012	Other meat and edible meat offal, fresh, chilled or frozen (except meat and meat offal unfit or unsuitable for human consumption)	2.333	2.226	3.370	3.786	2.181
016	Meat and edible meat offal, salted, in brine, dried or smoked; edible flours and meals of meat or meat offal	0.231	0.282	0.264	0.272	0.075
017	Meat and edible meat offal, prepared or preserved, n.e.s.	0.404	0.607	0.666	0.795	0.221
022	Milk and cream and milk products other than butter or cheese	2.860	3.821	6.035	4.468	1.901
023	Butter and other fats and oils derived from milk	2.003	2.739	6.049	3.599	1.642
024	Cheese and curd	1.846	2.666	5.136	3.514	1.666
025	Eggs, birds', and egg yolks, fresh, dried or otherwise preserved, sweetened or not; egg albumin	0.061	0.240	0.113	0.073	0.040
034	Fish, fresh (live or dead), chilled or frozen	0.547	0.606	1.188	0.625	0.343
035	Fish, dried, salted or in brine; smoked fish (whether or not cooked before or during the smoking process); flours, meals and pellets of fish, fit for human consumption	0.128	0.178	0.388	0.364	0.200
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	3.762	3.868	3.580	3.103	1.526
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	1.087	0.856	0.982	0.501	0.195
041	Wheat (including spelt) and meslin, unmilled	5.504	6.868	15.138	12.086	8.364
042	Rice	3.058	2.767	3.427	0.297	0.735
043	Barley, unmilled	7.126	7.328	13.262	14.795	12.260
044	Maize (not including sweet corn), unmilled	0.024	0.016	0.087	0.029	0.031
045	Cereals, unmilled (other than wheat, rice, barley and maize)	2.929	1.581	1.642	2.267	1.395
046	Meal and flour of wheat and flour of meslin	0.726	0.624	2.407	2.636	0.457
047	Other cereal meals and flours	0.602	1.493	1.454	1.112	0.177
048	Cereal preparations and preparations of flour or starch of fruits or vegetables	1.327	1.526	1.609	1.402	0.948
054	Vegetables, fresh, chilled, frozen or simply preserved (including dried leguminous vegetables); roots, tubers and other edible vegetable products, n.e.s.	1.197	1.068	1.941	0.967	1.109
056	Vegetables, roots and tubers, prepared or preserved, n.e.s.	0.134	0.210	0.217	0.181	0.113
057	Fruit and nuts (not including oil nuts), fresh or dried	1.087	0.974	1.132	0.956	0.434
058	Fruit, preserved, and fruit preparations (excluding fruit juices)	1.455	1.081	1.096	0.674	0.184
059	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter	0.545	1.084	0.789	0.897	0.309
061	Sugars, molasses and honey	5.503	8.867	0.649	0.561	0.386
062	Sugar confectionery	0.778	1.037	1.239	0.850	0.507
071	Coffee and coffee substitutes	0.225	0.141	0.212	0.194	0.110
072	Cocoa	0.012	0.007	0.006	0.009	0.011
073	Chocolate and other food preparations containing cocoa, n.e.s.	0.937	1.094	1.538	1.088	0.555
074	Tea and maté	0.069	0.358	0.196	0.093	0.109
075	Spices	0.378	0.313	0.206	0.206	0.106

081	Feeding stuff for animals (not including unmilled cereals)	1.371	1.350	2.702	1.842	1.050
091	Margarine and shortening	2.376	2.662	3.051	1.805	1.001
098	Edible products and preparations, n.e.s.	0.548	0.607	1.078	0.838	0.854
111	Non-alcoholic beverages, n.e.s.	0.315	0.536	0.265	0.208	0.193
112	Alcoholic beverages	0.949	1.229	3.261	4.493	1.788
121	Tobacco, unmanufactured; tobacco refuse	0.025	0.067	0.015	0.095	0.047
122	Tobacco, manufactured (whether or not containing tobacco substitutes)	0.082	0.133	0.186	0.276	0.271
211	Hides and skins (except furskins), raw	5.858	6.033	6.624	7.949	6.936
212	Furskins, raw (including heads, tails, paws and other pieces or cuttings, suitable for furriers' use), other than hides and skins of group 211	0.159	0.027	0.018	0.015	0.001
222	Oil-seeds and oleaginous fruits of a kind used for the extraction of "soft" fixed vegetable oils (excluding flours and meals)	0.330	0.616	2.884	1.305	1.285
223	Oil-seeds and oleaginous fruits, whole or broken, of a kind used for the extraction of other fixed vegetable oils (including flours and meals of oil-seeds or oleaginous fruit, n.e.s.)	1.386	1.437	1.454	0.650	0.535
231	Natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums, in primary forms (including latex) or in plates, sheets or strip	0.037	0.005	0.051	0.008	0.006
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	0.129	0.145	0.064	0.043	0.036
244	Cork, natural, raw and waste (including natural cork in blocks or sheets)	0.141	0.097	0.013	0.118	0.004
245	Fuel wood (excluding wood waste) and wood charcoal	0.011	0.328	0.502	0.475	0.017
246	Wood in chips or particles and wood waste	16.073	18.577	22.000	20.511	8.197
247	Wood in the rough or roughly squared	0.120	0.358	0.583	0.532	1.117
248	Wood, simply worked, and railway sleepers of wood	0.065	0.105	0.144	0.243	0.175
251	Pulp and waste paper	0.033	0.109	0.117	0.362	0.328
261	Silk	0.002	0.001	0.796	0.003	0.002
263	Cotton	11.604	6.640	13.457	8.151	7.892
264	Jute and other textile bast fibres, n.e.s., raw or processed but not spun; tow and waste of these fibres (including yarn waste and garnetted stock)	0.148	0.289	0.018	0.021	0.036
265	Vegetable textile fibres (other than cotton and jute), raw or processed but not spun; waste of these fibres	0.084	0.021	0.003	0.002	0.003
266	Synthetic fibres suitable for spinning	0.089	0.025	0.155	0.016	0.005
267	Other man-made fibres suitable for spinning; waste of man-made fibres	0.019	0.028	0.011	0.010	0.013
268	Wool and other animal hair (including wool tops)	36.483	34.472	40.378	34.891	24.679
269	Worn clothing and other worn textile articles; rags	1.109	1.371	1.258	1.046	0.759
291	Crude animal materials, n.e.s.	2.435	2.269	1.995	1.970	0.726
292	Crude vegetable materials, n.e.s.	0.450	0.512	0.610	0.466	0.186
411	Animal oils and fats	5.464	6.398	8.319	5.954	4.297
421	Fixed vegetable fats and oils, "soft", crude, refined or fractionated	0.023	0.010	0.255	0.227	0.295
422	Fixed vegetable fats and oils, crude, refined or fractionated, other than "soft"	0.013	0.019	0.027	0.017	0.006
431	Animal or vegetable fats and oils, processed; waxes; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	0.600	0.513	0.911	0.750	0.323

B: China

SITC code	Product	1992	1995	2000	2005	2011
001	Live animals other than animals of division 03	2.157	1.576	1.071	0.336	0.255
011	Meat of bovine animals, fresh, chilled or frozen	0.109	0.069	0.041	0.025	0.027
012	Other meat and edible meat offal, fresh, chilled or frozen (except meat and meat offal unfit or unsuitable for human consumption)	0.765	1.403	0.777	0.237	0.120
016	Meat and edible meat offal, salted, in brine, dried or smoked; edible flours and meals of meat or meat offal	0.367	0.410	0.208	0.033	0.008
017	Meat and edible meat offal, prepared or preserved, n.e.s.	1.693	1.799	2.209	1.460	0.880
022	Milk and cream and milk products other than butter or cheese	0.076	0.057	0.090	0.056	0.020
023	Butter and other fats and oils derived from milk	0.001	0.002	0.003	0.000	0.013
024	Cheese and curd	0.000	0.001	0.003	0.001	0.001
025	Eggs, birds', and egg yolks, fresh, dried or otherwise preserved, sweetened or not; egg albumin	1.195	0.781	0.577	0.463	0.334
034	Fish, fresh (live or dead), chilled or frozen	1.101	1.699	1.618	1.223	1.161
035	Fish, dried, salted or in brine; smoked fish (whether or not cooked before or during the smoking process); flours, meals and pellets of fish, fit for human consumption	0.963	1.623	1.011	0.748	0.650
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	3.450	2.142	1.230	0.762	1.050
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	1.458	3.031	3.714	2.861	2.225
041	Wheat (including spelt) and meslin, unmilled	0.001	0.003	0.000	0.027	0.003
042	Rice	1.990	0.079	2.160	0.293	0.164
043	Barley, unmilled	0.001	0.003	0.001	0.002	0.003
044	Maize (not including sweet corn), unmilled	4.957	0.039	2.960	1.277	0.012
045	Cereals, unmilled (other than wheat, rice, barley and maize)	1.833	0.844	0.534	0.444	0.302
046	Meal and flour of wheat and flour of meslin	0.501	0.675	0.637	0.453	0.222
047	Other cereal meals and flours	0.500	0.420	0.329	0.380	0.010
048	Cereal preparations and preparations of flour or starch of fruits or vegetables	0.426	0.380	0.225	0.170	0.183
054	Vegetables, fresh, chilled, frozen or simply preserved (including dried leguminous vegetables); roots, tubers and other edible vegetable products, n.e.s.	2.462	2.101	1.619	1.053	1.036
056	Vegetables, roots and tubers, prepared or preserved, n.e.s.	3.372	3.649	2.577	1.804	1.818
057	Fruit and nuts (not including oil nuts), fresh or dried	0.582	0.554	0.319	0.254	0.317
058	Fruit, preserved, and fruit preparations (excluding fruit juices)	1.780	1.851	2.277	1.519	1.376
059	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter	0.073	0.196	0.559	0.773	0.660
061	Sugars, molasses and honey	3.099	0.672	0.450	0.210	0.186
062	Sugar confectionery	1.123	0.684	0.804	0.690	0.718
071	Coffee and coffee substitutes	0.010	0.018	0.036	0.043	0.049
072	Cocoa	0.458	0.244	0.117	0.100	0.059
073	Chocolate and other food preparations containing cocoa, n.e.s.	0.061	0.035	0.039	0.049	0.072
074	Tea and maté	6.659	4.524	2.821	1.591	1.372
075	Spices	3.396	3.570	1.437	1.881	1.004
081	Feeding stuff for animals (not including unmilled cereals)	1.147	0.553	0.371	0.217	0.280
091	Margarine and shortening	0.043	0.025	0.239	0.094	0.025

098	Edible products and preparations, n.e.s.	0.571	0.538	0.849	0.463	0.401
111	Non-alcoholic beverages, n.e.s.	2.271	1.664	1.529	0.506	0.299
112	Alcoholic beverages	0.210	0.165	0.105	0.066	0.065
121	Tobacco, unmanufactured; tobacco refuse	1.107	0.651	0.685	0.505	0.523
122	Tobacco, manufactured (whether or not containing tobacco substitutes)	0.816	1.568	0.232	0.196	0.159
211	Hides and skins (except furskins), raw	0.362	0.282	0.031	0.008	0.011
212	Furskins, raw (including heads, tails, paws and other pieces or cuttings, suitable for furriers' use), other than hides and skins of group 211	0.346	0.089	0.090	0.052	0.004
222	Oil-seeds and oleaginous fruits of a kind used for the extraction of "soft" fixed vegetable oils (excluding flours and meals)	1.918	1.370	0.719	0.406	0.101
223	Oil-seeds and oleaginous fruits, whole or broken, of a kind used for the extraction of other fixed vegetable oils (including flours and meals of oil-seeds or oleaginous fruit, n.e.s.)	3.063	1.301	0.707	0.376	0.323
231	Natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums, in primary forms (including latex) or in plates, sheets or strip	0.017	0.022	0.002	0.009	0.009
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	0.138	0.240	0.224	0.213	0.375
244	Cork, natural, raw and waste (including natural cork in blocks or sheets)	0.068	0.216	0.313	0.050	0.014
245	Fuel wood (excluding wood waste) and wood charcoal	1.003	2.109	3.607	0.582	0.311
246	Wood in chips or particles and wood waste	1.236	2.871	1.620	0.431	0.009
247	Wood in the rough or roughly squared	0.372	0.217	0.027	0.003	0.005
248	Wood, simply worked, and railway sleepers of wood	0.235	0.297	0.264	0.317	0.244
251	Pulp and waste paper	0.006	0.034	0.011	0.018	0.042
261	Silk	25.731	20.250	19.375	10.674	7.621
263	Cotton	1.905	0.203	1.192	0.014	0.035
264	Jute and other textile bast fibres, n.e.s., raw or processed but not spun; tow and waste of these fibres (including yarn waste and garnetted stock)	3.121	0.890	0.333	0.014	0.029
265	Vegetable textile fibres (other than cotton and jute), raw or processed but not spun; waste of these fibres	3.181	1.293	0.509	0.153	0.093
266	Synthetic fibres suitable for spinning	0.066	0.198	0.238	0.860	1.748
267	Other man-made fibres suitable for spinning; waste of man-made fibres	0.038	0.094	0.062	0.132	0.890
268	Wool and other animal hair (including wool tops)	2.150	1.300	2.061	1.450	1.416
269	Worn clothing and other worn textile articles; rags	0.137	0.153	0.169	0.026	0.082
291	Crude animal materials, n.e.s.	6.496	6.718	5.663	2.679	1.929
292	Crude vegetable materials, n.e.s.	1.288	1.407	0.795	0.408	0.559
411	Animal oils and fats	0.031	0.023	0.150	0.082	0.207
421	Fixed vegetable fats and oils, "soft", crude, refined or fractionated	0.282	0.563	0.198	0.135	0.049
422	Fixed vegetable fats and oils, crude, refined or fractionated, other than "soft"	0.848	0.980	0.112	0.041	0.009
431	Animal or vegetable fats and oils, processed; waxes; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	0.128	0.088	0.097	0.095	0.108

C: Japan

SITC code	Product	1992	1995	2000	2005	2011
001	Live animals other than animals of division 03	0.006	0.010	0.012	0.013	0.023
011	Meat of bovine animals, fresh, chilled or frozen	0.002	0.003	0.005	0.003	0.023
012	Other meat and edible meat offal, fresh, chilled or frozen (except meat and meat offal unfit or unsuitable for human consumption)	0.004	0.001	0.002	0.001	0.003
016	Meat and edible meat offal, salted, in brine, dried or smoked; edible flours and meals of meat or meat offal	0.001	0.003	0.002	0.001	0.000
017	Meat and edible meat offal, prepared or preserved, n.e.s.	0.019	0.019	0.019	0.008	0.006
022	Milk and cream and milk products other than butter or cheese	0.004	0.004	0.008	0.008	0.011
023	Butter and other fats and oils derived from milk	0.000	0.000	0.000	0.000	0.000
024	Cheese and curd	0.000	0.000	0.002	0.003	0.003
025	Eggs, birds', and egg yolks, fresh, dried or otherwise preserved, sweetened or not; egg albumin	0.003	0.004	0.006	0.019	0.006
034	Fish, fresh (live or dead), chilled or frozen	0.238	0.186	0.248	0.334	0.288
035	Fish, dried, salted or in brine; smoked fish (whether or not cooked before or during the smoking process); flours, meals and pellets of fish, fit for human consumption	0.109	0.094	0.112	0.080	0.058
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	0.066	0.067	0.095	0.190	0.302
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	0.564	0.357	0.349	0.426	0.547
041	Wheat (including spelt) and meslin, unmilled	0.000	0.000	0.000	0.000	0.000
042	Rice	0.001	0.005	0.027	0.010	0.019
043	Barley, unmilled	0.000	0.000	0.000	0.000	0.000
044	Maize (not including sweet corn), unmilled	0.000	0.000	0.000	0.002	0.000
045	Cereals, unmilled (other than wheat, rice, barley and maize)	0.000	0.000	0.001	0.001	0.000
046	Meal and flour of wheat and flour of meslin	0.352	0.334	0.604	0.490	0.259
047	Other cereal meals and flours	0.007	0.010	0.008	0.021	0.015
048	Cereal preparations and preparations of flour or starch of fruits or vegetables	0.124	0.104	0.114	0.098	0.117
054	Vegetables, fresh, chilled, frozen or simply preserved (including dried leguminous vegetables); roots, tubers and other edible vegetable products, n.e.s.	0.006	0.003	0.008	0.011	0.010
056	Vegetables, roots and tubers, prepared or preserved, n.e.s.	0.079	0.051	0.038	0.032	0.022
057	Fruit and nuts (not including oil nuts), fresh or dried	0.028	0.019	0.010	0.025	0.027
058	Fruit, preserved, and fruit preparations (excluding fruit juices)	0.015	0.015	0.024	0.026	0.023
059	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter	0.008	0.006	0.017	0.016	0.014
061	Sugars, molasses and honey	0.010	0.009	0.017	0.021	0.010
062	Sugar confectionery	0.153	0.113	0.138	0.143	0.112
071	Coffee and coffee substitutes	0.026	0.005	0.015	0.018	0.023
072	Cocoa	0.027	0.022	0.021	0.014	0.006
073	Chocolate and other food preparations containing cocoa, n.e.s.	0.016	0.009	0.031	0.047	0.049
074	Tea and maté	0.021	0.052	0.058	0.123	0.230
075	Spices	0.024	0.040	0.033	0.051	0.033
081	Feeding stuff for animals (not including unmilled cereals)	0.061	0.055	0.052	0.033	0.026
091	Margarine and shortening	0.058	0.073	0.069	0.074	0.050

098	Edible products and preparations, n.e.s.	0.284	0.224	0.321	0.288	0.316
111	Non-alcoholic beverages, n.e.s.	0.052	0.038	0.063	0.084	0.152
112	Alcoholic beverages	0.032	0.043	0.058	0.039	0.067
121	Tobacco, unmanufactured; tobacco refuse	0.007	0.043	0.000	0.018	0.003
122	Tobacco, manufactured (whether or not containing tobacco substitutes)	0.128	0.206	0.134	0.227	0.243
211	Hides and skins (except furskins), raw	0.157	0.170	0.087	0.260	0.366
212	Furskins, raw (including heads, tails, paws and other pieces or cuttings, suitable for furriers' use), other than hides and skins of group 211	0.035	0.002	0.003	0.001	0.000
222	Oil-seeds and oleaginous fruits of a kind used for the extraction of "soft" fixed vegetable oils (excluding flours and meals)	0.007	0.001	0.001	0.001	0.001
223	Oil-seeds and oleaginous fruits, whole or broken, of a kind used for the extraction of other fixed vegetable oils (including flours and meals of oil-seeds or oleaginous fruit, n.e.s.)	0.006	0.001	0.002	0.001	0.001
231	Natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums, in primary forms (including latex) or in plates, sheets or strip	0.001	0.001	0.007	0.003	0.001
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	1.395	1.783	1.908	1.839	2.165
244	Cork, natural, raw and waste (including natural cork in blocks or sheets)	0.009	0.027	0.016	0.017	0.024
245	Fuel wood (excluding wood waste) and wood charcoal	0.008	0.041	0.041	0.094	0.083
246	Wood in chips or particles and wood waste	0.001	0.001	0.002	0.005	0.003
247	Wood in the rough or roughly squared	0.003	0.002	0.001	0.006	0.028
248	Wood, simply worked, and railway sleepers of wood	0.009	0.008	0.004	0.007	0.019
251	Pulp and waste paper	0.004	0.027	0.068	0.342	0.528
261	Silk	0.110	0.089	0.066	0.269	0.115
263	Cotton	0.036	0.018	0.008	0.005	0.007
264	Jute and other textile bast fibres, n.e.s., raw or processed but not spun; tow and waste of these fibres (including yarn waste and garnetted stock)	0.003	0.000	0.006	0.000	0.002
265	Vegetable textile fibres (other than cotton and jute), raw or processed but not spun; waste of these fibres	0.003	0.007	0.003	0.001	0.001
266	Synthetic fibres suitable for spinning	1.673	1.906	2.373	2.485	2.522
267	Other man-made fibres suitable for spinning; waste of man-made fibres	1.341	1.151	1.323	1.249	2.268
268	Wool and other animal hair (including wool tops)	0.011	0.006	0.012	0.009	0.007
269	Worn clothing and other worn textile articles; rags	0.444	0.365	0.437	0.399	0.610
291	Crude animal materials, n.e.s.	0.080	0.072	0.072	0.061	0.147
292	Crude vegetable materials, n.e.s.	0.144	0.113	0.132	0.128	0.160
411	Animal oils and fats	0.174	0.089	0.181	0.164	0.115
421	Fixed vegetable fats and oils, "soft", crude, refined or fractionated	0.021	0.014	0.031	0.023	0.023
422	Fixed vegetable fats and oils, crude, refined or fractionated, other than "soft"	0.010	0.008	0.016	0.012	0.007
431	Animal or vegetable fats and oils, processed; waxes; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	0.117	0.071	0.141	0.070	0.089

D: Korea

SITC code	Product	1992	1995	2000	2005	2011
001	Live animals other than animals of division 03	0.092	0.040	0.006	0.009	0.003
011	Meat of bovine animals, fresh, chilled or frozen	0.000	0.003	0.000	0.001	0.011
012	Other meat and edible meat offal, fresh, chilled or frozen (except meat and meat offal unfit or unsuitable for human consumption)	0.176	0.176	0.119	0.009	0.011
016	Meat and edible meat offal, salted, in brine, dried or smoked; edible flours and meals of meat or meat offal	0.000	0.001	0.038	0.002	0.000
017	Meat and edible meat offal, prepared or preserved, n.e.s.	0.014	0.020	0.044	0.123	0.035
022	Milk and cream and milk products other than butter or cheese	0.001	0.021	0.013	0.023	0.034
023	Butter and other fats and oils derived from milk	0.000	0.000	0.000	0.000	0.000
024	Cheese and curd	0.000	0.001	0.008	0.003	0.001
025	Eggs, birds', and egg yolks, fresh, dried or otherwise preserved, sweetened or not; egg albumin	0.000	0.004	0.004	0.001	0.002
034	Fish, fresh (live or dead), chilled or frozen	2.128	1.661	1.201	0.624	0.702
035	Fish, dried, salted or in brine; smoked fish (whether or not cooked before or during the smoking process); flours, meals and pellets of fish, fit for human consumption	0.337	0.163	0.188	0.113	0.148
036	Crustaceans, molluscs and aquatic invertebrates, whether in shell or not, fresh (live or dead), chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans or of aquatic invertebrates, fit for human consumption	1.549	0.992	0.784	0.463	0.511
037	Fish, crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, n.e.s.	2.356	1.809	1.205	0.444	0.255
041	Wheat (including spelt) and meslin, unmilled	0.000	0.000	0.001	0.000	0.000
042	Rice	0.008	0.007	0.002	0.000	0.008
043	Barley, unmilled	0.000	0.001	0.000	0.000	0.001
044	Maize (not including sweet corn), unmilled	0.000	0.000	0.000	0.000	0.000
045	Cereals, unmilled (other than wheat, rice, barley and maize)	0.002	0.003	0.015	0.001	0.004
046	Meal and flour of wheat and flour of meslin	0.024	0.048	0.182	0.087	0.071
047	Other cereal meals and flours	0.015	0.019	0.041	0.078	0.249
048	Cereal preparations and preparations of flour or starch of fruits or vegetables	0.254	0.398	0.301	0.257	0.234
054	Vegetables, fresh, chilled, frozen or simply preserved (including dried leguminous vegetables); roots, tubers and other edible vegetable products, n.e.s.	0.272	0.174	0.181	0.104	0.072
056	Vegetables, roots and tubers, prepared or preserved, n.e.s.	0.312	0.276	0.347	0.234	0.134
057	Fruit and nuts (not including oil nuts), fresh or dried	0.307	0.200	0.166	0.088	0.047
058	Fruit, preserved, and fruit preparations (excluding fruit juices)	0.210	0.112	0.081	0.057	0.107
059	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter	0.002	0.078	0.020	0.048	0.026
061	Sugars, molasses and honey	0.487	0.312	0.306	0.234	0.247
062	Sugar confectionery	0.860	1.081	0.686	0.555	0.400
071	Coffee and coffee substitutes	0.058	0.047	0.069	0.132	0.175
072	Cocoa	0.001	0.005	0.010	0.002	0.000
073	Chocolate and other food preparations containing cocoa, n.e.s.	0.163	0.140	0.110	0.094	0.064
074	Tea and maté	0.021	0.027	0.029	0.062	0.044
075	Spices	0.156	0.113	0.099	0.086	0.047
081	Feeding stuff for animals (not including unmilled cereals)	0.078	0.055	0.059	0.060	0.064
091	Margarine and shortening	0.009	0.024	0.028	0.034	0.085

098	Edible products and preparations, n.e.s.	0.427	0.419	0.464	0.503	0.512
111	Non-alcoholic beverages, n.e.s.	0.488	0.373	0.171	0.230	0.425
112	Alcoholic beverages	0.049	0.078	0.166	0.138	0.163
121	Tobacco, unmanufactured; tobacco refuse	0.156	0.026	0.096	0.075	0.042
122	Tobacco, manufactured (whether or not containing tobacco substitutes)	0.011	0.093	0.083	0.496	0.620
211	Hides and skins (except furskins), raw	0.080	0.147	0.067	0.049	0.021
212	Furskins, raw (including heads, tails, paws and other pieces or cuttings, suitable for furriers' use), other than hides and skins of group 211	0.002	0.129	0.030	0.000	0.000
222	Oil-seeds and oleaginous fruits of a kind used for the extraction of "soft" fixed vegetable oils (excluding flours and meals)	0.001	0.002	0.002	0.000	0.000
223	Oil-seeds and oleaginous fruits, whole or broken, of a kind used for the extraction of other fixed vegetable oils (including flours and meals of oil-seeds or oleaginous fruit, n.e.s.)	0.043	0.015	0.004	0.018	0.004
231	Natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums, in primary forms (including latex) or in plates, sheets or strip	0.011	0.034	0.012	0.006	0.002
232	Synthetic rubber; reclaimed rubber; waste, parings and scrap of unhardened rubber	1.086	1.154	2.234	2.818	4.618
244	Cork, natural, raw and waste (including natural cork in blocks or sheets)	0.001	0.000	0.001	0.001	0.006
245	Fuel wood (excluding wood waste) and wood charcoal	0.071	0.007	0.031	0.024	0.009
246	Wood in chips or particles and wood waste	0.000	0.000	0.000	0.003	0.000
247	Wood in the rough or roughly squared	0.002	0.001	0.002	0.001	0.000
248	Wood, simply worked, and railway sleepers of wood	0.068	0.025	0.013	0.009	0.007
251	Pulp and waste paper	0.001	0.022	0.002	0.009	0.055
261	Silk	0.042	0.399	0.028	0.005	0.013
263	Cotton	0.151	0.103	0.095	0.052	0.037
264	Jute and other textile bast fibres, n.e.s., raw or processed but not spun; tow and waste of these fibres (including yarn waste and garnetted stock)	0.000	0.004	0.019	0.005	0.008
265	Vegetable textile fibres (other than cotton and jute), raw or processed but not spun; waste of these fibres	0.017	0.035	0.069	0.004	0.004
266	Synthetic fibres suitable for spinning	5.313	7.426	7.660	6.257	5.050
267	Other man-made fibres suitable for spinning; waste of man-made fibres	0.241	0.288	0.295	0.397	0.600
268	Wool and other animal hair (including wool tops)	0.066	0.039	0.065	0.045	0.003
269	Worn clothing and other worn textile articles; rags	0.507	0.788	2.383	2.232	2.234
291	Crude animal materials, n.e.s.	0.327	0.296	0.290	0.194	0.469
292	Crude vegetable materials, n.e.s.	1.118	0.815	0.577	0.418	0.373
411	Animal oils and fats	0.014	0.033	0.054	0.054	0.023
421	Fixed vegetable fats and oils, "soft", crude, refined or fractionated	0.003	0.039	0.018	0.009	0.046
422	Fixed vegetable fats and oils, crude, refined or fractionated, other than "soft"	0.048	0.001	0.002	0.003	0.002
431	Animal or vegetable fats and oils, processed; waxes; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	0.026	0.054	0.123	0.064	0.049

Source: calculated by the authors based on UN ComtradeDatabase SITC Revision III.