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Trade Performance of Fruit and Vegetable Industry in Selected ASEAN Countries

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Abstract

This paper examines the trade performance for thirteen commodities in the fruit and vegetable industry in relation to that of selected ASEAN countries (Philippines, Indonesia, Singapore and Thailand), based on Revealed Comparative Advantage (RCA) indicator. The analysis shows that Singapore has comparative advantage in 5 commodities (ground-nuts, hazelnuts, plums, apricots and walnuts), Philippines has comparative advantage in 3 commodities (tomatoes nes prepared or preserved, tomatoes whole or in peaces and cherries), Thailand and Malaysia has comparative advantage in 2 commodities (citrus fruits, fruit and vegetable juice, and tomatoes and apple juice, respectively) while Indonesia has comparative advantage in 1 commodity (cashew nuts). Malaysia has comparative advantage only in tomatoes and apple juice but comparative disadvantage in other commodities such as cashew nuts, walnuts and fruit and vegetable juice. The RCA index for apple juice in Malaysia is increasing over the years 2000 to 2006 indicating improvement in comparative advantage. However, the comparative advantage of tomatoes is constant.

Key Words: *Trade performance, fruit and vegetable sector, revealed comparative advantage and ASEAN.*

Introduction

Malaysia's total trade in 2007 has increased by 3.8 per cent from RM1.07 trillion in 2006. The increase was broad-based with growth contributed by the manufacturing, agricultural and mining sectors. The manufacturing sector continued to dominate Malaysia's export. However, agricultural exports with 9.4 per cent share showed an increase of 24.4 per cent to RM57.7 billion in 2007 (Ministry of International Trade and Industry, 2008). This export has been dominated by industrial crop such as palm oil and rubber.

In order to develop food crops, monetary aid policy was introduced to develop in various National Agriculture Policies (Ist, 2nd and 3rd) but yet it is still not capable to compete with industrial crops. This is proven by the increased in food trade imbalance since 1960. For example, food trade deficit has increased from RM3 million in 1990 to RM8 billion in 2007 (Department of Statistics Malaysia, 2007). However, net trade balance for commodity and agriculture produce (such as palm-oil, rubber, cocoa, food, drink and tobacco) show a positive figure due to growth in value added from the exports of industrial crops.

The negative food net trade balance has propelled Malaysian government to introduce policy reforms and charting new directions for the industry. In the Ninth Malaysia Plan (RMK9), the government had targeted a positive trade balance batch of RM1.2 billion in 2010 through various industry development programs and strategy (Malaysia, 2006). The government has given priority to increasing domestic food production in that plan. The Food Sector Trade Balance Action Plan has been enacted as early as 2000 to improve the food trade balance (Ministry of Agriculture and Agro-based Industry, Malaysia, 2000). In order to increase exports and to achieve surplus in the food trade, Malaysian processors need to identify potential food sectors that are internationally competitive.

Thus, the paper attempts to identify the potential fruits and vegetables by examining the export performance ratios (EPR) of selected fruits and vegetables in Malaysia vis-à-vis selected ASEAN countries. The EPR is expected to identify potential commodities in the fruits and vegetable industry that can contribute to the decrease in food trade deficits in the future. The

EPR for selected commodities are also calculated for the Philippines, Indonesia, Singapore and Thailand. In order to include the dynamic of the EPR, the trend line is estimated for each commodity to evaluate the changes in comparative advantage through out the period.

Methodology

Competitiveness is defined as industry's ability to get profit and at the same time to maintain domestic market share and exports (Agriculture, Canada, 1990). In this definition, there are two types of competitive measurement namely profit and market share. In many literatures, market share alone is used to measure expected profit (or proxy) and used as competitiveness indicators. The most popular and common method used to measure competitiveness is Revealed Comparative Advantage (RCA) spearheaded by Balassa in 1965. One of the indicators in RCA is Export Performance Ratio (EPR). This ratio is calculated for Malaysia and selected ASEAN countries who are the main competitor for Malaysian food exports. Fruits and vegetables are ASEAN countries main exports to the world because all of the countries have almost similar geophysical features. Thus, it is interesting to find out which commodity in the fruits and vegetable industry each country specialize.

The data used in this analysis are gathered from the Global Trade Information System. The data was downloaded from the website www.gtis.com. This study only focused on trade data for fruits and vegetable industry in Malaysia and selected ASEAN countries (Philippines, Indonesia, Singapore and Thailand) over the period 2000 to 2006

EPR (ep_{ij}) measure expresses the share of the country's exports of commodity j in total world exports of commodity j, as a ratio of the share of country i's total exports in the world exports.

$$ep_{ij} = \left[\left(X_{ij} / X_{wj}\right)/\left(X_{ie} / X_{we}\right)\right]$$

where X_{ij} = country i's exports of commodity j

X_{wj} = world exports of commodity j

X_{ie} = country i's total exports

X_{we} = world total exports

If the EPR is two, this suggest that the commodity j's share in country i's export is twice the corresponding world share. This means that the country has competitive advantage in that particular commodity. If EPR is less than one, this means that the country's share in the commodity market is smaller than the country's share in total export. So, the country does not have competitive advantage or competitiveness in that particular commodity. In other words, the country performance in the commodity market is less than its performance (from aspect of market share) in the total export market.

The dynamic of comparative advantage is also evaluated base on the changing trend of the EPR. The improvement of comparative advantage reflecting from the positive trend of EPR can be identified and vice versa. The significant positive trend will compound the recommendation of the potential commodity.

Results

Export Performance Ratio (EPR)

Table 1 shows the EPR's average for fruits and vegetable industry in selected ASEAN countries (Malaysia Philippines, Indonesia, Singapore and Thailand) from 2000 to 2006[1]. Philippines has the highest numbers of commodities in comparative advantage compared to other countries. The commodities are tomatoes n.e.s prepared or preserved (HS 200290), tomatoes whole or in pieces (HS 200210), fruit and vegetable juice (HS 200980), cherries (HS 200860), ground-nuts (HS 200811) and citrus fruits (HS 200830) with EPR 9.06, 4.90, 2.93, 2.11, 1.63 and 1.09, respectively. Five commodities that have comparative advantage for Singapore are hazelnuts (HS 080222), ground-nuts (HS 200811), plums (HS 080940), tomatoes whole or in pieces (HS 200210) and apricots (HS 081310) with respective EPR of 3.32, 2.90, 2.49, 2.25 and 1.86. Malaysia has comparative advantage in 4 commodities and the highest is in tomatoes (HS 070200), followed by ground-nuts (HS 200811), tomatoes n.e.s prepared or preserved (HS 200290) and apple juice (HS 200971) with EPR 3.82, 2.65, 2.38 and 2.08. On the other hand, Thailand also has comparative advantage in 4 commodities which are citrus fruit (HS 200830), fruit and vegetable juice (HS 200980), tomatoes whole or in pieces (HS 200210) and tomatoes n.e.s prepared or preserved (HS 200290) with respective EPR of 6.55, 4.91, 1.33 and 1.05. Three

[1] Detailed calculations of EPR are listed in appendix (Table 7-11).

commodities that have comparative advantage for Indonesia are cashew nuts (HS 080131), followed by tomatoes n.e.s prepared or preserved (HS 200290) and apricots (HS 081310) with EPR of 12.49, 1.76 and 1.44 respectively.

Table 1 Average of Export Performance Ratio in Fruit and Vegetable Industry, 2000-2006

HS Code (6 digit)	Commodity	Average of Export Performance Ratio				
		Philippines	Indonesia	Malaysia	Singapore	Thailand
070200	Tomatoes, Fresh Or Chilled	0.00	0.32	3.82	0.04	0.18
080131	Cashew Nuts, In Shell	0.35	12.49	0.00	0.15	0.01
080222	Hazelnuts Or Filberts, Fresh Or Dried, Shelled Or Peeled	0.00	0.16	0.87	3.32	0.04
080232	Walnuts, Fresh Or Dried, Shelled Or Peeled	0.00	0.04	0.00	0.04	0.00
080940	Plums And Sloes, Fresh	0.00	0.06	0.33	2.49	0.23
081310	Apricots, Dried	0.00	1.44	0.05	1.86	0.91
200210	Tomatoes,Whole Or In Pieces Prepared Or Preserved O/T By Vinegar/Acetic Acid	4.90	0.55	0.80	2.25	1.33
200290	Tomatoes Nes,Prepared Or Preserved Other Than By Vinegar Or Acetic Acid	9.06	1.76	2.38	0.37	1.05
200811	Ground-Nuts Nes O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	1.63	0.71	2.65	2.90	0.19
200830	Citrus Fruits Nes, O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	1.09	0.09	0.68	0.27	6.55
200860	Cherries Nes, O/W Prep Or Presvd Whether Or Not Sugared, Sweetened Or Spirited	2.11	0.00	0.04	0.65	0.03
200971	Apple Juice,Brix Value<=20, Unfermented & Not Spirited, W/N Sugared/Sweetened	0.00	0.00	2.08	0.18	0.00
200980	Fruit & Veg Juice Nes (Exc Mx) Unferment Unspirited, Whether Or Not Sug/Sweet	2.93	0.28	0.42	0.55	4.91

Trend Analysis

Table 2 presents the trend analysis for export performance ratio for the case of Philippines. As can be seen from the table, there are 5 commodities show significant positive trend, which reflects a good sign for the industry. Tomatoes nes and Ground Nut nes are found to be significant at 5 percent level, whereas, Cashew Nuts, Tomatoes, Whole or In Pieces and Cherries nes are found to be significant at 1 percent level. Comparing the whole commodities for Philippines, Tomatoes, whole or in Pisces recorded the most significant increasing trend with its t-stat at 5.445.

Table 2 Trend line for Export Performance Ratio (Philippines), 2000-2006

HS Code (6 digits)	Commodity	Coefficient	t-stat
070200	Tomatoes, Fresh Or Chilled	0	0.000
080131	Cashew Nuts, In Shell	0.125	4.101 ***
080222	Hazelnuts Or Filberts, Fresh Or Dried, Shelled Or Peeled	0	0.000
080232	Walnuts, Fresh Or Dried, Shelled Or Peeled	0	0.000
080940	Plums And Sloes, Fresh	0	0.000
081310	Apricots, Dried	0	0.000
200210	Tomatoes,Whole Or In Pieces Prepared Or Preserved O/T By Vinegar/Acetic Acid	0.875	5.445***
200290	Tomatoes Nes,Prepared Or Preserved Other Than By Vinegar Or Acetic Acid	0.755	2.850**
200811	Ground-Nuts Nes O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	0.391	3.039**
200830	Citrus Fruits Nes, O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	-0.200	-0.656
200860	Cherries Nes, O/W Prep Or Presvd Whether Or Not Sugared, Sweetened Or Spirited	1.452	4.202 ***
200971	Apple Juice,Brix Value<=20, Unfermented & Not Spirited, W/N Sugared/Sweetened	0	0.000
200980	Fruit & Veg Juice Nes (Exc Mx) Unferment Unspirited, Whether Or Not Sug/Sweet	0.089	0.923

Note: ** and *** denote export performance ratio is significant at the 5% and 1% levels, respectively.

Table 3 illustrates the trend analysis for export performance ratio for Indonesia. From the table below we can see that 3 commodities show significant positive trend, whereas 2 other commodities show significant negative trend. Cashew Nuts nes topped the rank as it recorded the highest significant increasing trend with its t-stat at 8.511, significant at 1 percent level.

Tomatoes nes, and Ground Nuts nes are found to be significant at 5 percent level. Two other commodities that significantly negative at 5 percent and 1 percent level are Tomatoes, Fresh or Chilled and Fruit & Vegetable Juice nes respectively.

Table 3 Trend line for Export Performance Ratio (Indonesia), 2000-2006

HS Code (6 digits)	Commodity	Coefficient	t-stat
070200	Tomatoes, Fresh Or Chilled	-0.088	-3.796**
080131	Cashew Nuts, In Shell	1.167	8.511***
080222	Hazelnuts Or Filberts, Fresh Or Dried, Shelled Or Peeled	0.055	0.906
080232	Walnuts, Fresh Or Dried, Shelled Or Peeled	0.000	0.000
080940	Plums And Sloes, Fresh	0.001	0.035
081310	Apricots, Dried	-0.186	-0.583
200210	Tomatoes,Whole Or In Pieces Prepared Or Preserved O/T By Vinegar/Acetic Acid	-0.091	-1.351
200290	Tomatoes Nes,Prepared Or Preserved Other Than By Vinegar Or Acetic Acid	0.278	3.836**
200811	Ground-Nuts Nes O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	0.195	3.842**
200830	Citrus Fruits Nes, O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	-0.007	-0.528
200860	Cherries Nes, O/W Prep Or Presvd Whether Or Not Sugared, Sweetened Or Spirited	-2.7E-5	-0.205
200971	Apple Juice,Brix Value<=20, Unfermented & Not Spirited, W/N Sugared/Sweetened	0	0.000
200980	Fruit & Veg Juice Nes (Exc Mx) Unferment Unspirited, Whether Or Not Sug/Sweet	-0.041	-5.199***

Note: ** and *** denote export performance ratio is significant at the 5% and 1% levels, respectively.

Export Performance Ratio for Malaysia is presented in Table 4. As shown in the table, 3 commodities are found to be significantly positive at 1 percent level, namely Tomatoes, Whole or In pieces, Ground Nuts nes and Apple Juice. Ground Nuts topped the rank as its t-stat registered at 8.436, whereas the commodities are found to be insignificant.

Table 4 Trend line for Export Performance Ratio (Malaysia), 2000-2006

HS Code (6 digits)	Commodity	Coefficient	t-stat
070200	Tomatoes, Fresh Or Chilled	-0.098	-1.623
080131	Cashew Nuts, In Shell	0.001	1.732
080222	Hazelnuts Or Filberts, Fresh Or Dried, Shelled Or Peeled	0.502	1.622
080232	Walnuts, Fresh Or Dried, Shelled Or Peeled	0.003	1.732
080940	Plums And Sloes, Fresh	0.016	0.504
081310	Apricots, Dried	-0.017	-1.226
200210	Tomatoes,Whole Or In Pieces Prepared Or Preserved O/T By Vinegar/Acetic Acid	0.017	0.734
200290	Tomatoes Nes,Prepared Or Preserved Other Than By Vinegar Or Acetic Acid	0.160	4.447***
200811	Ground-Nuts Nes O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	0.271	8.436***
200830	Citrus Fruits Nes, O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	0.002	0.029
200860	Cherries Nes, O/W Prep Or Presvd Whether Or Not Sugared, Sweetened Or Spirited	0.009	1.188
200971	Apple Juice,Brix Value<=20, Unfermented & Not Spirited, W/N Sugared/Sweetened	0.825	5.795***
200980	Fruit & Veg Juice Nes (Exc Mx) Unferment Unspirited, Whether Or Not Sug/Sweet	0.050	1.894

Note: *** denotes export performance ratio is significant at the 1% level.

Export Performance Ratio for Singapore is depicted in Table 5. From the table below we can see that 2 commodities show significant positive trend, whereas 5 other commodities show significant negative trend. Tomatoes nes recorded the highest significant increasing trend for Singapore with its t-stat at 5.993, significant at 1 percent level. Tomatoes nes, and Fruit & Vegetable Juice nes is found to be significant at 10 percent level. Five other commodities that significantly negative are Cashew Nuts, Walnuts, Plums & Sloes and Dried Apricots.

Table 5 Trend line for Export Performance Ratio (Singapore), 2000-2006

HS Code (6 digits)	Commodity	Coefficient	t-stat
070200	Tomatoes, Fresh Or Chilled	0.000	0.000
080131	Cashew Nuts, In Shell	-0.041	-2.389*
080222	Hazelnuts Or Filberts, Fresh Or Dried, Shelled Or Peeled	0.088	0.239
080232	Walnuts, Fresh Or Dried, Shelled Or Peeled	-0.008	-3.751**
080940	Plums And Sloes, Fresh	-0.357	-3.703**
081310	Apricots, Dried	-0.418	-2.423*
200210	Tomatoes,Whole Or In Pieces Prepared Or Preserved O/T By Vinegar/Acetic Acid	0.039	0.911
200290	Tomatoes Nes,Prepared Or Preserved Other Than By Vinegar Or Acetic Acid	0.036	5.993***
200811	Ground-Nuts Nes O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	-0.007	-0.162
200830	Citrus Fruits Nes, O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	-0.082	-2.730**
200860	Cherries Nes, O/W Prep Or Presvd Whether Or Not Sugared, Sweetened Or Spirited	-0.041	-1.047
200971	Apple Juice,Brix Value<=20, Unfermented & Not Spirited, W/N Sugared/Sweetened	0.013	0.238
200980	Fruit & Veg Juice Nes (Exc Mx) Unferment Unspirited, Whether Or Not Sug/Sweet	0.055	2.393*

Note: *, ** and *** denote export performance ratio is significant at the 10%, 5% and 1% levels, respectively.

Table 6 presents the Export Performance Ratio for Thailand. As shown in the table, 3 commodities are found to be significantly positive at 5 percent level, namely Tomatoes nes, Cherries nes and Fruit & Vegetable Juice. Cherries nes topped the rank as its t-stat registered at 3.888, whereas other commodities are found to be insignificant.

Table 6 Trend line for Export Performance Ratio (Thailand), 2000-2006

HS Code (6 digits)	Commodity	Coefficient	t-stat
070200	Tomatoes, Fresh Or Chilled	0.023	0.869
080131	Cashew Nuts, In Shell	-0.002	-1.061
080222	Hazelnuts Or Filberts, Fresh Or Dried, Shelled Or Peeled	-0.018	-1.415
080232	Walnuts, Fresh Or Dried, Shelled Or Peeled		
080940	Plums And Sloes, Fresh	0.027	0.458
081310	Apricots, Dried	0.231	0.804
200210	Tomatoes,Whole Or In Pieces Prepared Or Preserved O/T By Vinegar/Acetic Acid	-0.055	-0.418
200290	Tomatoes Nes,Prepared Or Preserved Other Than By Vinegar Or Acetic Acid	0.203	3.143**
200811	Ground-Nuts Nes O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	-0.002	-0.186
200830	Citrus Fruits Nes, O/W Prep Or Presvd, Sugared, Sweetened, Spirited Or Not	-0.218	-0.809
200860	Cherries Nes, O/W Prep Or Presvd Whether Or Not Sugared, Sweetened Or Spirited	0.022	3.888**
200971	Apple Juice,Brix Value<=20, Unfermented & Not Spirited, W/N Sugared/Sweetened	0.000	0.000
200980	Fruit & Veg Juice Nes (Exc Mx) Unferment Unspirited, Whether Or Not Sug/Sweet	0.226	2.213**

Note: ** denotes export performance ratio is significant at the 5% level.

Conclusion

All commodities in vegetable and food industry have comparative advantage with EPR greater than 1.00 for at least one ASEAN country. Malaysia, for example, has comparative advantage in 4 products and thus, Malaysia needs to determine effective strategy for developing these products and not to depend solely on imports. The country should use high technology applications in growing fruits and vegetable such as hydroponics and other closed systems because of less land available for agriculture. Potential product should be determined for economic diversification and to implement import substitution policy or export promotion. Specialization among ASEAN countries would bring mutual benefits to all ASEAN's society. Other ASEAN countries should follow Singapore strategy whereby raw materials are imported from neighboring countries and re-exported the final products after enhancing value added. By identifying potential products, countries in the ASEAN region could take advantage of the

ASEAN free trade area (AFTA) to increase their exports amongst ASEAN countries and the rest of the world.

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Appendix

Table 7 EPR in Fruit and Vegetable Industry for Philippines, 2000-2006

HS Code (6 digit)	Commodity	2000	2001	2002	2003	2004	2005	2006	Average
070200	Tomatoes, fresh or chilled	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
080131	Cashew nuts, in shell	0.00	0.00	0.37	0.57	0.75	0.62	0.63	0.35
080222	Hazelnuts or filberts, fresh or dried, shelled or peeled	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
080232	Walnuts, fresh or dried, shelled or peeled	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
080940	Plums and sloes, fresh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
081310	Apricots, dried	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200210	Tomatoes,whole or in pieces prepared or preserved o/t by vinegar/acetic acid	3.90	2.99	3.71	4.89	6.18	8.12	7.82	4.90
200290	Tomatoes nes,prepared or preserved other than by vinegar or acetic acid	8.10	7.83	8.80	8.06	8.67	13.12	11.66	9.06
200811	Ground-nuts nes o/w prep or presvd, sugared, sweetened, spirited or not	1.03	1.47	1.00	1.50	1.18	3.28	3.41	1.63
200830	Citrus fruits nes, o/w prep or presvd, sugared, sweetened, spirited or not	0.06	0.77	4.24	1.36	0.09	0.04	0.06	1.09
200860	Cherries nes, o/w prep or presvd whether or not sugared, sweetened or spirited	0.00	0.00	0.86	2.37	1.50	5.52	9.66	2.11
200971	Apple juice,brix value<=20, unfermented & not spirited, w/n sugared/sweetened	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200980	Fruit & veg juice nes (exc mx) unferment unspirited, whether or not sug/sweet	2.07	3.66	3.05	2.63	3.02	3.15	3.25	2.93

Table 8 EPR in Fruit and Vegetable Industry for Indonesia, 2000-2006

HS Code (6 digit)	Commodity	2000	2001	2002	2003	2004	2005	2006	Average
070200	Tomatoes, fresh or chilled	0.69	0.48	0.22	0.15	0.20	0.22	0.05	0.32
080131	Cashew nuts, in shell	9.65	10.51	10.95	12.82	15.37	15.26	15.90	12.49
080222	Hazelnuts or filberts, fresh or dried, shelled or peeled	0.00	0.00	0.00	0.48	0.00	0.77	0.00	0.16
080232	Walnuts, fresh or dried, shelled or peeled	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.04
080940	Plums and sloes, fresh	0.00	0.00	0.00	0.40	0.01	0.01	0.00	0.06
081310	Apricots, dried	0.00	1.56	3.26	3.81	1.14	0.00	0.01	1.44
200210	Tomatoes,whole or in pieces prepared or preserved o/t by vinegar/acetic acid	0.48	0.53	1.27	0.67	0.28	0.19	0.19	0.55
200290	Tomatoes nes,prepared or preserved other than by vinegar or acetic acid	1.15	1.19	1.47	1.77	2.76	1.89	2.85	1.76
200811	Ground-nuts nes o/w prep or presvd, sugared, sweetened, spirited or not	0.14	0.18	1.07	0.62	0.80	1.30	1.30	0.71
200830	Citrus fruits nes, o/w prep or presvd, sugared, sweetened, spirited or not	0.16	0.03	0.07	0.05	0.19	0.04	0.05	0.09
200860	Cherries nes, o/w prep or presvd whether or not sugared, sweetened or spirited	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200971	Apple juice,brix value<=20, unfermented & not spirited, w/n sugared/sweetened	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200980	Fruit & veg juice nes (exc mx) unferment unspirited, whether or not sug/sweet	0.41	0.37	0.23	0.27	0.19	0.18	0.17	0.28

Table 9 EPR in Fruit and Vegetable Industry for Malaysia, 2000-2006

HS Code (6 digit)	Commodity	2000	2001	2002	2003	2004	2005	2006	Average
070200	Tomatoes, fresh or chilled	3.79	4.49	3.98	3.61	3.37	3.71	3.60	3.82
080131	Cashew nuts, in shell	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
080222	Hazelnuts or filberts, fresh or dried, shelled or peeled	0.00	1.17	0.03	0.14	0.07	0.55	5.09	0.87
080232	Walnuts, fresh or dried, shelled or peeled	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
080940	Plums and sloes, fresh	0.37	0.42	0.20	0.12	0.29	0.62	0.36	0.33
081310	Apricots, dried	0.01	0.21	0.05	0.00	0.00	0.01	0.00	0.05
200210	Tomatoes,whole or in pieces prepared or preserved o/t by vinegar/acetic acid	0.65	0.82	1.00	0.71	0.73	0.85	0.88	0.80
200290	Tomatoes nes,prepared or preserved other than by vinegar or acetic acid	1.98	2.31	1.91	2.44	2.64	2.84	2.88	2.38
200811	Ground-nuts nes o/w prep or presvd, sugared, sweetened, spirited or not	1.92	2.33	2.42	2.70	2.69	3.33	3.69	2.65
200830	Citrus fruits nes, o/w prep or presvd, sugared, sweetened, spirited or not	1.00	0.28	0.24	1.11	1.02	0.58	0.56	0.68
200860	Cherries nes, o/w prep or presvd whether or not sugared, sweetened or spirited	0.00	0.00	0.08	0.02	0.11	0.07	0.03	0.04
200971	Apple juice,brix value<=20, unfermented & not spirited, w/n sugared/sweetened	0.00	0.00	1.09	3.27	4.10	3.58	4.31	2.08
200980	Fruit & veg juice nes (exc mx) unferment unspirited, whether or not sug/sweet	0.20	0.27	0.40	0.69	0.56	0.43	0.51	0.42

Table 10 EPR in Fruit and Vegetable Industry for Singapore, 2000-2006

HS Code (6 digit)	Commodity	2000	2001	2002	2003	2004	2005	2006	Average
070200	Tomatoes, fresh or chilled	0.05	0.01	0.07	0.06	0.04	0.04	0.04	0.04
080131	Cashew nuts, in shell	0.19	0.23	0.36	0.13	0.03	0.07	0.02	0.15
080222	Hazelnuts or filberts, fresh or dried, shelled or peeled	2.61	0.98	5.50	4.13	5.62	1.78	2.86	3.32
080232	Walnuts, fresh or dried, shelled or peeled	0.06	0.07	0.05	0.03	0.05	0.02	0.02	0.04
080940	Plums and sloes, fresh	3.11	3.29	3.12	3.10	1.61	1.21	1.67	2.49
081310	Apricots, dried	3.10	3.82	1.71	0.84	0.57	0.92	1.51	1.86
200210	Tomatoes,whole or in pieces prepared or preserved o/t by vinegar/acetic acid	2.35	1.81	2.38	2.35	2.14	2.29	2.47	2.25
200290	Tomatoes nes,prepared or preserved other than by vinegar or acetic acid	0.23	0.33	0.34	0.37	0.41	0.48	0.44	0.37
200811	Ground-nuts nes o/w prep or presvd, sugared, sweetened, spirited or not	2.80	2.83	2.87	3.22	3.18	2.68	2.73	2.90
200830	Citrus fruits nes, o/w prep or presvd, sugared, sweetened, spirited or not	0.75	0.20	0.23	0.24	0.18	0.08	0.08	0.27
200860	Cherries nes, o/w prep or presvd whether or not sugared, sweetened or spirited	0.90	0.54	0.46	0.94	0.73	0.49	0.46	0.65
200971	Apple juice,brix value<=20, unfermented & not spirited, w/n sugared/sweetened	0.00	0.00	0.18	0.74	0.26	0.08	0.04	0.18
200980	Fruit & veg juice nes (exc mx) unferment unspirited, whether or not sug/sweet	0.48	0.40	0.51	0.36	0.76	0.71	0.70	0.55

Table 11 EPR in Fruit and Vegetable Industry for Thailand, 2000-2006

HS Code (6 digit)	Commodity	2000	2001	2002	2003	2004	2005	2006	Average
070200	Tomatoes, fresh or chilled	0.18	0.05	0.09	0.16	0.48	0.18	0.18	0.18
080131	Cashew nuts, in shell	0.02	0.00	0.02	0.01	0.00	0.00	0.01	0.01
080222	Hazelnuts or filberts, fresh or dried, shelled or peeled	0.11	0.00	0.18	0.00	0.00	0.00	0.00	0.04
080232	Walnuts, fresh or dried, shelled or peeled	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
080940	Plums and sloes, fresh	0.00	0.20	0.02	0.80	0.13	0.45	0.05	0.23
081310	Apricots, dried	2.12	0.00	0.00	0.00	0.22	0.56	3.83	0.91
200210	Tomatoes,whole or in pieces prepared or preserved o/t by vinegar/acetic acid	0.76	2.64	0.75	1.45	1.43	1.18	0.99	1.33
200290	Tomatoes nes,prepared or preserved other than by vinegar or acetic acid	0.34	0.58	0.73	1.74	1.47	1.31	1.50	1.05
200811	Ground-nuts nes o/w prep or presvd, sugared, sweetened, spirited or not	0.27	0.17	0.08	0.19	0.25	0.14	0.21	0.19
200830	Citrus fruits nes, o/w prep or presvd, sugared, sweetened, spirited or not	5.19	8.31	6.83	7.24	7.79	5.27	4.86	6.55
200860	Cherries nes, o/w prep or presvd whether or not sugared, sweetened or spirited	0.00	0.00	0.00	0.00	0.04	0.12	0.11	0.03
200971	Apple juice,brix value<=20, unfermented & not spirited, w/n sugared/sweetened	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
200980	Fruit & veg juice nes (exc mx) unferment unspirited, whether or not sug/sweet	4.17	3.86	5.12	5.77	5.35	5.02	5.43	4.91